KACE® Service Desk 13.0

# Administrator Guide

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# About the KACE Service Desk

Quest® KACE® Service Desk is a virtual appliance designed to automate device management, application deployment, patching, asset management, reporting, and Service Desk ticket management.

For more information about KACE SD series appliances, go to the Quest website, https://www.quest.com/products/kace-systems-management-appliance/.

KACE Service Desk is a limited version of the KACE Systems Management Appliance that allows you to manage end-user tickets and assets. It uses the KACE agent to manage a single device node, and up to 250 agentless nodes. Unlike KACE Systems Management Appliance, it does not include patching and scripting features, as well as software asset management capabilities. You can read about these functions in this manual, however, they are disabled in KACE Service Desk. You can easily upgrade KACE Service Desk to KACE Systems Management Appliance, to enable the full set of end-point management capabilities. To find out complete information about this product, its technical specifications and reference materials, visit the documentation landing page at https://support.quest.com/kace-systems-management-appliance/technical-documents.

# About the appliance components

Appliance components include software, hardware, web-based interfaces, and a mobile app interface.

**Table 1. Appliance components**

| Component | Description |
|---|---|
| Virtual appliance | The appliance runs in a virtual environment that uses a VMware® or Microsoft® Hyper-V® infrastructure. For the latest information about requirements for managed devices, and browser requirements for accessing the Administrator Console, see the *Technical Specifications* available on the product documentation page: https://support.quest.com/kace-systems-management-appliance/technical-documents. |
| Command Line Console | The Command Line Console is a terminal window interface to the appliance. The interface is designed primarily to configure the appliance and enforce policies. See Power-on the appliance and log in to the Administrator Console. |
| Administrator Console | The Administrator Console is the web-based interface used to control the appliance. To access the Administrator Console, go to `http://`**appliance_hostname**`/admin` where **appliance_hostname** is the hostname of your appliance. If the Organization component is enabled, you can access the System-level settings of the Administrator Console at `http://`**appliance_hostname**`/system`. To view the full path of URLs in the Administrator Console, which can be useful when searching the database or sharing links, add `ui` to the URL you use to log in. For example: `http://`**appliance_hostname**`/admin`. |
| User Console | The User Console is the web-based interface that makes applications available to users on a self-service basis. It also enables users to file Service Desk support tickets to request help or report issues. To access |

| Component | Description |
|---|---|
| | the User Console, go to `http://`**appliance_hostname**`/user` where **appliance_hostname** is the hostname of your appliance.<br>The User Console provides:<br>• A repository of applications that users can download as needed.<br>• A way for users to submit and track tickets requesting help.<br>• Assistance for routine tasks, such as software installation, and access to the Quest Support Knowledge Base, https://support.quest.com/kace-systems-management-appliance/kb.<br>To customize the User Console, see:<br>• Configure appliance General Settings with the Organization component enabled.<br>• Configure appliance General Settings without the Organization component. |
| KACE Agent | The KACE Agent is an application that can be installed on devices to enable device management through the appliance. Agents that are installed on managed devices communicate with the appliance through the agent messaging protocol. Agents perform scheduled tasks, such as collecting inventory information from, and distributing software to, managed devices. Agentless management is available for devices that cannot have Agent software installed, such as printers and devices with operating systems that are not supported by the Agent.<br>See Provisioning the KACE Agent. |
| KACE GO | KACE GO is an app that enables administrators to access Service Desk tickets, inventory information, and application deployment features from their smart phones or tablets. The app also allows non-admin users to submit Service Desk tickets, view the status of submitted tickets, and read Knowledge Base articles from their mobile devices. You can download KACE GO from the Apple® App Store℠ for iOS devices, or from the Google Play™ store for Android™ devices.<br>See Configuring Mobile Device Access. |

# About the Administrator Console

The components available in the Administrator Console might differ, depending on the license key, organization settings, appliance settings, and user role.

In addition, if the Organization component is enabled, the Administrator Console has two levels: The Admin level, which shows organization-related features, and the System level, which shows appliance-related features.

If the Organization component is not enabled, Admin- and System-level features are available at the Admin level.

**NOTE:** Your license key determines whether the Organization component is enabled or disabled. See View product licensing information and About organizations.

There are three login modes:

- **Admin mode without the Organization component enabled**: If the Organization component is not enabled on your appliance, go to `http://`**appliance_hostname**`/admin`, where **appliance_hostname**

is the host name of your appliance, to log in to this mode. For components available in this mode, see Components available in Admin mode without the Organization component.

- **Admin mode with the Organization component enabled**: If the Organization component is enabled on your appliance, go to `http://`**appliance_hostname**`/admin` to log in to the Default organization. **appliance_hostname** is the host name of your appliance. Admin mode enables you to manage the components available to the selected organization. For components available in this mode, see Components available in Admin mode with the Organization component enabled.

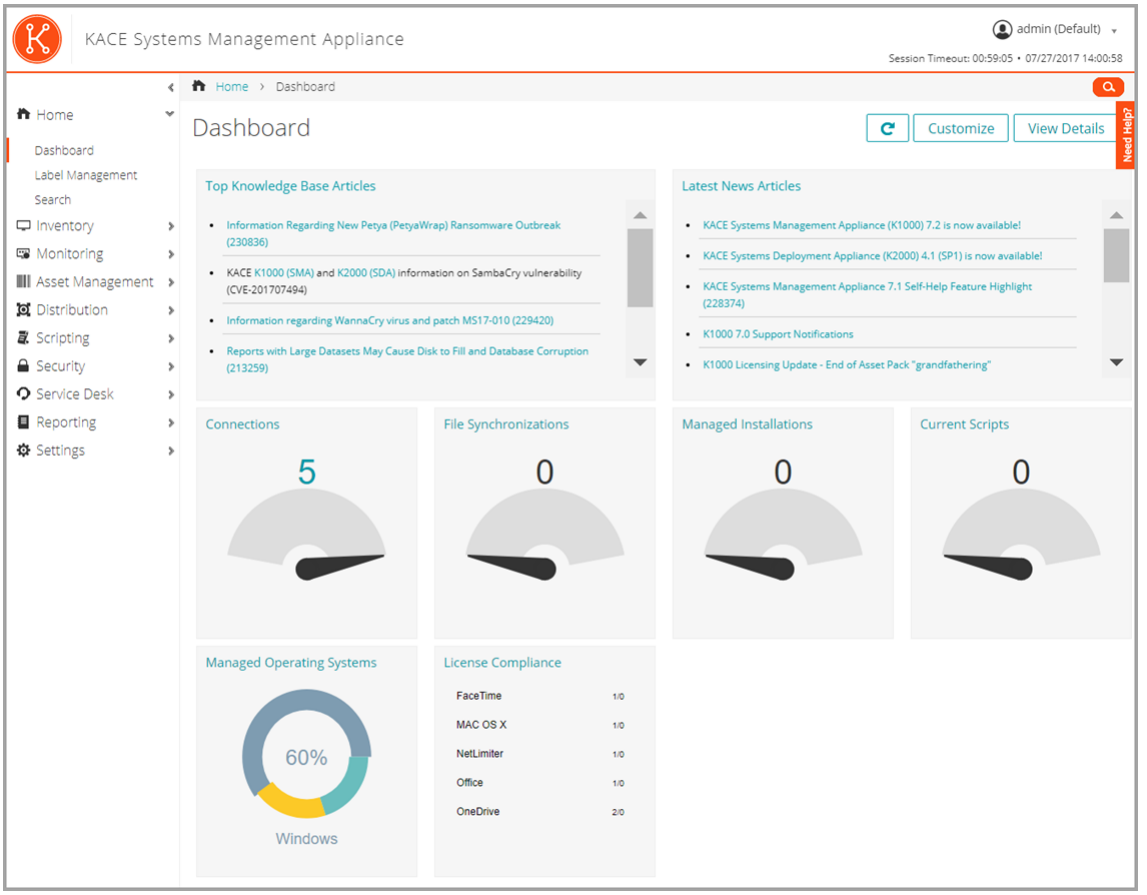
If the *Login Organization* option is enabled in the appliance settings, the *Organization* box appears. You can type the name of an organization in the *Organization* box to log in to that organization directly.
If you have multiple organizations and the *fast switching* option is enabled, you can switch between organizations and the System level using the drop-down list in the top-right corner of the page next to the login information. See Enable fast switching for organizations and linked appliances.

- **System mode with the Organization component enabled**: If the Organization component is enabled on your appliance, go to `http://`**appliance_hostname**`/system`, to log in to System mode. **appliance_hostname** is the hostname of your appliance. In this mode you can manage the components available at the System level. For components available in this mode, see Components available in System mode with the Organization component enabled.

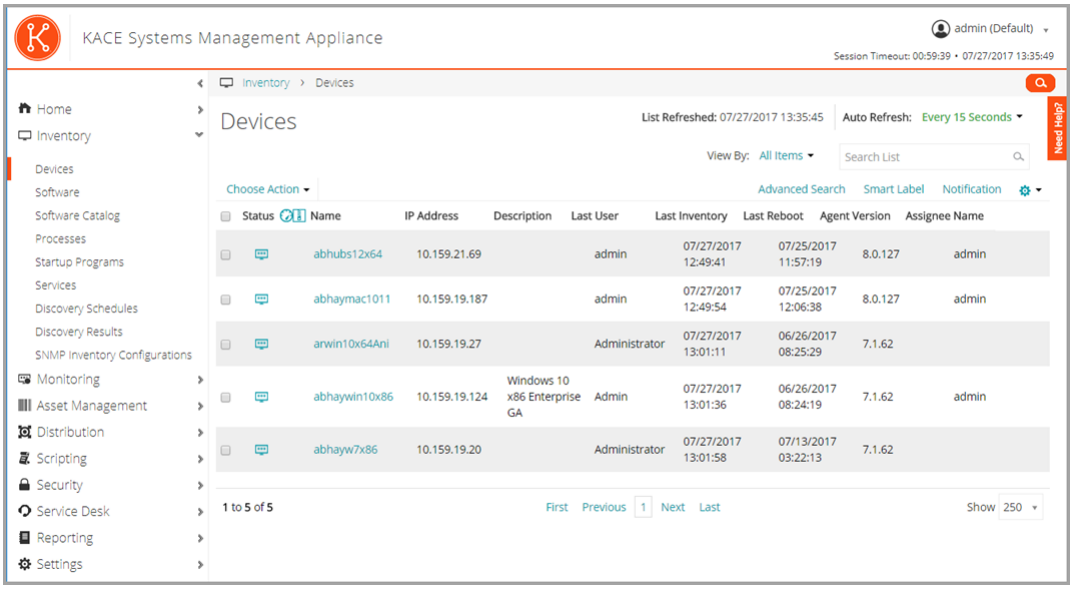
In addition, if the *fast switching* option is enabled, and the passwords for the default admin accounts of the organizations are the same, you can switch between organizations using the drop-down list in the top-right corner of the page. See Enable fast switching for organizations and linked appliances.

Each mode has the following types of pages:

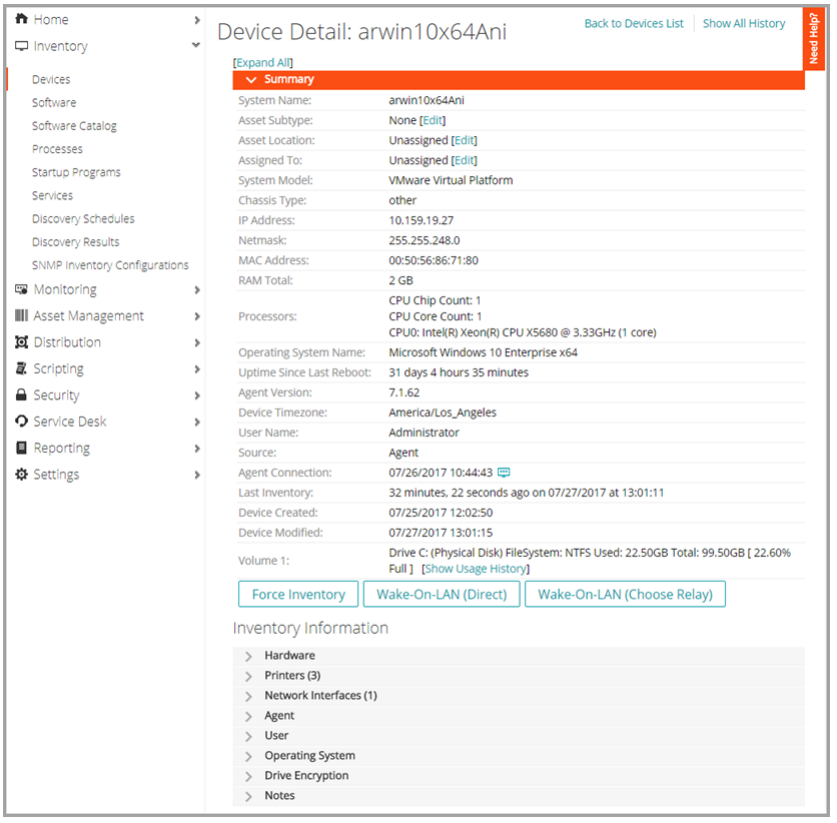
- **Dashboards**. These pages show status information for the appliance. If the Organization component is enabled, Dashboards are available at the organization and appliance level.



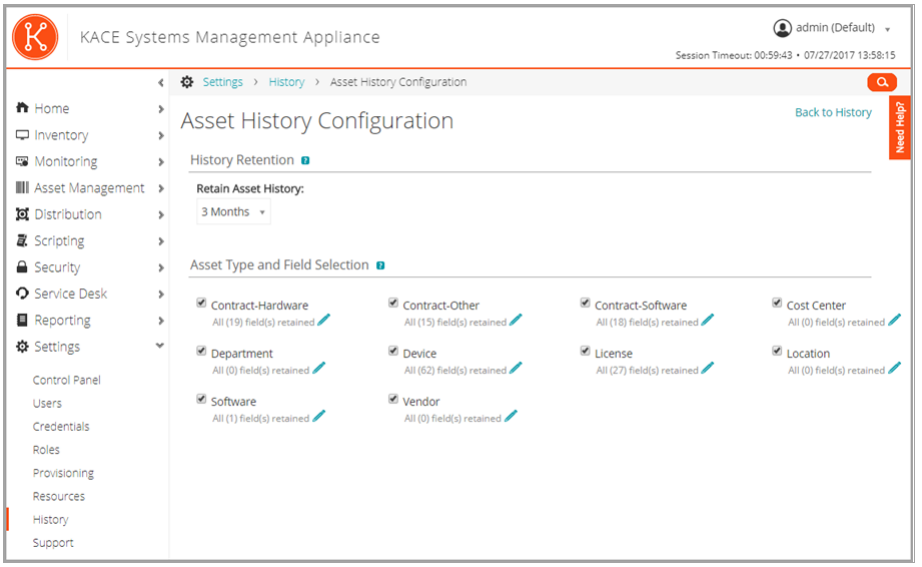

- **List pages**. These pages enable you to view items available on the appliance or, if the Organization component is enabled, in the selected organization.



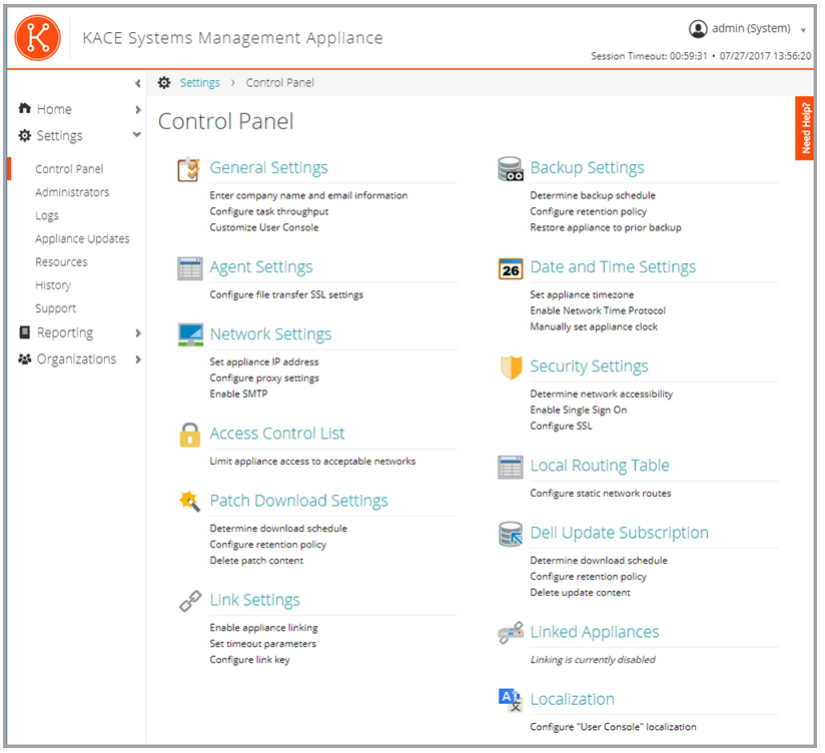

- **Detail pages**. These pages enable you to view and edit details of the selected item.




- **Configuration pages**. These pages enable you to configure settings.




- **Panels**. These pages provide access to related components and settings.




# Components available in Admin mode without the Organization component

When the Organization component is not enabled, Admin mode shows all of the Admin-level components and the System-level (appliance-level) settings.

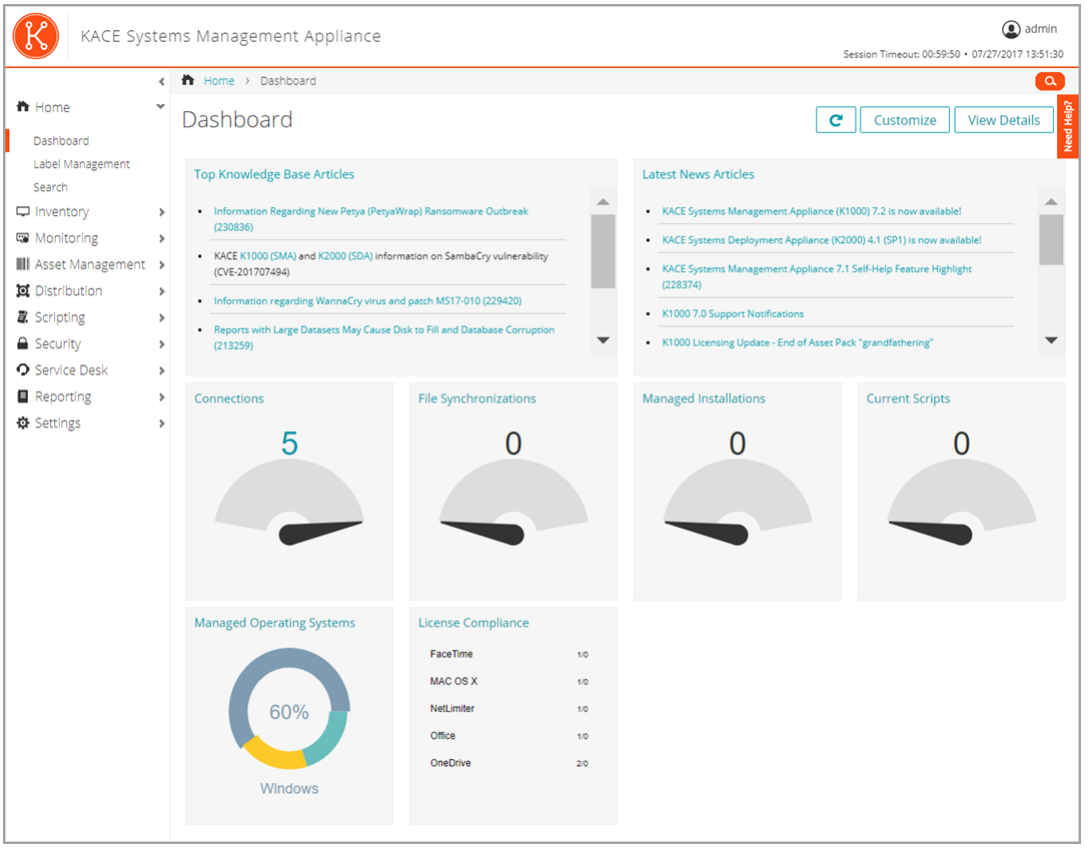



**Table 2. Components available in Admin mode without the Organization component**

| Component | UI page | Used to... |
|---|---|---|
| **Home** | • Dashboard<br>• Label Management<br>• Search | Review appliance statistics, manage labels, view historical information, and search for data. See Using the Home component. |
| **Inventory** | • Devices<br>• Software<br>• Software Catalog<br>• Processes<br>• Startup Programs<br>• Services<br>• Discovery Schedules<br>• Discovery Results<br>• SNMP Inventory Configurations | Manage the devices, software, processes, services, scans, and other items on your network. See:<br>• Managing device inventory<br>• Managing applications on the Software page<br>• Managing Software Catalog inventory<br>• Managing process, startup program, and service inventory<br>• Using Device Discovery<br>• Using SNMP Inventory Configurations to identify specific |

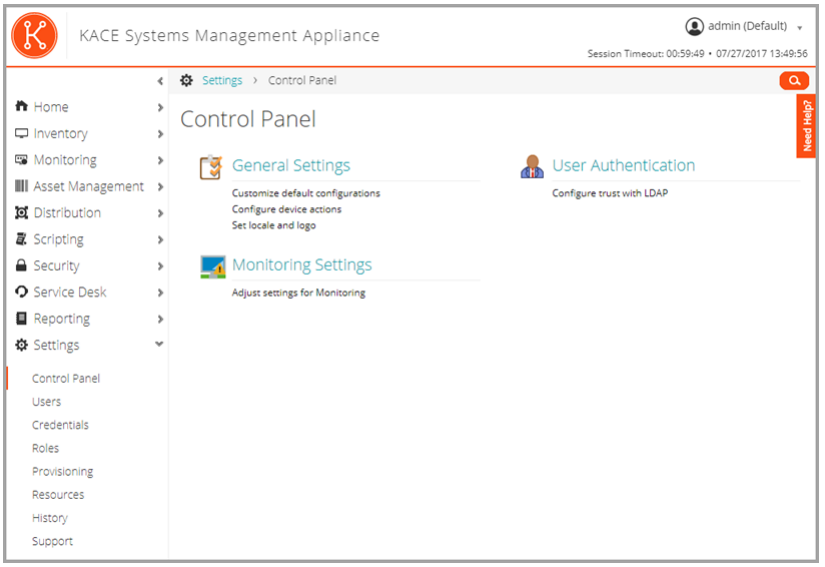
| Component | UI page | Used to... |
|---|---|---|
| | | SNMP objects and non-computer devices to add to inventory |
| **Monitoring** | • Devices<br>• Alerts<br>• Profiles<br>• Maintenance Windows<br>• Log Enablement Packages | Manage basic event monitoring for 5 servers with your standard license, gathering event data from core Windows® event logs, syslogs, and application logs.<br>With the Monitoring Module license, manage event monitoring for up to 200 servers.<br>See Monitoring servers |
| **Assets** | • Assets<br>• Asset Types<br>• Contracts<br>• Licences<br>• License Compliance<br>• Locations<br>• Import Assets | Track physical assets, such as devices, software, printers, and so on, and view the history of assets and their configuration. See:<br>• Managing inventory<br>• Managing License Compliance |
| **Distribution** | • Managed Installations<br>• File Synchronizations<br>• Wake-on-LAN<br>• Replication<br>• Alerts | Distribute and manage software, including updates from Quest, remotely.<br>See Deploying packages to managed devices. |
| **Scripting** | • Scripts<br>• Run Now<br>• Run Now Status<br>• Search Scripting Logs<br>• Configuration Policies<br>• Security Policies<br>• Mac Profiles | Automate tasks performed on managed devices.<br>See Running scripts on managed devices. |
| **Security** | • Patch Management<br>• OVAL Scan<br>• SCAP Scan<br>• Dell Updates | Reduce the risks from malware, spyware, and viruses. OVAL (Open Vulnerability Assessment Language) is a battery of tests that can be run to identify security vulnerabilities on managed devices. |

| Component | UI page | Used to... |
|---|---|---|
| | | See Patching devices and maintaining security. |
| **Service Desk** (also known as *Help Desk* on appliances that have been upgraded from early versions) | • Tickets<br>• User Downloads<br>• Knowledge Base<br>• Announcements<br>• Archive (available only if ticket archival is enabled)<br>• Configuration | Provide a repository of software and documentation for users to access and download. Includes a full-featured service desk for creating and tracking tickets.<br>See Using the Service Desk. |
| **Reporting** | • Reports<br>• Report Schedules<br>• Notifications | Run pre-packaged reports and report-creating tools to monitor your appliance implementation.<br>See Using reports and scheduling notifications. |
| **Settings** | • Control Panel<br>• Users<br>• Credentials<br>• Roles<br>• Logs<br>• Appliance Updates<br>• Provisioning<br>• Resources<br>• History<br>• Support | Administer your appliance and Agent provisioning. See:<br>• Configuring the appliance<br>• Configuring user accounts, LDAP authentication, and SSO<br>• Managing credentials<br>• Maintaining the appliance<br>• Provisioning the KACE Agent<br>• Importing and exporting appliance resources<br>• Managing settings history<br>• Using Troubleshooting Tools |

# Components available in Admin mode with the Organization component enabled

When the Organization component is enabled, the Admin mode shows components and settings for the current organization only. Appliance-level components are available in System mode.

If the Organization component is enabled on your appliance, and you log in to `http://`**appliance_hostname**`/admin`, the *Settings* component shows features available to the selected organization only.




All other components are the same, regardless of whether the Organization component is enabled. See Components available in Admin mode without the Organization component for components, and see the following illustration.

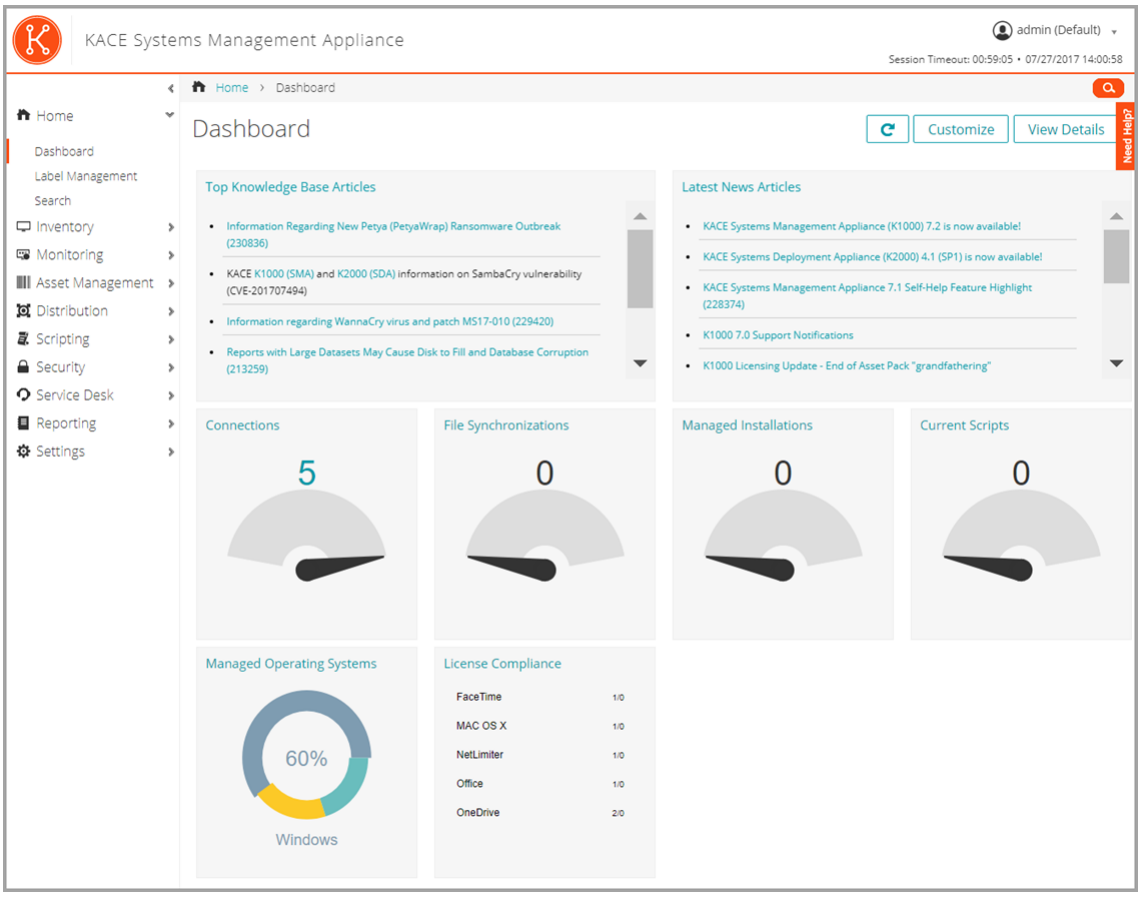


**Table 3. Components available in Admin mode with the Organization component enabled**

| Component | UI page | Used to... |
|---|---|---|
| **Settings** | • Control Panel<br>• Users<br>• Credentials<br>• Roles<br>• Provisioning<br>• Resources<br>• History<br>• Support | Manage general settings for the organization, such as user authentication and Agent provisioning. See:<br>• Configuring the appliance<br>• Configuring user accounts, LDAP authentication, and SSO<br>• Managing credentials<br>• Provisioning the KACE Agent<br>• Importing and exporting appliance resources<br>• Managing settings history<br>• Using Troubleshooting Tools |

# Components available in System mode with the Organization component enabled

When the Organization component is enabled, System mode shows components related to appliance settings. Organization-level components are available in Admin mode.

When you log in to the appliance System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** in the drop-down list in the top-right corner of the Administrator Console, the following components are available.

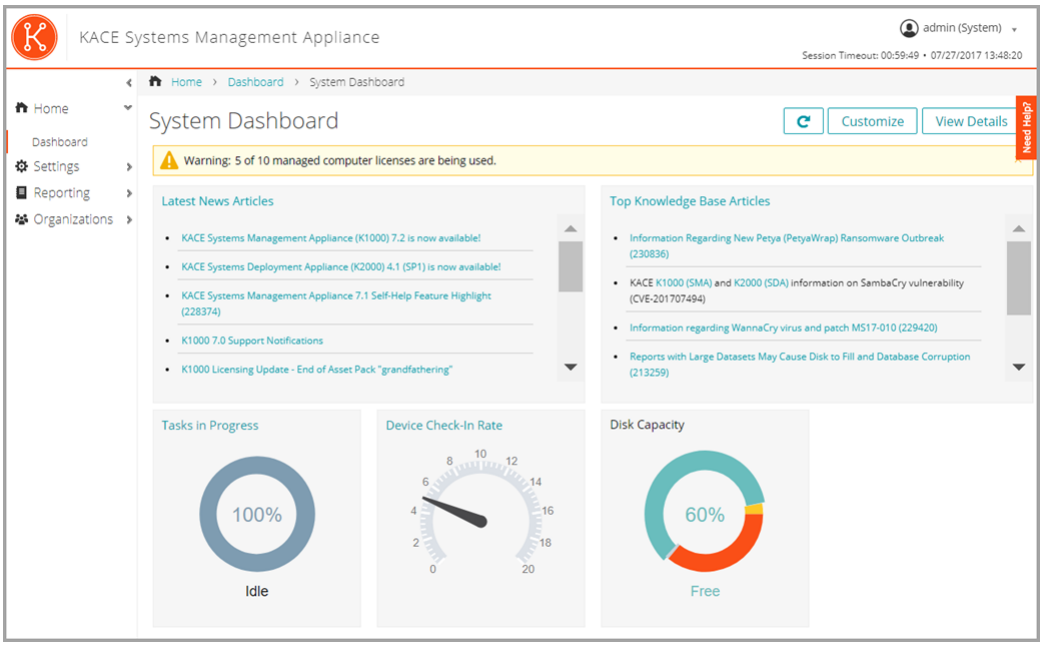


**Table 4. Components available in System mode with the Organization component enabled**

| Component | Sub-tabs | Used to... |
|---|---|---|
| **Home** | • Dashboard | Review summary statistics for the appliance.<br>See Using the Home component. |
| **Settings** | • Control Panel<br>• Administrators<br>• Logs<br>• Appliance Updates<br>• Resources<br>• History<br>• Support | Manage the appliance and access resources such as Quest Support. See:<br>• Configuring the appliance<br>• Maintaining the appliance<br>• Importing and exporting appliance resources<br>• Managing settings history<br>• Using Troubleshooting Tools |
| **Reporting** | • Reports<br>• Report Schedules | Run pre-packaged reports and report-creating tools to monitor your appliance implementation.<br>See Using reports and scheduling notifications. |
| **Organizations** | • Organizations<br>• Roles<br>• Filters<br>• Devices | Add and manage organizations (requires the Organization component).<br>See Creating and managing organizations. |

# Using the Home component

The Home component includes the Dashboard, Label Management, and Search features.

## About Dashboards

Dashboards provide overviews of organization or appliance activity. They also provide alerts and links to news and Knowledge Base articles.

If the Organization component is enabled on the appliance, and you are logged in to the Administrator Console (`http://`**appliance_hostname**`/admin`), the Dashboard shows information for the selected organization. When you are logged in to the System Administration Console (`http://`**appliance_hostname**`/system`), the Dashboard shows information for the appliance, including all organizations.

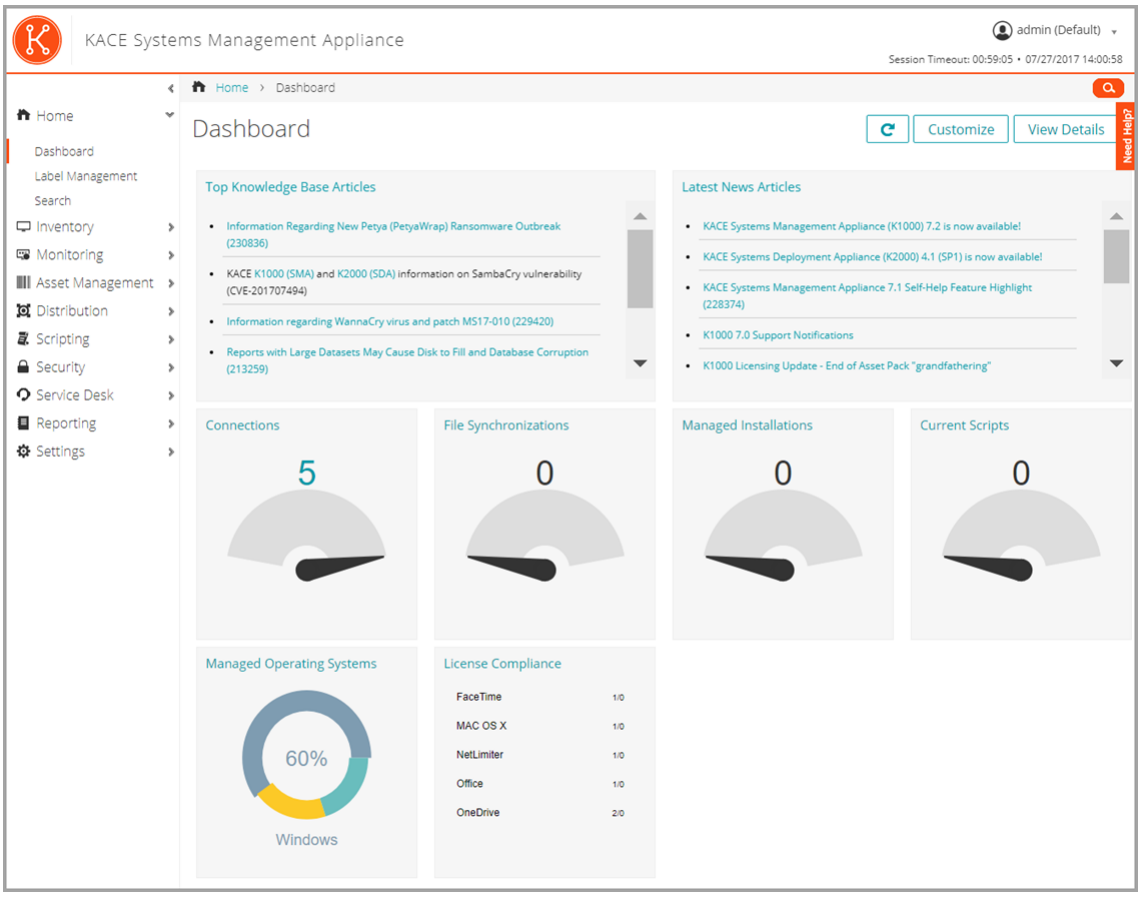
**TIP:** The appliance updates the summary widgets periodically. To update all of the widgets any time, click the **Refresh** button in the upper right of the page: . To update individual widgets, hover over the widget, then click the **Refresh** button above the widget.

# View the Dashboard in Admin mode

View the Admin mode Dashboard to find summary information for the appliance or, if the Organization component is enabled, for the selected organization.

- Log in to the Administrator Console , `http://`**appliance_hostname**`/admin`. Or, if *Show organization menu in admin header* is enabled, select an organization in the drop-down list in the top-right corner of the page next to the login information.

The *Dashboard* page appears.

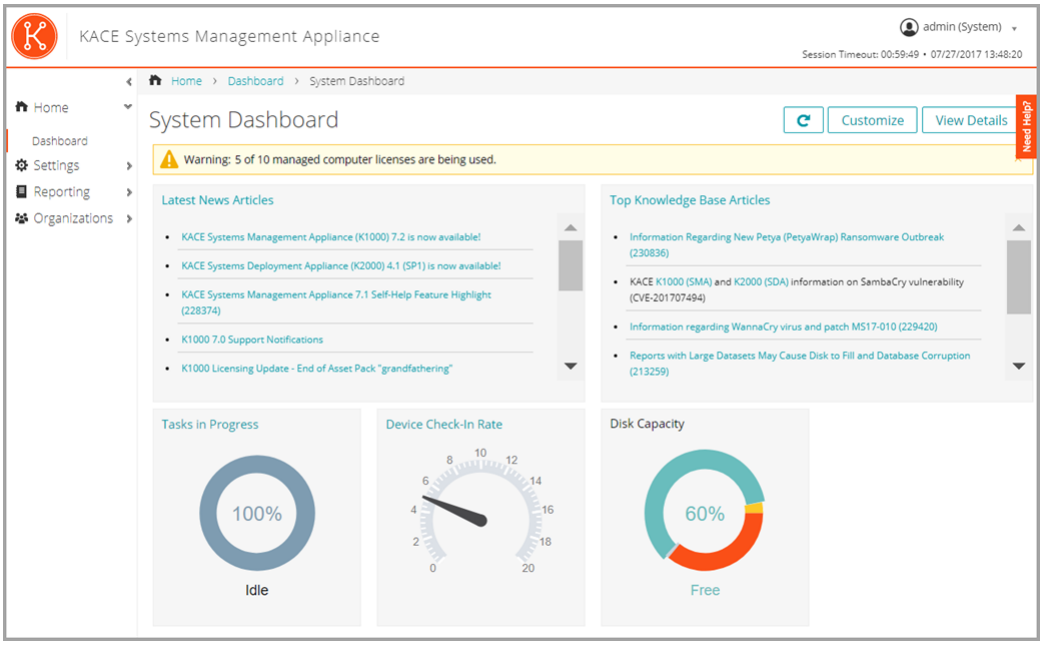



# View the Dashboard in System mode

If the Organization component is enabled on your appliance, view the System Dashboard to find summary information for the appliance.

- Log in to the appliance System Administration Console, `https://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page.

The *System Dashboard* page appears.




# Customize Dashboard pages

You can customize Dashboard pages to show or hide widgets as needed.

1. Do one of the following:

   - **Log in to the appliance Administrator Console, `https://appliance_hostname/admin`. Or, if *Show organization menu in admin header* is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.**
   - **Log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System from the drop-down list in the top-right corner of the page.**

   **The *Dashboard* or *System Dashboard* page appears.**
2. Hover over the widget, then use any of the following buttons:
   - : Refresh the information in the widget.
   - : Display information about the widget.
   - : Hide the widget.
   - : Resize the widget.
   - : Drag the widget to a different position on the page.
3. Some widgets are editable, allowing you to filter the information that they display. To edit an editable widget, click and in the dialog box that appears, provide the required information. In some cases, you can also switch between bar chart and donut views, as applicable.
4. Click the **Customize** button in the top-right corner of the page to view available widgets.


5. To view all installed widgets, click **View By** > **All Items**
6. To view only the Service Desk widgets, click **View By** > **Service Desk**
7. To view only the Device widgets, click **View By** > **Devices**
8. To view only the Asset Management widgets, click **View By** > **Asset Management**
9. To view only the Security widgets, click **View By** > **Security**
10. To show a widget that is currently hidden, click **Install**.

# About Dashboard widgets

Dashboard widgets provide overviews of organization or appliance activity.

This section describes the widgets available on the *Dashboard*. If the Organization component is enabled on your appliance, widgets show the information for the selected organization at the Admin level and for the appliance at the System level.

| Widget | Description |
|---|---|
| **General widgets** | This section provides a high-level overview of your appliance activity. The information appearing in these widgets allows you to focus on specific indicators that can help you understand any potential issues. |
| Latest News Articles and Top Knowledge Base Articles | These widgets provide links to news and information from Quest. News articles are displayed according to date or importance. Knowledge Base articles are displayed according to their priority in the Technical Support system. |
| Connections | This widget shows the number of connections to the appliance web server. A high number indicates a high load on the server, which might reduce appliance response time. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| File Synchronizations | This widget shows the number of File Synchronizations that are in progress on Agent-managed devices. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| Managed Installations | This widget shows the number of Managed Installations that are in progress on Agent-managed devices. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| Current Scripts | This widget shows the number of scripts that are enabled to run on Agent-managed devices. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| License Compliance | If you have created License assets for software, this widget shows the number of Agent-managed devices that have a particular licensed software installed, and the number of licenses available. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |

| Widget | Description |
|---|---|
| | License assets can be created for applications listed on the *Software* page and the *Software Catalog* page, and the license mode for applications must be *Unit License* or *Enterprise* for license information to appear on this widget. Applications with other license modes, such as *Shareware*, *Freeware*, or *Not Specified*, are not displayed on this widget.<br>This widget is for information only, and the appliance does not enforce license compliance. For example, the appliance does not prevent software from being installed on Agent-managed devices if a license is expired or otherwise out of compliance.<br>The following colors indicate threshold levels:<br>• **Red**: Usage is at or above the critical threshold setting.<br>• **Orange**: Usage is at or above the warning threshold setting but below the critical threshold setting.<br>• **Green**: Usage is below the warning threshold setting.<br>To change the threshold levels, see Configure appliance General Settings without the Organization component.<br>For information about managing License assets, see Managing inventory. |
| Provisioning | This widget shows the status of KACE Agent provisioning or installation tasks. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| Provision Platforms | This widget shows the percentage of operating systems installed on Agent-managed devices. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| Tasks in Progress | This widget displays the number of tasks in progress on the appliance. This number includes tasks related to scripting, inventory, metering, replication, patching, bootstrapping, and cache queries. You can view the load average on the appliance, and change the task throughput, as needed. See Configure Agent communication and log settings.<br>If the Organization component is enabled on your appliance, the widget is available on the *System Dashboard* page. |
| Device Check-In Rate | This widget displays the number of devices that have connected to the appliance in the past 60 minutes. If the Organization component is enabled on your appliance, this widget is available at the System level. |
| Software License Configuration | If you set up License assets for software, and specify the license type, such as site, subscription, or unit, that information is displayed in this widget. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| Disk Capacity | This widget displays the amount of disk space that is free or in use on the appliance. If the Organization component is enabled on your appliance, this widget is available at the System level. |
| Software Publishers | This widget displays the publishers defined in the Software Catalog, with the highest number of software titles installed on managed devices. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |

| Widget | Description |
|---|---|
| Software Titles | This widget displays the software titles defined in the Software Catalog, with the highest number of installations on managed devices. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| Expiring Dell Warranties | This widget displays information on any Dell Warranties, and links to the *Reports* list page for Dell Warranty reports.<br>If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| Monitoring Alert Summary | This widget displays the number of unacknowledged alerts, grouped by alert level.<br>The following icons indicate alert level:<br>• : **Critical**<br>• : **Error**<br>• : **Warning**<br>• : **Information**<br>• : **Recovered**<br>If the Organization component is enabled on your appliance, the widget shows the information for the selected organization.<br>**Low-resource alerts.**When the appliance resources are low, Critical alerts appear on the Dashboard, providing the recommended course of action such as contacting Support. These alerts are generated when the appliance is detected to use a high amount of disk, CPU, and memory resources, or when a high number of emails is received.<br>Critical low-resource alerts are displayed when the related condition is detected within the last ten minutes, and it persisted for one hour before being displayed.<br>The settings for these alerts are tracked in the history settings. You can disable that by clearing any of the *Low Resource Alerts* options on the *Settings History Configuration* page. For more information, see Configure System-level settings history subscriptions with the Organization component enabled. |
| Monitored Devices | This widget displays the status of the devices for which monitoring has been enabled. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| Monitoring Alerts | This widget displays the alert messages for the devices being monitored. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| **Service Desk widgets** | This section provides a high-level overview of your Service Desk ticket performance. Use it to quickly review the state of your tickets and look for any indicators that can improve your customer experience. For example, you can review the numbers of overdue tickets and focus on specific issues, as needed.<br>**NOTE:** Service Desk widgets display data for the default queue associated with the logged-in user. If there is no default set for the user, or if *All Queues* is set as the default, the widgets display data from all the queues owned by the user.<br>**NOTE:** If the user does not own any queues, or if their default queue is no longer valid, the widgets do not display any data. |

| Widget | Description |
|---|---|
| Shortcuts | This widget contains links to common Service Desk actions. Use them to quickly initiate specific tasks, such as creating a new KB (Knowledge Base) article, scheduling a report, and so on. |
| Views | This widget contains links to common Service Desk pages and wizards, including any custom views that you created. Use them to quickly navigate to specific pages, such as *My Recent Tickets*, *All Unassigned Tickets*, and *Tickets Due Today*. It also displays link to custom views, as applicable. The list of custom views is sorted alphabetically. If you want the custom views to appear in a specific order, you can prefix their names with numbers, as needed. |
| Reports | This widget contains links to common Service Desk reports. Use them to quickly generate a specific report, such as *Open Tickets last 7 days by Owner*, *Stalled/Open Tickets by Owner*, and others. |
| Tickets Opened Today | This widget contains the number of Service Desk tickets that were opened today. |
| Active Tickets By Owner<br>Active Tickets By Category<br>Active Tickets By Priority<br>Active Tickets<br>Closed Tickets<br>Overdue Tickets<br>Overdue Tickets By Owner<br>Overdue Tickets Today<br>Tickets Due Today<br>Reopened Tickets | These widgets display the numbers of active, closed, overdue, overdue today, due, due today, or reopened Service Desk tickets, grouped into any of the following categories:<br>• Category<br>• Priority<br>• Owner<br>• Queue<br>• Range<br>The resulting data can appear in a *Bar Chart* or a *Donut Chart*.<br>To change the widget title, choose how you want to group the tickets, or select the chart type, click in the widget. In the dialog box that appears, make your edits and click **Save**. |

| Widget | Description |
|---|---|
| Average Ticket Resolution Time | This widget displays the average number of days the ticket resolution takes over that last 30 days, grouped into any of the following categories:<br>• Category<br>• Priority<br>• Owner<br>• Queue<br>• Month<br>The resulting data can appear in a *Bar Chart* or a *Donut Chart*.<br>To change the widget title, choose how you want to group the tickets, or select the chart type, click  in the widget. In the dialog box that appears, make your edits and click **Save**. |
| Tickets Overdue | This widget displays the number of Service Desk tickets that are currently overdue. |
| **Device widgets** | This section provides a high-level overview of your managed devices. Use it to quickly review the state of your devices and look for any indicators that can improve their performance. For example, you can review the percentages of available disk space, and focus on specific issues, as needed. |
| Devices By Memory | This widget shows a bar chart, where each bar represents a number of devices that have an indicated amount of RAM installed on them. |
| Devices By Processor | This widget shows a bar chart, where each bar represents a number of devices that have a specific processor configuration. |
| Devices by Disk Capacity | This widget shows a donut chart, where each section of the chart indicates the percentage of free disk space on the managed devices. Clicking the widget title displays a report with links to the associated devices. Hovering over each section of the chart displays the percentage of managed devices that have the selected percentage of free disk space. For example, if you hover over the red part of the chart, the widget displays the percentage of devices whose free disk space is lower than 25%. |
| Managed Operating Systems | This widget shows the percentage of managed devices that are running each operating system. If the Organization component is enabled on your appliance, this widget shows the percentage of devices in the selected organization. |
| Devices By Manufacturer | This widget shows the top device manufacturers represented in device inventory. If the Organization component is enabled on your appliance, this widget shows the percentage of devices in the selected organization. |
| Devices By Model | This widget shows the top device models represented in the device inventory. If the Organization component is enabled on your appliance, this widget shows the percentage of devices in the selected organization. |
| Devices By Subtype | This widget shows a donut chart, where each section of the chart indicates the percentage of the managed devices by device subtype. |

| Widget | Description |
|---|---|
| VMware Device Counts | This widget shows the counts of each VMware device type, such as vCenters, ESXi hosts, virtual machines, and provisioned virtual machines. Clicking the widget title displays the *Devices* list page. |
| VMware Device Reports | This widget contains links to five popular VMware inventory reports. Clicking the widget title displays the *Reports* list page with the *Virtual Infrastructure* filter applied. |
| VMware ESXi Device By Status | This widget displays a donut chart showing the current status of ESXi devices. There are four possible values: *OK*, *Warning*, *Error* and *Unknown*. Clicking the widget title displays a new VMware inventory report that lists all ESXi devices by current status. |
| VMware ESXi Version Counts | This widget shows the counts of the top five ESXi versions. Clicking the widget title displays a new VMware inventory report that shows all ESXi devices by version. |
| **Asset Management widgets** | This section provides a high-level overview of your asset usage. Use it to quickly review the state of your assets and look for any indicators that can improve your asset configuration. For example, you can focus on how your software licenses are used and identify which software titles need to have their license renewed. |
| Assets By Type | This widget shows a donut chart, where each section of the chart indicates the percentage of your assets by their asset type, such as device, software, location, license, and others. Hovering over each section of the chart displays the percentage of the assets of the selected type. |
| Assets By Status | This widget shows a donut chart, where each section of the chart indicates the percentage of your assets by their status, such as Active, Disposed, Missing, or other. Hovering over each section of the chart displays the percentage of the assets in the selected status. |
| Cost ($) of Unused Licenses By Product | This widget shows a bar chart, where each bar represents the cost of unused licenses for each product. You can use this information to reassign or cancel unused licenses, and to redirect your resource where they are most needed. |
| License Compliance | If you have created License assets for software, this widget shows the number of Agent-managed devices that have a particular licensed software installed, and the number of licenses available. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization.<br>License assets can be created for applications listed on the *Software* page and the *Software Catalog* page, and the license mode for applications must be *Unit License* or *Enterprise* for license information to appear on this widget. Applications with other license modes, such as *Shareware*, *Freeware*, or *Not Specified*, are not displayed on this widget.<br>This widget is for information only, and the appliance does not enforce license compliance. For example, the appliance does not prevent software from being installed on Agent-managed devices if a license is expired or otherwise out of compliance.<br>The following colors indicate threshold levels:<br>• **Red**: Usage is at or above the critical threshold setting.<br>• **Orange**: Usage is at or above the warning threshold setting but below the critical threshold setting.<br>• **Green**: Usage is below the warning threshold setting. |

| Widget | Description |
|---|---|
| | To change the threshold levels, see Configure appliance General Settings without the Organization component.<br>For information about managing License assets, see Managing inventory. |
| Software Titles | This widget displays the software titles defined in the Software Catalog, with the highest number of installations on managed devices. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| Software Publishers | This widget displays the publishers defined in the Software Catalog, with the highest number of software titles installed on managed devices. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| Assets by Location | This widget shows a donut chart, where each section of the chart indicates the percentage of your assets by their location. Hovering over each section of the chart displays the percentage of the assets in the selected location. |
| Software Installed But Not Used in 60 Days | This widget shows a bar chart, where each bar represents a software title and the corresponding number of instances of that product that have not been in use in the last 60 days. You can use this information to further investigate whether these titles are needed, to reassign or uninstall unused software, and to redirect your resource where they are most needed. |
| Expiring Software License Maintenance | This widget shows a vertical bar chart, where each bar represents the number of software licenses that are about expire in the given time period. |
| Expired Software License Maintenance | This widget shows a donut chart representing the ration of expired and current licenses. Hovering over each section of the chart displays the percentage of the software licenses that are either expired or current, as selected. |
| Expiring Contracts | This widget shows a vertical bar chart, where each bar represents the number of contracts that are about expire in the given time period. |
| Expired Contracts | This widget shows a donut chart representing the ration of expired and current contracts. Hovering over each section of the chart displays the percentage of the contracts that are either expired or current, as selected. |
| Software License Configuration | If you set up License assets for software, and specify the license type, such as site, subscription, or unit, that information is displayed in this widget. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| **Security widgets** | This section provides an overview of patch compliance in your environment, and the information about patching processes. Use it to quickly review the level of system patches installed on managed devices and look for any indicators that can improve your system security. |
| Critical Patch Compliance | This widget shows the deployment progress of patches that are marked as critical. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |

| Widget | Description |
|---|---|
| Dell Updates | This widget displays the number of Dell applications, BIOSs, and firmware updates that can be applied to managed devices. The updates are categorized as *Moderate*, *Important*, or *Critical*, depending on the urgency of the update. After a Dell Update schedule is created, data appears in the widget. See Configure Dell Update schedules.<br>If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| Compliance By Machine | This widget displays a donut chart, where each section of the chart indicates the percentage of patch compliance for each managed device. Hovering over each section of the chart displays the percentage of the patch compliance for the selected device.<br>You can change the information that appears in the widget by choosing the patch publisher, operating system, label, classification, severity, KB number, and availability date. You can also switch between bar chart and donut views, as applicable. You can also install multiple instances of this widget on the Security Dashboard using a different set of parameters in each instance. |
| Compliance By Patch | This widget provides a donut chart, where each section of the chart indicates the percentage of compliance for each applicable patch. Hovering over each section of the chart displays the percentage of the compliance for the selected patch.<br>You can change the information that appears in the widget by choosing the patch publisher, operating system, label, classification, severity, KB number, and availability date. You can also switch between bar chart and donut views, as applicable. You can also install multiple instances of this widget on the Security Dashboard using a different set of parameters in each instance. |
| Patch Installation Progress | This widget shows the progress of patching tasks that are running on managed devices. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| Patches Deployed | This widget displays the number of patches that are currently deployed.<br>You can change the information that appears in the widget by choosing the patch publisher, operating system, label, classification, severity, KB number, and availability date. You can also switch between bar chart and donut views, as applicable. You can also install multiple instances of this widget on the Security Dashboard using a different set of parameters in each instance. |
| Patches Failed | This widget displays the number of patches that failed to deploy.<br>You can change the information that appears in the widget by choosing the patch publisher, operating system, label, classification, severity, KB number, and availability date. You can also switch between bar chart and donut views, as applicable. You can also install multiple instances of this widget on the Security Dashboard using a different set of parameters in each instance. |
| Patches Released | This widget displays the number of patches that are released and available for deployment.<br>You can change the information that appears in the widget by choosing the patch publisher, operating system, label, classification, severity, KB number, and availability date. You can also switch between bar chart and donut views, as applicable. You can also install multiple instances of this widget on the Security Dashboard using a different set of parameters in each instance. |

| Widget | Description |
|---|---|
| Patching Tasks Completed | This widget shows the progress of patching tasks, such as detect, deploy, and rollback tasks, on managed devices. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| Reports | This widget contains links to common patching reports. Use them to quickly generate a specific report, such as *Critical and Recent Bulletin List* , *Devices not compliant by patch*, and others. |
| SCAP Summary | This widget provides information about SCAP scans that have been performed on devices. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| Views | This widget contains links to common patching pages and wizards, including any custom views that you created. Use them to quickly navigate to specific pages, such as the *Patch Catalog*. If you have any custom views, they are sorted alphabetically. If you want the custom views to appear in a specific order, you can prefix their names with numbers, as needed. |
| Windows 10 Releases | This widget shows a bar chart, with each item in the chart representing a particular Windows 10 release and the number of managed devices running that version. This can give you an idea of how many devices are candidates for published Windows 10 updates. |

# View Dashboard details

Dashboard details show statistics for the appliance or the selected organization.

If the Organization component is enabled on your appliance, and you are logged in to the Administrator Console (`http://`**appliance_hostname**`/admin`), the statistics are shown for the selected organization. When you are logged in to the System Administration Console (`http://`**appliance_hostname**`/system`), the statistics are shown for the appliance, including all organizations.

On new appliances that have no managed devices, the *Dashboard Detail* page shows zero or no records.

1. Do one of the following:
   - **Log in to the appliance Administrator Console, `https://appliance_hostname/admin`. Or, if** *Show organization menu in admin header* **is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.**
   - **Log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System from the drop-down list in the top-right corner of the page.**
2. Click **Home** > **Dashboard**.

   **The** *Dashboard* **or** *System Dashboard* **page appears.**
3. In the top-right corner of the page, click **View Details**.

   **The** *Dashboard Detail* **page appears. It shows the following information:**

| Summary Section | Description |
|---|---|
| **Devices** | Information about managed devices, including a breakdown of the operating systems in use.<br>In addition, if the number of managed devices exceeds the number allowed by your license key, you are notified of it here. |

| Summary Section | Description |
|---|---|
| **Software** | A summary of the applications that are available in inventory on the appliance. This includes applications listed on the *Software* page and the *Software Catalog* page. |
| **Distributions** | The applications that have been distributed to managed devices, separated by distribution method. This section also indicates the number of packages that are enabled and disabled. |
| **Monitoring Alerts Summary** | The number of unacknowledged alerts for monitored devices, grouped by alert level.<br>The following icons indicate alert level:<br>• : **Critical**<br>• : **Error**<br>• : **Warning**<br>• : **Information**<br>• : **Recovered** |
| **Alert Summary** | The alerts that have been distributed to managed devices, separated by the alert type. This summary also indicates the number of alerts that are active and expired.<br>The *IT Advisory* refers to the number of Knowledge Base articles in User Console. |
| **Patches** | The patches received from software vendors such as Microsoft® and Apple. The summary includes the date and time of the last patch (successful and attempted), total patches, and total packages downloaded. |
| **OVAL** | Information about the Open Vulnerability Assessment Language (OVAL), a battery of tests that can be run to identify security vulnerabilities on managed devices. OVAL information includes:<br>• The definitions received<br>• The date and time of the last OVAL download (attempted and successful)<br>• The number of OVAL tests in the appliance<br>• The number of devices scanned<br>• The number of vulnerabilities detected on managed devices |
| **Discovery (Network Scan)** | The results of Discovery scans that have run on the network, including the number of IP addresses scanned, the number of services discovered, and the number of scans that have been performed. |

**NOTE:** When this page is refreshed, the record count is updated. New appliance installations contain zero records.

For more information about OVAL, see Maintaining device and appliance security.

# View task schedules

The *Task Schedule* page displays a list of tasks scheduled for the current hour, day, or the week, as selected, using their start times and an estimated duration based on machine counts and task types. Any tasks that have detail pages associated with them, such as scripts, can be accessed by clicking the task name in the table.

The Administrator Console displays the tasks associated with the selected organization and any System tasks, like the *Backup Window*. When you view this page in the System Administration Console, it displays all tasks from all organizations (separated by the organization), along with any available System tasks.

Any task chains that appear in the page are represented with connecting lines. For more information about task chains, see Using Task Chains.

Tasks associated with multiple agents and devices appear in gradient color line, where the length of the line does not reflect the task duration or any historical data. Solid color lines appears indicates tasks with a fixed duration. A blue vertical bar in the graph represents the current date and time.

1. Do one of the following:
   - **Log in to the appliance Administrator Console, `https://appliance_hostname/admin`. Or, if *Show organization menu in admin header* is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.**
   - **Log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System from the drop-down list in the top-right corner of the page.**

   **The *Dashboard* or *System Dashboard* page appears.**
2. On the left navigation bar, in the **Home** section, click **Task Schedule**.

   **The *Task Schedule* page appears.**
3. To switch between different levels of detail, click **Hour**, **Day**, or **Week**, as required.

# View the appliance version, model, and license information

The **About appliance** link in the *Help* panel displays the appliance version, model, and license information.

1. Log in to the User Console, Administrator Console, or System Console.
2. In the upper right of the Administrator Console, click **Need Help**.

   **A help pane appears on the right containing high-level information about the related Administrator Console page. The bottom of the help pane includes the following buttons:**

   - **Appliance Administrator Guide**(): Provides access to the KACE System Management Appliance help contents.
   - **Knowledge Base** (): Allows you to browse the Knowledge Base articles associated with the related Administrator Console page.

     **NOTE:** This option is only available in the Administrator Console and the System Console. It does not appear in the User Console.
   - **Video Knowledge Base** (): Allows you to browse one or more training videos associated with the related Administrator Console page. You can play a video on the help pane, in a smaller window outside of the selected page, or on the target Knowledge Base page that hosts the video.

     **NOTE:** This option is only available if related videos exist on the Support Portal. Also, it only appears in the Administrator Console and the System Console. It does not appear in the User Console.
   - **Live Chat** (): Starts a chat with a KACE System Management Appliance product specialist.

     **NOTE:** This option is only available in the Administrator Console and the System Console. It does not appear in the User Console.
   - **Open Ticket** (): Links to the Support page (https://support.quest.com/create-service-request) that allows you to create a service request.

> **NOTE:** This option is only available in the Administrator Console and the System Console. It does not appear in the User Console.

- **Support** (): Links to the **Settings > Support** page. This page provides resources for troubleshooting system management issues and contacting Quest Support.

  > **NOTE:** This option is only available in the Administrator Console and the System Console. It does not appear in the User Console.

- **KACE GO Mobile App** (): Displays a dialog containing links for downloading the KACE GO Mobile App. The app is available for iOS and Android platforms.

  > **NOTE:** This option is available if the appliance is configured to interact with the K1 GO Mobile App. It only appears in the Administrator Console and the System Console. It does not appear in the User Console For more information on enabling mobile access, see Configuring Mobile Device Access.

- **About** (): Displays information about your KACE System Management Appliance installation.

  > **NOTE:** This option is only available in the Administrator Console and the System Console. It does not appear in the User Console.

3. Click the **About** link located at the bottom-right corner of the panel.

   **The appliance license information is displayed.**

   - The appliance version, model, and serial numbers.
   - The license expiration date, in `month/day/year` format.
   - The number of Managed Computers, Monitored Servers, and Assets that your license entitles you to manage.

     **Managed Computers** are devices in appliance inventory that 1) have Windows, Mac, Linux, or UNIX operating systems, 2) are categorized as PCs or servers, and 3) were not added to inventory manually, through the WSAPI, or through mobile device management.
     **Monitored Servers** are servers that 1) meet the requirements for Managed Computers and 2) have Monitoring enabled.
     **Assets** that count toward your license limit include devices that 1) have been added to the appliance inventory but do not meet the definition of Managed Computers or Monitored Servers and 2) were not added to inventory manually, through the WSAPI, or through mobile management. Examples of Assets include printers, projectors, network gear, and storage devices. The assets you create and manage using the Asset Management component do not count toward the license limit.

     > **NOTE:** Your product license agreement entitles you to manage a specified number of devices. Be aware that devices count toward these limits even if devices are MIA (missing in action) or no longer in use. However, devices that are added to inventory manually, or through the API, do not count toward license limits. For more information, see https://quest.com/docs/Product_Guide.pdf.
     >
     > **NOTE:** To increase your license capacity, go to the Quest website: https://quest.com/buy.

   - License terms and conditions.
   - Third-party code attributions.

**Optional**: View appliance license information with enabled components. See View product licensing information.

# View product licensing information

The appliance license information appears in the *Appliance Updates* section of the Administrator Console.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Appliance Updates**.
3. In the *License Information* section, click the **Help** button: .

   **The following information appears:**

   - **Managed Computers**: The number of Managed Computers your license entitles you to manage. **Managed Computers** are devices in the inventory that 1) have Windows, Mac, Linux, or UNIX operating systems, 2) are categorized as PCs or servers, and 3) were not added to inventory manually, through the WSAPI, or through mobile device management
   - **Monitored Servers**: The number of Monitored Servers your license entitles you to manage. **Monitored Servers** are servers that 1) meet the requirements for Managed Computers and 2) have Monitoring enabled.
   - **Assets**: **Assets** that count toward your license limit include devices that 1) have been added to the inventory but do not meet the definition of Managed Computers or Monitored Servers and 2) were not added to inventory manually, through the WSAPI, or through mobile management. Examples of Assets include printers, projectors, network gear, and storage devices. The assets you create and manage using the Asset Management component do not count toward the license limit.

     **NOTE:** Your product license agreement entitles you to manage a specified number of devices. Be aware that devices count toward these limits even if devices are MIA (missing in action) or no longer in use. However, devices that are added to inventory manually, or through the API, do not count toward license limits. For more information, see http://quest.com/docs/Product_Guide.pdf.

     **NOTE:** To increase your license capacity, go to the Quest website: https://quest.com/buy.
   - **Expires**: The license expiration date, in `month/day/year` format.

     **NOTE:** When the appliance maintenance expires, some features such as patching support become unavailable. This causes an error alert to appear on the Home Dashboard. To renew your license, visit https://support.quest.com/contact-us/renewals. For more information about the Dashboard, see Using the Home component.
   - **Components**: The components enabled under your license.

**Optional**: View the product serial number, model number, license terms and conditions, and third-party code attributions. See View the appliance version, model, and license information.

# About appliance software updates

The appliance checks with the servers at Quest daily for software updates. These updates are referred to as advertised updates.

If updates are available, an alert appears on the *Home* page of the Administrator Console the next time you log in with Administrator account privileges.

**Related topics**

Upload an update file to the appliance manually.

## About labels

Labels are containers that enable you to organize and categorize items, such as devices, so that you can manage them as a group.

For example, you can use labels to identify devices that have the same operating system or that are in the same geographic location. You can then initiate actions, such as distributing software or deploying patches, on all of the devices with that label. Labels can either be manually assigned to specific items or automatically assigned to items when they are associated with criteria, such as SQL or LDAP queries.

You can add labels from the *Labels* section as well as from other sections of the Administrator Console where labels are used, such as the *Devices* page.

The following labels are available:

- **Labels**: Labels that are applied manually and used to organize users, devices, software, Managed Installations, and more. See Managing manual labels.
- **Smart Labels**: Labels that are applied and removed automatically based on criteria you specify. For example, to track laptops in a specific office, you could use a label called “San Francisco Office,” and add a Smart Label based on the IP address range or subnet for devices located in the San Francisco office. Whenever a device that falls within the IP address range is inventoried, the Smart Label “San Francisco” is automatically applied. When the device leaves the IP address range, and is inventoried again, the label is automatically removed. See Managing Smart Labels.
- **LDAP Labels**: Labels that are applied to and removed from users and devices automatically based on LDAP or Active Directory® queries. See Managing LDAP Labels.

**Related topics**

Managing Smart Labels

Managing LDAP Labels

# Searching for information and filtering lists

You can search the appliance databases, and filter list pages, to find information on the appliance.

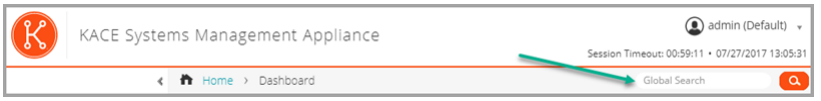
If the Organization component is enabled on your appliance, you can search the database of each organization separately. You cannot search the databases of all organizations at once, and you cannot search at the System level.

## Search at the Admin level

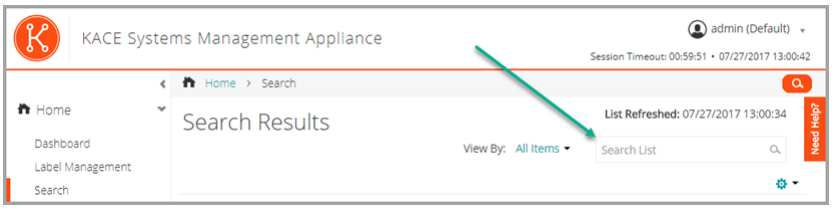
You can search the Admin-level databases to find information on the appliance.

**If the Organization component is enabled on your appliance, you can search the database of each organization separately. You cannot search the databases of all organizations at once, and you cannot search at the System level.**

1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
2. Do one of the following:
   - **Click the *Search* button in the top-right corner of the page to display the *Search* field. Then type at least four characters in the *Global Search* field and press Enter or Return. The following illustration shows this *Search* field:**




- **Click Home > Search. Then type at least four characters in the *Search* field that appears above the list on the right, and press Enter or Return. The following illustration shows this *Search* field:**



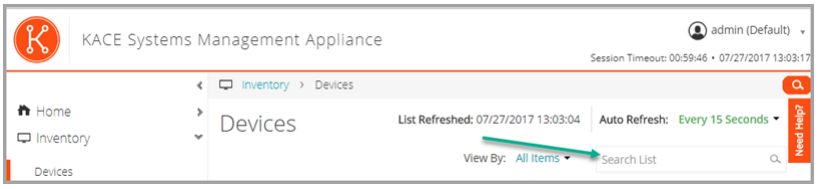

**TIP:** Use the percent sign (%) as a wildcard. For example, you can use the percent sign in a search string to find all items that match the criteria before and after the percent sign.

# Search at the page level

Page-level Search enables you to search for information on the current page.

1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
2. Go to a list page. For example, on the left navigation bar, click **Inventory**. The *Devices* page appears.
3. On the list page, *Devices* in this example, enter the search text into the **Search** field in the top-right corner of the page. Press **Enter** or **Return** to begin the page level search.

   **The following illustration shows the *Page-level Search* field:**




**TIP:** Use the percent sign (%) as a wildcard. For example, you can use the percent sign in a search string to find all items that match the criteria before and after the percent sign.

# Searching at the page level with advanced options

Advanced page-level Search enables you to search for information on the current page using various combinations of criteria. Advanced page-level Search is available on most list pages, such as the *Devices* page and the *Software* page.

## *Example: Search for managed devices using Advanced Search criteria*

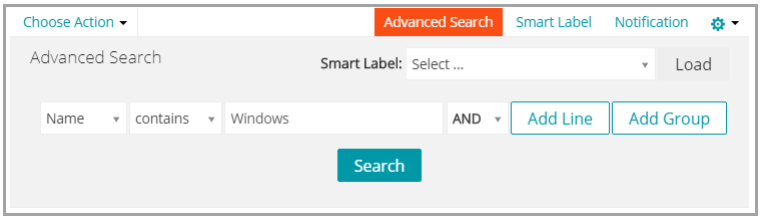
This example shows how to use Advanced page-level Search to find Windows devices that are running low on disk space.

When a scoped user performs an advanced search on devices, and their user role is associated with a Smart Label, the results only include the devices that are associated with the Smart Label. To see additional devices,

you can change the scope of Smart Label, as needed. For more information on how to configure a device scope for a user role, see Add or edit User Roles. For details about Smart Labels, see Managing Smart Labels.

1. Go to the *Devices* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Dashboard**.
2. Click the **Advanced Search** tab above the *Devices* list on the right.

    **The** *Advanced Search* **panel appears.**




3. Specify the criteria required to find Windows devices:

    **`Operating System: Name | contains | Windows`**

4. With **AND** selected in the operator drop-down list, click **Add Line** to add a new line, then specify the criteria required to find devices that are low on disk space:

    **`Drive Information: Disk % Capacity | > | 95`**

5. Click **Search**.

The list is refreshed to show devices that match the specified criteria.

## *Add Smart Labels and Notifications using Advanced Search criteria*

You can add Smart Labels and notifications using criteria in the *Advanced Search* panel.

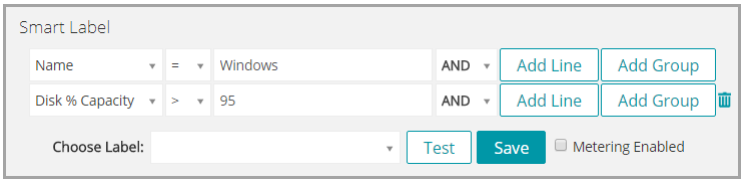
When a scoped user performs an advanced search on devices, and their user role is associated with a Smart Label, the results only include the devices that are associated with the Smart Label. To see additional devices, you can change the scope of Smart Label, as needed. For more information on how to configure a device scope for a user role, see Add or edit User Roles. For details about Smart Labels, see Managing Smart Labels.

1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
2. Go to a list page. For example, on the left navigation bar, click **Inventory** to display the *Devices* page.
3. Click the *Advanced Search* tab above the list on the right and enter the search criteria.

    **See Example: Search for managed devices using Advanced Search criteria.**

4. Click the **Smart Label** tab above the list on the right.

    **The** *Smart Label* **panel appears, and the selected search criteria remain available.**



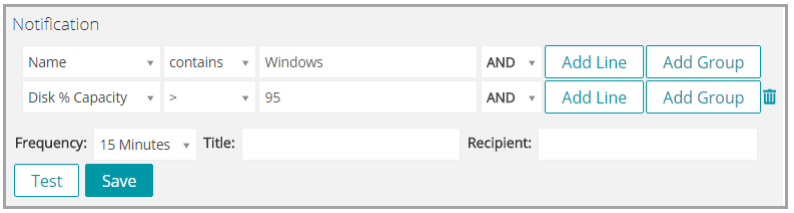

5. In the *Choose label* drop-down list, do one of the following:
   - **Select an existing label to associate with the Smart Label. Type in the *Choose label* field to search for existing labels.**

     **NOTE:** If you select a label group instead of a label, you will not be able to apply the Smart Label to a patching schedule. Patching schedules can only use Smart Labels based on a single item.
   - **Enter a new name for the Smart Label in the *Choose label* field, then press Enter or Return.**

   **NOTE:** Press **Enter** or **Return** after you enter a new Smart Label name to move the text from the search field to the label field.
6. Click **Create**.

   **Smart Labels are applied as follows:**
   - Smart Labels are automatically applied to or removed from devices when devices check in to the appliance, based on whether the devices meet the specified criteria.
   - If a specific application Smart Label is edited using **Home > Labels > Smart Labels**, it is applied to or removed from all applications immediately.
   - Smart Labels are automatically applied to or removed from applications when the items are updated on the *Inventory > Software* page, based on whether the items meet the specified criteria.
7. Click the **Notification** tab above the list on the right.

   **The *Notification* panel appears, and the selected search criteria remain available.**




8. Provide the following information:

| Field | Description |
|---|---|
| **Title** | The information that you want to appear in the *Subject* line of the email. |
| **Recipient** | The email address or addresses of intended recipients. Email addresses must be fully qualified email addresses. To send email to multiple addresses, use commas to separate each address, or use email distribution lists. |
| **Frequency** | The interval at which the appliance runs the query to compare the selected criteria with items in inventory. If criteria are met, the notification is sent. |

9. **Optional**: To verify the criteria, click **Test Notification**.

   **The list is refreshed to show items that match the specified criteria. No email notifications are sent during the test.**
10. Click **Create Notification**.

The notification is added and it appears on the *Email Alerts* page.

For information about scheduling the frequency of the notification, see Edit notification schedules.

**Related topics**

Example: Search for managed devices using Advanced Search criteria

### *Load Smart Labels from the Advanced Search tab*

You can load Smart Labels from list pages on which the *Advanced Search* tab is available.

When a scoped user performs an advanced search on devices, and their user role is associated with a Smart Label, the results only include the devices that are associated with the Smart Label. To see additional devices, you can change the scope of Smart Label, as needed. For more information on how to configure a device scope for a user role, see Add or edit User Roles. For details about Smart Labels, see Managing Smart Labels.

1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
2. Go to a list page. For example, click **Inventory** to display the *Devices* list.
3. Click the **Advanced Search** tab above the list on the right to display the *Advanced Search* panel.
4. At the top of the *Advanced Search* panel, in the *Smart Label* drop-down list, select the Smart Label you want to load.

   **The drop-down list shows Smart Labels that match the list page you are viewing. For example, on the *Devices* page, the drop-down list shows Device Smart Labels. In addition, labels are displayed only if the underlying SQL has not been edited outside of the Smart Label wizard. This is because the wizard cannot be used to display custom SQL.**

5. Click **Load**.

The criteria of the selected Smart Label appears in the *Advanced Search* panel.

# Create Custom Views using Advanced Search criteria

You can create Custom Views using Advanced Search criteria. Custom Views display list items using predefined Advanced Search criteria. Custom Views are available on list pages such as the *Software Catalog* page, the *Assets* page, and the Service Desk *Tickets* page.

Custom Views are user-specific. Users cannot access the Custom Views that are created by other users.

1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
2. Go to a page that has the Custom View option, such as the *Software Catalog* page or the *Assets* page.
3. Click the **Advanced Search** tab on the top-right corner of the page and enter the search criteria.
4. Click the **Custom View** tab on the top-right corner of the page to display the *Custom View* panel.
5. Select Custom View criteria. For example, to create a view on the *Software Catalog* page that displays all Windows devices that have metered applications in the category of Infrastructure Applications, do the following:
   a. Specify the criteria required to find applications categorized as Infrastructure Applications:

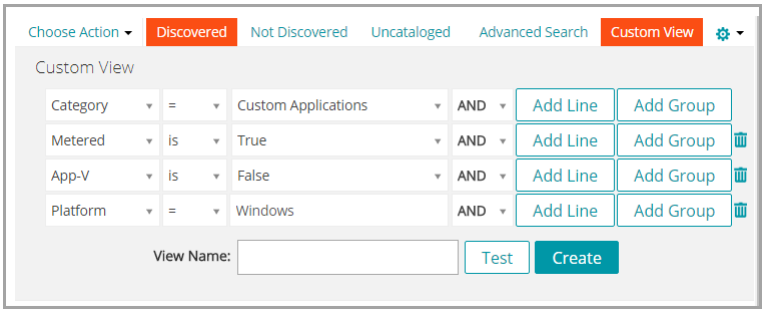
      ```
      Category | = | Infrastructure Applications
      ```

   b. With **AND** selected in the operator drop-down list, click **Add Line** to add a new line.
   c. Specify the criteria required to find applications that are metered:

      ```
      Metered | is | True
      ```

   d. With **AND** selected in the operator drop-down list, click **Add Line** to add a new line.
   e. Specify the criteria required to find Windows devices:

```
Platform | = | Windows
```




6. **Optional**: Click **Test** to refresh the list to show items that match the specified criteria.
7. In the *View Name* field, type a name for the Custom View, then click **Create**.

The Custom View appears in the *View By* drop-down list.

**Related topics**

Example: Search for managed devices using Advanced Search criteria

# Access product documentation

The Administrator Console provides access to help contents and documentation search. It also allows you to browse related Knowledge Base articles, and to chat with product specialists, when needed.

1. Log in to the User Console, Administrator Console, or System Console.
2. In the upper right of the Administrator Console, click **Need Help**.

   **A help pane appears on the right containing high-level information about the related Administrator Console page. The bottom of the help pane includes the following buttons:**

   - **Appliance Administrator Guide**(): Provides access to the KACE System Management Appliance help contents.
   - **Knowledge Base** (): Allows you to browse the Knowledge Base articles associated with the related Administrator Console page.

     **NOTE:** This option is only available in the Administrator Console and the System Console. It does not appear in the User Console.

   - **Video Knowledge Base** (): Allows you to browse one or more training videos associated with the related Administrator Console page. You can play a video on the help pane, in a smaller window outside of the selected page, or on the target Knowledge Base page that hosts the video.

     **NOTE:** This option is only available if related videos exist on the Support Portal. Also, it only appears in the Administrator Console and the System Console. It does not appear in the User Console.

   - **Live Chat** (): Starts a chat with a KACE System Management Appliance product specialist.

     **NOTE:** This option is only available in the Administrator Console and the System Console. It does not appear in the User Console.

   - **Open Ticket** (): Links to the Support page (https://support.quest.com/create-service-request) that allows you to create a service request.

**NOTE:** This option is only available in the Administrator Console and the System Console. It does not appear in the User Console.

- **Support** (): Links to the **Settings > Support** page. This page provides resources for troubleshooting system management issues and contacting Quest Support.

  **NOTE:** This option is only available in the Administrator Console and the System Console. It does not appear in the User Console.

- **KACE GO Mobile App** (): Displays a dialog containing links for downloading the KACE GO Mobile App. The app is available for iOS and Android platforms.

  **NOTE:** This option is available if the appliance is configured to interact with the K1 GO Mobile App. It only appears in the Administrator Console and the System Console. It does not appear in the User Console For more information on enabling mobile access, see Configuring Mobile Device Access.

- **About** (): Displays information about your KACE System Management Appliance installation.

  **NOTE:** This option is only available in the Administrator Console and the System Console. It does not appear in the User Console.

3. Click a link in the page-level Help topic.

   **The main Help system appears, displaying the selected topic.**

4. Click the **Search** tab in the left pane of the Help system.

**All search terms use an implicit Boolean AND statement. For example, if you search for Windows provisioning, Search displays results that contain both words.**

**TIP:** For a PDF version of the Help system, click the Acrobat button on the right side of the main Help system navigation bar ().

5. **Administrator or System Console only**. Search for Knowledge Base articles associated with the related Administrator Console or the System Console page.
   a. At the bottom of the help pane, click .

      **The help pane displays a list of related Knowledge Base articles.**

      **NOTE:** Knowledge Base articles are currently only available in English.

   b. Use the navigation buttons to look for a specific article.
   c. Search the listed articles for a specific keyword, as needed.
   d. When you find a desired article, click the link in the help pane.

      **The selected Knowledge Base article appears on a new tab in your browser.**

      **IMPORTANT: To see the article contents, you must log in to the Quest Support site using your Quest user name and password.**

6. **Administrator or System Console only**. Search for Knowledge Base articles associated with the related Administrator Console or the System Console page.
   a. At the bottom of the help pane, click .

      **The help pane displays a list of related training videos.**

      **NOTE:** To access the videos, you must log in to the Quest Support site using your Quest user name and password. Training videos are currently only available in English.

   b. Use the navigation buttons to look for a specific video, as applicable.
   c. To play a video, click the Play Video button.

**The selected video starts playing on the help pane.**

d. Continue to play a video on the help pane, or use a different display option, such as *Picture-In-Picture*, *Fullscreen*, or *Popout player*, to display it outside of the selected page. These controls are located at the bottom of the video.

7. **Administrator or System Console only**. Chat with a product specialist.
   a. Click .

      **The** *Chat with Support* **dialog box appears.**

   b. Type your *Full Name*, *Email Address*, and *Purpose of your Chat*, as applicable, and click **Start Chat**.

      **The** *Chat with Support* **dialog box refreshes, showing a list of existing Knowledge Base (KB) articles that may contain information about the specified topic. The list of topics may appear on multiple pages, depending on the type of the requested information.**

   c. Review the list of KB articles. Use the page navigation controls at the bottom of the list, if applicable. To read a KB article, click the title in the list.
   d. If none of the listed KB articles provide the information you need, click **None of the solutions above solved my issue, continue with chat**.

   **NOTE:** You can only use this feature when product specialists are available to respond to your questions. If Live Chat is not available, this is indicated in the dialog box.

      **The** *LIVE CHAT* **dialog box appears. The** *Full Name*, *Email Address*, *Product* **and** *Purpose of your Chat* **boxes are populated using the information specified in the** *Chat with Support* **dialog box.**

   e. Click **Start Chat**.

      **The** *LIVE CHAT* **dialog box refreshes.**

   f. In the *LIVE CHAT* dialog box, type your question, and click **SEND** to start chatting with a product specialist.
8. **Administrator or System Console only**. Open a Support ticket.
   a. Click .

      **Your browser displays the** *Submit a Service Request* **page (https://support.quest.com/create-service-request) in a new tab or window.**

   b. Use this page to open a service ticket, as required.
9. **Administrator or System Console only**. Click .

   **The Settings > Support page appears. This page provides resources for troubleshooting system management issues and contacting Quest Support.**
10. **Administrator or System Console only, when mobile access is enabled on the appliance.**

    **NOTE:** For more information on enabling mobile access, see Configuring Mobile Device Access.

    a. Click .

       **A dialog box appears, allowing you to download KACE GO. The app is available for iOS and Android platforms from their respective app stores.**

    b. Click the link for your mobile device OS, as needed, to download the app.

       **For more information about downloading and configuring KACE GO, seeDownload and use KACE GO.**
11. **Administrator or System Console only**. Review information about your KACE System Management Appliance installation.
    a. Click .

**A dialog box displaying product information appears.**

b. To close it, click **Close**.

12. To close the help pane, click **Need Help**.

# Log in to the Administrator Console: First login following initial network configuration

After the network settings are configured and the appliance restarts, you can log in to the appliance Administrator Console from any computer on the LAN (local area network).

During the first login following initial network configuration, you must provide your appliance license key and set the password for the **admin** account.

**NOTE:** Your browser setting determines the language displayed in the Administrator Console the first time you log in. To change this setting after you log in, see Configuring locale settings.

1. Open a web browser and enter the Administrator Console URL:

   **`http://appliance_hostname/admin`. For example, `http://kace_sma/admin`.**

2. Provide the following information:

| Option | Description |
|---|---|
| **License Key** | Enter the license key you received in the **Welcome** email from Quest. Include the dashes. If you do not have a license key, contact Quest Support at https://support.quest.com/contact-support. |
| **Password** | Enter a password for the default **admin** account, which is the account you use to log in to the appliance Administrator Console. The default **admin** account is the only account on the appliance at this time. If you forget the password for this account, the system might have to be reset to factory defaults which can result in loss of data.<br>**NOTE:** If you have multiple types of KACE appliances, Quest recommends that you use the same password for the **admin** account on all appliances. Using a common password enables you to link the appliances later. |
| **Company Name** | Enter the name of your company or group. |
| **Timezone** | Select the timezone where the appliance is located. |

3. Click **Apply Settings and Reboot**.

   **The appliance restarts.**

4. When the appliance has restarted, refresh the browser page.
5. Accept the End User License Agreement (EULA), then log in using the login ID `admin` and the password you chose on the initial setup page.
6. Select or clear the check boxes next to the notification fields to enable or disable email notifications for the administrator account. You can change these settings later as needed. See Manage appliance administrator email notifications.

| Option | Description |
| --- | --- |
| **Enable Quest Security Notifications** | Enable Quest to send security notifications to the email address of this administrator. This feature is available only to System-level administrator accounts. It is not available to Admin-level administrator accounts, or non-administrator user accounts. |
| **Enable Quest Sales and Marketing Notifications** | Enable Quest to send sales and marketing notifications to the email address of this administrator. This feature is available only to System-level administrator accounts; it is not available to Admin-level administrator accounts, or non-administrator user accounts. |

The Administrator Console appears and the appliance is ready for use.

# Getting started

To use the appliance, you need to configure appliance settings to match your network configuration.

In addition, you can set up Labels, User Authentication, Replication Shares, Credentials Management, Assets, License Compliance, and Service Desk features to meet the needs of your environment. If the Organization component is enabled on your appliance, you can add or edit organizations and organization settings as needed.

# Configuring the appliance

Appliance configuration consists of setting up network, security, locale, and other settings on the appliance.

## Requirements and specifications

appliance technical specifications describe appliance capacity and requirements for managing devices.

For the latest information about appliance hardware, requirements for managed devices, and browser requirements for accessing the Administrator Console, see the *Technical Specifications* available on the product documentation page: https://support.quest.com/kace-systems-management-appliance/technical-documents.

## Power-on the appliance and log in to the Administrator Console

When the appliance is powered on for the first time, you can log in to the appliance Administrator Console from any computer on your LAN, provided that a DHCP server is available to assign an IP address to the appliance. This enables you to use the setup wizard to configure initial network settings.

- If you have the virtual version of the virtual appliance, download the appliance software and set up the virtualization infrastructure. For more information, see the setup guide for the virtual appliance. Go to https://support.quest.com/kace-systems-management-appliance/release-notes-guides.
- If you are installing the physical version of the appliance, review and follow the safety instructions in the **Dell PowerEdge R430 Getting Started With Your System** document and any other safety instructions shipped with the appliance. The Quest appliance is a specially configured platform and does not require you to install or remove internal components, update firmware, or modify BIOS settings. To set up the appliance, follow the instructions in this document only.
- In the A record of your internal DNS (domain name system) server, enter the appliance's hostname. The A record defines the hostname for the MX record, and this enables users to send email tickets to the Service Desk. By default, the appliance's host name is `k1000`, but you can change it during initial setup.
- Decide whether to use a split DNS. Using a split DNS is useful if the appliance connects to the internet using a reverse proxy, or if you place the appliance in a perimeter network or screened subnet. A DMZ adds an additional layer of security to a LAN (local area network).
- (Optional) Obtain a static IP address for the appliance.

If a DHCP server is not available, you can configure network settings using the Command Line Console. See Access the Command Line Console.

**NOTE:** For information about logging in to KACE as a Service, see the **KACE as a Service Setup Guide**. Go to https://support.quest.com/kace-systems-management-appliance/release-notes-guides.

1. If you are configuring the physical version of the appliance:
   a. Install the appliance in its rack and connect a monitor directly to the appliance.
   b. Connect a network cable to the port indicated:

   c. Power on the appliance.

      **The Command Line Console login screen appears on the monitor connected to the appliance. The login screen shows the appliance's DHCP network settings.**

2. If you are configuring the virtual version of the appliance, power on the virtual machine to boot the appliance.

   **This first-time startup takes 5 to 10 minutes.**

   **The Command Line Console login screen appears showing the appliance's DHCP network settings.**

3. On any computer connected to your LAN, open a browser and go to the URL shown on the Command Line Console login screen. For example, `http://kace_sma.local/admin`.

   **The** *Software Transaction Agreement* **page appears.**

4. Accept the agreement.

   **The** *Initial Setup* **wizard appears.**

5. Verify that you have the information required to configure the appliance, then click **Next**.
6. Review the information on the *Diagnostic Support Console* page that appears, and record the secret key and offline tokens in a secure place, as instructed.
7. On the *Licensing and Administrator Settings* page, provide the following information:

| Option | Description |
|---|---|
| **License Key** | The license key you received in the **Welcome** email from Quest. Include the dashes. If you do not have a license key, contact Quest Support at https://support.quest.com/contact-support. |
| **Company Name** | The name of your company or group. |
| **Administrator Email** | The email address where you want to receive communications from Quest. |
| **Password** | The password for the default **admin** account, which is the account you use to log in to the appliance Administrator Console. The default **admin** account is the only account on the appliance at this time. If you forget the password for this account, the system might have to be reset to factory defaults, which can result in loss of data.<br>**NOTE:** If you have multiple types of KACE appliances, Quest recommends that you use the same password for the **admin** account on all appliances. Using the same admin account password enables you to link the appliances later. See Linking Quest KACE appliances. |

| Option | Description |
|---|---|
| **Two-Factor Authentication** | If you want to provide stronger security for users logging into the appliance, set this to *Enabled*. This feature adds an extra step to the login process. It relies on the Google Authenticator app to generate verification codes. The app generates a new six-digit code at regular intervals. When enabled, end users will be prompted for the current verification code each time they log in.<br>**NOTE:** If you enable this feature, ensure that appliance server's clock is accurate, as well as the device running Google Authenticator. Google Authenticator relies on current time to create the token. If server's clock is not synchronized with those of the devices running Google Authenticator, token validation may fail, which may result in account lockouts. |

8. Follow the onscreen instructions to complete the initial setup.

   **When the initial setup is complete, the appliance restarts and the Administrator Console login page appears.**

   **NOTE:** If you changed the appliance IP address, go to the new address to display the login page.

9. Log in to the Administrator Console using the login ID admin and the password you chose during initial setup.

   **If Two-Factor Authentication was enabled on the** *Licensing and Administrator Settings* **page, the** *Configure Two-Factor Authentication* **page appears.**

10. **Two-Factor Authentication only**. Follow the instructions on the *Configure Two-Factor Authentication* page to generate a Google Authenticator verification code using your smart phone. In the *Verification Code* field, type the Google Authenticator code, and click **Finish Configuration**. A new verification code is required on each subsequent login.

**To skip this step, click Skip Configuration. You can only bypass this step during a configured transition window. For more information, see Configure security settings for the appliance.**

The Administrator Console appears and the appliance is ready for use. Your browser setting determines locale formats used for date and time information displayed in the Administrator Console the first time you log in. For information about changing the language settings, see Configuring locale settings.

# Access the Command Line Console

The Command Line Console is a terminal window interface to the appliance. You can use this interface to configure appliance settings, just as you would in the appliance Administrator Console. This is useful if a DHCP server is not available and you cannot log in to the Administrator Console.

The Command Line Console is not used with K1 as a Service.

1. If you have a physical version of the appliance:
   a. Connect a monitor and keyboard directly to the appliance.
   b. Connect a network cable to the port indicated:

c. Power on the appliance.

**The Command Line Console login screen appears on the monitor connected to the appliance.**

2. If you have a virtual version of the appliance, power on the virtual machine to boot the appliance.

**The Command Line Console login screen appears.**

3. At the prompts, enter:

*Login*: **konfig**

*Password*: konfig

4. Choose the language to use for the Command Line Console. Use the up- and down-arrow keys to move between fields.
5. Configure network settings. See Change appliance network settings.

**TIP:** Use the right- and left-arrow keys to select options in a field; use the up- and down-arrow keys to move between fields.

6. Use the down-arrow key to move the cursor to *Save*, then press **Enter** or **Return**.

**The appliance restarts.**

# Tracking configuration changes

If History subscriptions are configured to retain information, you can view the details of the changes made to settings, assets, and objects.

This information includes the date the change was made and the user who made the change, which can be useful during troubleshooting.

**Related topics**

About history settings

# Configuring System-level and Admin-level General Settings

If the Organization component is enabled on your appliance, General Settings are available at the System level and at the Admin level. If the Organization component is not enabled on your appliance, all General Settings are available at the Admin level.

If the Organization component is enabled on your appliance, see:

- Configure appliance General Settings with the Organization component enabled.
- Configure Admin-level or organization-specific General Settings.

If the Organization component is not enabled, see:

- Configure appliance General Settings without the Organization component.

# Configure appliance General Settings with the Organization component enabled

If the Organization component is enabled on your appliance, configure appliance General Settings at the System level.

If the Organization component is not enabled on your appliance, see Configure appliance General Settings without the Organization component.

1. Go to the System-level *General Settings* page:
    a. Log in to the appliance System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page.
    b. On the left navigation bar, click **Settings**, then click **Control Panel**.
    c. On the *Control Panel*, click **General Settings**.
2. In the top section, provide the following information:

| Option | Description |
|---|---|
| **Company Name** | Enter the name of your company. |
| **Default Locale** | Select the language to use in the Command Line Console, which uses the `konfig` user account. |
| **Company Email Suffix** | Enter the domain from which your users send email. For example: quest.com. |
| **Appliance Administrator Email** | Enter the email address of the appliance administrator. System-related messages, including critical alerts, are sent to this address. |
| **Session Timeout** | Set the number of inactive hours to allow before closing user sessions and requiring users to log in again. The default is 1. The User Console and Administrator Console have Timeout Session counters to alert users of this time limit. Only periods of inactivity are counted. The counter restarts when the user performs any action that causes the console to interact with the appliance server, such as refreshing a window, saving changes, and changing windows. When the counter reaches the limit, the user is logged out, unsaved changes are lost, and the login screen appears. The Timeout Session counter appears in the upper right of each console. |
| **Enable mobile device access** | Enable or disable Mobile Device Access to the appliance. Mobile device access enables you to interact with the appliance using the KACE GO app on iOS and Android smart phones and tablets. Administrators can use the app to access Service Desk, inventory, and application deployment features. See Configuring Mobile Device Access. |
| **Require organization selection at login** | Display the *Organization* drop-down list on the Administrator Console login page, `http://`**appliance_hostname**`/admin`, where **appliance_hostname** is the hostname of your appliance. This enables you to choose an organization when you log in. If this option is disabled, the *Organization* drop-down list is not displayed on the login page, and you can only log in to the Default organization from `http://`**appliance_hostname**`/admin`. If organization fast switching is enabled, however, you can switch between organizations after you log in to the Default organization. |

| Option | Description |
|---|---|
| **Show organization menu in admin header** | Display the *fast-switching* drop-down list in the top-right corner of the Administrator Console next to the login information. This drop-down list makes it possible to bypass the login page when you switch from one organization to another. To appear in the drop-down list, organizations must have the same **admin** account password; only those organizations whose **admin** account passwords match appear in the list. Changes to the drop-down list are displayed only after you log out and then log in again. |

3. **Optional**. In the *Beta Notifications* section, indicate if you want to participate in the Beta program.

   **Beta program participants receive notifications when a Beta version of the appliance becomes available. These notifications appear as alerts on the on the Home dashboard.**

   **These notifications may target specific configurations. Enabling them does not trigger automated upgrades to Beta versions, or automatically register this appliance for the Beta program. Beta enrollment is still required to participate, and details are provided in the notifications.**

   **For more information about the Home dashboard, see Using the Home component.**

   a. Select **Enable beta notifications from KACE**.
   b. If you want these notifications to appear only in the System Administration Console, select **Restrict beta notifications to System UI**.

      **Leaving this option cleared causes the Beta notifications to appear in both the Administrator Console and System Administration Console.**

4. In the *Agent Tasks* section, view or configure KACE Agent task throughput:

| Option | Description |
|---|---|
| **Last Task Throughput Update** | This value indicates the date and time when the appliance task throughput was last updated. |
| **Current Load Average** | The value in this field depicts the load on an appliance at any given point of time. For the appliance to run normally, the value in this field must be between 0.0 and 10.0. |
| **Task Throughput** | The value that controls how scheduled tasks, such as inventory collection, scripting, and patching updates, are balanced by the appliance.<br>**NOTE:** This value can be increased only if the value in the Current Load Average is not more than 10.0, and the Last Task Throughput Update time is more than 15 minutes. |

5. In the *Duplicate Machine Detection Settings (Advanced)* section, configure the following options to prevent duplicate device records

   **When the appliance receives inventory from a device without an existing inventory record (which is determined by the use of a new/unknown KUID), it scans the device's properties that you select in this section to determine whether this is a new device or an existing one. If it determines that the device belongs to an existing inventory record, it merges the new device record with the existing one.**

| Option | Description |
|---|---|
| **Required to match an existing machine record** | Select one or more of the following check boxes to indicate which device properties you want the appliance to use to identify potentially duplicated devices.<br>• **Machine Name**<br>• **BIOS Serial Number**<br>• **Manufacturer**<br>• **Operating System Family** |
| **MAC Addresses** | Specify the number of MAC addresses that are associated with the machine record that you to match with the existing device records. |

6. In the User Console section, modify the text as needed:

| Option | Description |
|---|---|
| **Title** | The heading that appears on the User Console login page. |
| **Welcome Message** | A welcome note or description of the User Console. This text appears below the title on the User Console login page. |

7. In the *Acceptable Use Policy* section, select policy settings:

| Option | Description |
|---|---|
| **Enabled** | Enable the appliance to display your policy, and require users to accept the terms of your policy, when they access the Administrator Console, User Console, or Command Line Console, or log in using SSH or FTP. |
| **Title** | The heading of the policy to be displayed on the login page of the User Console. |
| **Message** | Details of the policy, which are displayed below the *Title* on the login page. Users must agree to the terms of the policy before they can log in to the User Console. |

8. In the *Reporting* section, specify the password for the reporting system:

| Option | Description |
|---|---|
| **Username** | (Read-only) The username used to generate reports. The report username provides access to the database (for additional reporting tools), but does not give write access to anyone. |
| **User Password** | The report user password. This password is used only by the reporting system and MySQL™. |

9. In the *Log Retention* section, select the number of days to retain log information. Log entries that are older than the selected number of days are automatically deleted from the log. See View appliance logs.
10. In the *User Notification Retention* section, select the number of days to retain user notification. Any user notifications that are older than the selected number of days are automatically deleted from the Notifications pane. See Configure user notifications.
11. In the *Share with Us* section, select data sharing options:

    To validate the your product license, Quest collects minimal license-related information, such as the MAC Address of the appliance, the version of the appliance software, the license key, and the number of managed devices, regardless of the data sharing options selected in this section.

| Option | Description |
|---|---|
| **Share summary usage data...** | (Recommended) Share summary information with Quest. This information includes appliance status, uptime, and load averages, as well as the number of devices, Managed Installations, and applications being managed by the appliance. This option is recommended because it provides additional information to Quest Support if you need assistance. In addition, data shared with Quest is used when planning product enhancements. |
| **Share detailed usage data...** | (Recommended) Share detailed information with Quest and share anonymous information with ITNinja.com. This information includes Agent and appliance crash reports, user interface usage statistics, and inventory information, such as application titles. Quest uses this information to help improve the Software Catalog, and ITNinja uses anonymous data to identify relevant content on http://www.itninja.com for dynamic feeds to the appliance Administrator Console.<br>ITNinja.com is a community website where IT professionals can share information and research on a wide variety of systems management and deployment topics. The ITNinja feed is a feature that dynamically displays software deployment tips and other contextual information on relevant pages in the appliance Administrator Console. To enable the ITNinja feed, you need to select **Share detailed Usage data...**. This setting shares information anonymously with ITNinja. The ITNinja feed is available only if **Share Summary Usage Data...** is selected, and it is available only on pages related to software or deployment, such as the software, Managed Installation, and File Synchronization detail pages. The feed is not available on the *Software Catalog* detail page.<br>Clear this option to prevent the appliance from sharing inventory data with the ITNinja community. However, clearing this option does not remove any information that has already been shared. For more information, contact Quest Support. |
| **Share extended patch diagnostics** | (Recommended) Share detailed patch diagnostics with Quest. |

12. To use custom Administrator Console, User Console, or report logos and background colors, in the *Login Screen Options* sections, provide the following information.

| Option | Description |
|---|---|
| **System Console Login Background Color**<br>**Admin Console Login Background Color**<br>**User Console Login Background Color** | You can access the appliance from the following levels:<br>• Administrator Console shows organization-related features.<br>• System Administration Console provides access to appliance-related features.<br>• User Console makes applications available to users on a self-service basis. It also enables users to file Service Desk support tickets to request help or report issues. To access the User Console, go to `http://<appliance_hostname>/user` where `<appliance_hostname>` is the host name of your appliance.<br>For each of these web-based interfaces you can specify a different background color of the login screen. Any colors specified on the organization level override system-level settings.<br>Click and use the color chooser to specify the color that you want to appear in the background of the login screen. You can select the color using the mouse, or specify the RGB values, as needed. When you close the color chooser, the *HTML Color Code* field on the right displays the HTML code of the selected color. To undo your selection, click **Reset** and start over.<br>**NOTE:** The color chooser is not supported in Internet Explorer 11. |

| Option | Description |
|---|---|
| **System Console Logo**<br>**Admin Console Logo**<br>**User Console Logo**<br>**Report Logo** | In each applicable section, click **Choose File**, and specify the graphic file that you want to use as the custom logo in the available web interfaces and in system-generated reports.<br>The supported graphic file formats are `.bmp`, `.gif`, `.jpg`, and `.png`. Any logos configured on the organization level override system-level settings.<br>To see default logos and sample customized versions, refer to the following illustrations. |

**Figure 1. Default User Console logo**

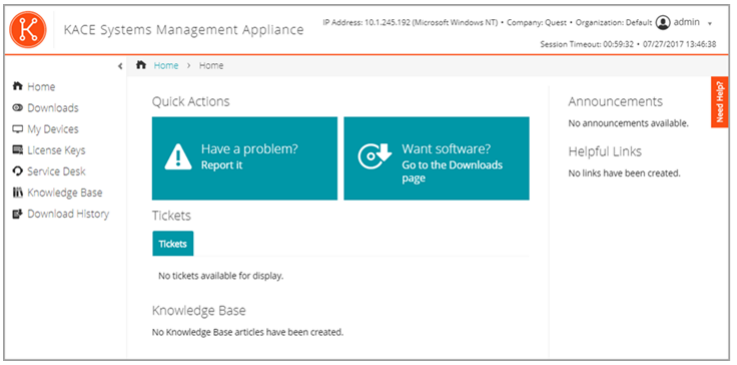



**Figure 2. Custom User Console logo**

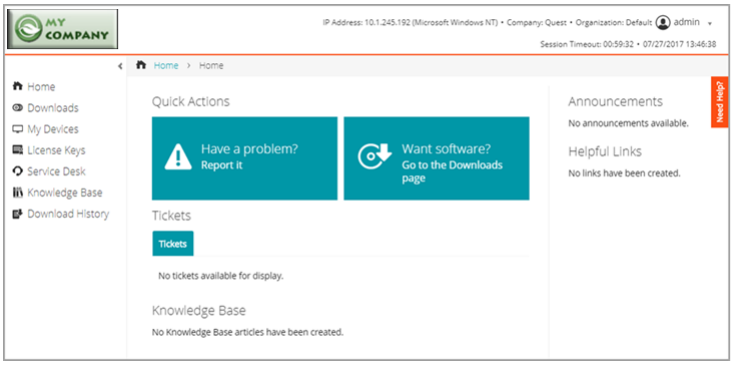



**Figure 3. Default report logo**

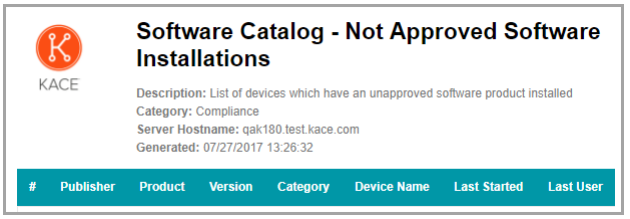
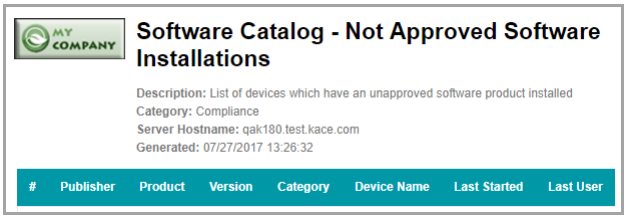



**Figure 4. Custom report logo**




13. If you manage Hewlett-Packard (HP) or Lenovo devices, you can retrieve their warranty information. To do that, in the *Manufacturer Warranty API Keys* section, provide the HP and/or Lenovo API keys to obtain the warranty data. Lenovo requires only a key whereas HP requires both a key and a secret. These values are stored encrypted in the database.

    **IMPORTANT: To obtain warranty information, you must configure the manufacturer's warranty API keys. For complete instructions, visit https://go.kace.com/to/k1000-help-warranty.**

    **When configured, the device warranty information appears on the *Device Details* page in the *Inventory Information* group when you select an HP or Lenovo device. For more information, see Groups and sections of items in device details.**

| Option | Description |
|---|---|
| **Hewlett-Packard** | Select this option if you want to obtain warranty information for your managed HP devices. If this option is selected and you clear it, the HP API key and secret are removed from the database. |
| **Key** | The API key for obtaining warranty information for managed HP devices. |
| **Secret** | The secret for obtaining warranty information for managed HP devices. |
| **Lenovo** | Select this option if you want to obtain warranty information for your managed Lenovo devices. If this option is selected and you clear it, the Lenovo key is removed from the database. |
| **Key** | The API key for obtaining warranty information for managed Lenovo devices. |

14. Click **Save and Restart Services**.

**Related topics**

Configuring locale settings

Configuring Mobile Device Access

Creating and managing organizations

# Configure Admin-level or organization-specific General Settings

If the Organization component is enabled on your appliance, configure organization-specific General Settings at the Admin level. You configure the General Settings for each organization separately.

See Adding, editing, and deleting organizations.

If the Organization component is not enabled on your appliance, see Configure appliance General Settings without the Organization component.

1. Go to the Admin-level *General Settings* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General

Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Settings**, then click **General Settings**.

2. In the *General Options* section, view or enter the following information.

| Option | Description |
|---|---|
| **Last Updated** and **Organization Name** | (Read-only) The date the information was changed and the name of the organization. *Organization Name* can be edited at the System level. See Add or edit organizations. |
| **Company Name** | Enter the name of your company. |
| **Administrator Email** | Enter the email address of the appliance administrator. System-related messages, including critical alerts, are sent to this address. |
| **Company Email Suffix** | Enter the domain from which your users send email. For example: example.com. |

3. Optional: In the *Locale Settings* section, specify locale settings. See Configuring locale settings.

| Option | Description |
|---|---|
| **Organization Locale** | Select the locale to use for the selected organization's Administrator Console and User Console. If you have multiple organizations, you can select different locales for each one. See:<br>• Adding, editing, and deleting organizations<br>• Configuring locale settings |

4. Optional: In the *Samba Share Settings* section, select file sharing options then click **Save Samba Settings**. If File Shares are disabled, you need to enable them at the System level before you can enable them for the organization. See Configure security settings for the appliance.

| Option | Description |
|---|---|
| **Enable File Sharing** | Use the appliance's client share to store files, such as files used to install applications on managed devices.<br>The appliance's client share is a built-in Windows file server that can be used by the provisioning service to assist in distributing the Samba client on your network. Quest recommends that this file server only be enabled when you perform application installations on managed devices. |
| **File Share User 'admin' Password** | Enter the password to use for admin account access to the file share directory. |

5. In the *Ignore Client IP Address Settings* section, enter the IP address or addresses to ignore. Separate each address with a comma. Ignoring IP addresses is useful when multiple devices could report themselves with the same IP address, such as a proxy address.
6. In the *License Usage Warning Configurations* section, select the percentage to use for the warning threshold and critical threshold for software license usage. If you have configured software License assets, threshold information is displayed on the license-related widgets on the *Dashboard*
7. In the *Data Retention* section, select the options for retaining data in the appliance database.

| Option | Description |
|---|---|
| **Retain Device Uptime Data** | The number of months that device uptime information is retained in the appliance database. |

| Option | Description |
|---|---|
| | Device uptime refers to the number of hours of each day that managed devices are running. You can retain this data for a specified number of months, **Forever**, or never save it (**Disabled**). |
| **Retain Metering Data** | The number of months that metering data is retained in the appliance database.<br>Metering data is information about how applications are installed and used on the Windows and Mac devices that you manage. Metering data that is older than the selected number of months is deleted on the first day of every month. See About metering information. |
| **Retain Uncataloged data in the Software Catalog** | Whether to retain information about Uncataloged applications in the appliance database.<br>Uncataloged applications are executables that are in the appliance inventory but that do not appear in the Software Catalog, and the appliance retains information about those applications by default. For organizations with a large number of managed devices, however, retaining this data might greatly increase the size of the database. This size increase could increase the time it takes to load pages in the Administrator Console and the time it takes to perform database backups.<br>Select this check box to retain data for Uncataloged software in the appliance database. Clear the check box to disable data retention.<br>If data retention for Uncataloged software is disabled:<br>• Agents on managed devices continue to upload full inventory information, and raw data related to applications is fingerprinted. If data sharing is enabled, data is also uploaded to the Quest KACE Software Catalog. See Configure data sharing preferences.<br>• The appliance continues to store information related to Cataloged applications and Locally Cataloged applications in the organization database.<br>• Information related to Uncataloged applications is not stored in the organization database, and the Uncataloged applications list in the Administrator Console is empty.<br>• Reports for Cataloged applications continue to work as expected. However, reports related to Uncataloged applications show only those applications that are part of Cataloged software titles. |
| **Retain Microsoft Defender Threat Data** | The number of months that Microsoft Defender threat data is retained in the appliance database. |

8. In the *Asset Archive* section, type the number of days that you want to keep the assets marked for archiving, before actually archiving them. The default value is 3 days.
9. In the *User Archive* section, indicate if you want to enable user archival, as needed.
    a. To have the ability to archive user accounts, select the **Enable User Archival** check box.

    **NOTE:** When user archival is enabled, user accounts can only be deleted only if they are marked as archived.

    b. In the *Archive Tag* field, type a label that you want to associate with the state of archived users. For example, `Archived` or `Inactive`.

c. Indicate if you want to maintain Service Desk ticket and asset associations with archived users. Set each of the *Ticket Associations* and *Asset Associations* fields to one of the following options:

- **Maintain Users**: Select this option if you want to continue to associate tickets or assets with archived users. If you select this option, the configured *Archive Tag* appears next to the archived user name, to indicate that the user is no longer active.
- **Remove Users**: Select this option if you want to remove all ticket or asset associations with archived users.

**For more information on how to archive user accounts, see Archive user accounts.**

10. In the *Device Assignment* section, indicate how you want to match users with devices: **One-time sync**, **Continuous sync**, or **Disabled**.
11. In the *Device Actions* section, click **Add New Action**, the select the scripted actions to enable.

    Device Actions are scripted actions that can be performed on managed devices. There are several pre-programmed actions available. To add your own action, select **Custom Action** in the *Action* menu, then enter the command in the *Command Line* text box.

    The following variables are available for device actions:

    KACE_HOST_IP

    KACE_HOST_NAME

    KACE_CUSTOM_INVENTORY_*

    When device actions run, the appliance replaces variables with their appropriate values.

    For KACE_CUSTOM_INVENTORY_ * replace the asterisk (*) with the name of a software application associated with a custom inventory rule. When the device action runs, the name is replaced with the custom inventory rule value for the device. Enter the software application name in uppercase characters. The allowed characters are: [A-Z0-9.-]."

    **NOTE:** Most actions in the *Action* drop-down list require you to install additional applications for them to function. For example, using DameWare requires you to install TightVNC on your device as well as on the device you want to access.

    This feature is only supported on Windows devices. The Windows device you are running the device action from must have the KACE Agent version 9.0 or later agent installed and connected.

    When you initiate device through the agent, the action executable must be placed in your `%PATH%`. The agent is 32-bit, so on 64-bit Windows devices, use `%windir%/System32` as an alias to the `%windir%/Wow64` directory. If you need to run a program that's located in the `%windir%/System32` directory on a 64-bit Windows system, you must use the `%windir%/SysNative` virtual directory. You can either add `%windir%/SysNative` to your `%PATH%` environment variable or provide a fully-qualified path by prepending `%windir%/SysNative` to your executable when defining your machine action.
12. In the *Patch Schedule* section, if you want disable administrators to apply patches to all devices, select the **Hide All Devices** check box.

    **NOTE:** You can only apply this setting if you do not have any patch schedules set up to run against all devices. Otherwise, a warning appears.
13. In the *Allowed Bulk Actions* section, indicate if you want to enable bulk actions against KACE Cloud Mobile Device Manager (MDM) and VMware virtual machine devices. When bulk actions are enabled, the associated KACE Cloud MDM and VMware virtual machine commands become available from the **Choose Action** menu on the *Devices* list page.

| Option | Description |
|---|---|
| **Enable Bulk KACE Cloud MDM Actions** | Select this check box to enable commands against multiple KACE Cloud MDM devices on the *Devices* list page. |

| Option | Description |
|---|---|
| **Enable Bulk Virtual Machine Actions** | Select this check box to enable commands against multiple VMware or Hyper-V virtual machine devices on the *Devices* list page. |
| **Enable Bulk Chrome OS Actions** | Select this check box to enable commands against multiple Chrome OS devices on the *Devices* list page. |
| **Enable Bulk Restart Device Command** | Select this check box to enable the restart command against multiple devices on the *Devices* list page. |
| **Enable Bulk Microsoft Defender Actions** | Select this check box to enable Microsoft Defender commands against multiple devices on the *Devices* list page. |

14. To use custom Administrator Console, User Console, report, and KACE Agent alert logos and background colors, in the *Login Screen Options* sections, provide the following information.

| Option | Description |
|---|---|
| **Admin Console Login Background Color**<br>**User Console Login Background Color** | You can access the appliance from the following levels:<br>• Administrator Console shows organization-related features.<br>• System Administration Console provides access to appliance-related features.<br>• User Console makes applications available to users on a self-service basis. It also enables users to file Service Desk support tickets to request help or report issues. To access the User Console, go to `http://<appliance_hostname>/user` where `<appliance_hostname>` is the host name of your appliance.<br>When you select an organization in the Administrator Console, you can specify a different background color of the Administrator Console and User Console login screens. Any colors specified on the organization level override system-level settings. For information on how to configure system-level settings, see Configure appliance General Settings with the Organization component enabled.<br>Click and use the color chooser to specify the color that you want to appear in the background of the login screen. You can select the color using the mouse, or specify the RGB values, as needed. When you close the color chooser, the *HTML Color Code* field on the right displays the HTML code of the selected color. To undo your selection, click **Reset** and start over.<br>**NOTE:** The color chooser is not supported in Internet Explorer 11. |
| **Admin Console Logo**<br>**User Console Logo**<br>**Report Logo**<br>**Agent Alert Logo** | In each applicable section, click **Choose File**, and specify the graphic file that you want to use as the custom logo in the Administrator Console, User Console, system-generated reports, and in KACE Agent alert that appear on managed devices.<br>The supported graphic file formats are `.bmp`, `.gif`, `.jpg`, and `.png` with the exception of KACE Agent alerts that only support `.bmp` files. Any logos configured on the organization level override system-level settings.<br>To see default KACE Agent alerts and sample customized versions, refer to the following illustrations. For examples of default and custom logos in the Administrator Console, User Console, and system-level reports, see Configure appliance General Settings with the Organization component enabled. |

**Figure 5. Default Alert logo**

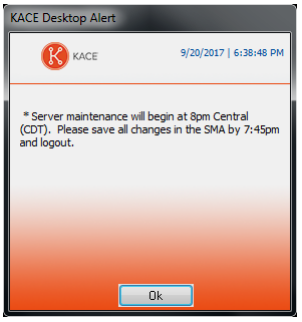
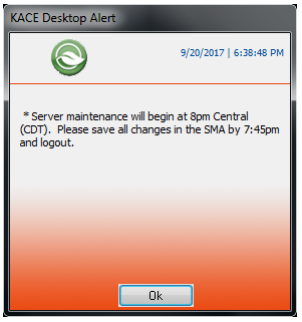



**Figure 6. Custom Alert logo**




15. Click **Save and Restart Services**.
16. If you have multiple organizations, repeat the preceding steps for each organization.

# Configure appliance General Settings without the Organization component

If the Organization component is not enabled on your appliance, all appliance General Settings are available at the Admin level.

If the Organization component is enabled on your appliance, see Configure Admin-level or organization-specific General Settings.

1. Go to the Admin-level *General Settings* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`.
    b. On the left navigation bar, click **Settings**, then click **General Settings**.
2. In the *General Options* section, provide the following information:

| Option | Description |
|---|---|
| **Last updated** | Read-only: The date the information was changed and the name of the organization. |
| **Company Name** | Enter the name of your company. |
| **Administrator Email** | Enter the email address of the appliance administrator. System-related messages, including critical alerts, are sent to this address. |
| **Company Email Suffix** | Enter the domain from which your users send email. For example: example.com. |

| Option | Description |
|---|---|
| **Enable mobile device access** | Enable or disable Mobile Device Access to the appliance. Mobile device access enables you to interact with the appliance using the KACE GO app on iOS and Android smart phones and tablets. Administrators can use the app to access Service Desk, inventory, and application deployment features.<br>See Configuring Mobile Device Access. |
| **Session Timeout** | Set the number of inactive hours to allow before closing user sessions and requiring users to log in again. The default is 1. The User Console and Administrator Console have Timeout Session counters to alert users of this time limit. Only periods of inactivity are counted. The counter restarts when the user performs any action that causes the console to interact with the appliance server, such as refreshing a window, saving changes, and changing windows. When the counter reaches the limit, the user is logged out, unsaved changes are lost, and the login screen appears. The Timeout Session counter appears in the upper right of each console. |

3. In the *Client Drop File Size Filter* section, specify a file size.

| Options | Description |
|---|---|
| **Client Drop File Size Filter** | A file-size filter for the organization's Client Drop location.<br>The Client Drop location is a storage area (Samba share) for the organization on the appliance. This storage area is used to upload large files, such as application installers and appliance backup files, to the appliance. Uploading files to the Client Drop location is an alternative to uploading files through the Administrator Console using the default HTTP mechanism, which can result in browser timeouts for large files.<br>The *Client Drop Size* filter determines whether files uploaded to the organization's Client Drop location are displayed on the *Upload and Associate Client Drop File* list on the *Software Detail* page. For example, if the Client Drop Size filter is set to 1 GB, the *Upload and Associate Client Drop File* list shows files that are 1 GB in size or larger. Files that are less than 1 GB in size are not displayed on the list.<br>Application files are moved from the organization's Client Drop location to the appropriate area when the file is selected on the *Software Detail* page and saved.<br>Appliance backup files that are placed in the Client Drop location are automatically identified as appliance backup files, and they become available for selection on the *Backup Settings* page within five minutes. See Copy files to the appliance Client Drop location. |

4. In the User Console section, specify customizations for the User Console text:

| Option | Description |
|---|---|
| **Title** | The heading that appears on the User Console login page. The User Console is the web-based interface that makes applications available to users on a self-service basis. It also enables users to file Service Desk support tickets to request help or report issues. To access the User Console, go to `http://<appliance_hostname>/user` where `<appliance_hostname>` is the hostname of your appliance. |
| **Welcome Message** | A welcome note or description of the User Console. This text appears below the title on the User Console login page. |

5. In the *Acceptable Use Policy* section, select policy settings:

| Option | Description |
|---|---|
| **Enabled** | Enable the appliance to display your policy, and require users to accept the terms of your policy, when they access the Administrator Console, User Console, or Command Line Console, or log in using SSH or FTP. |
| **Title** | The heading of the policy to be displayed on the login page of the User Console. |
| **Message** | Details of the policy, which are displayed below the *Title* on the login page. Users must agree to the terms of the policy before they can log in to the User Console. |

6. In the *Log Retention* section, select the number of days to retain log information. Log entries that are older than the selected number of days are automatically deleted from the log. See Access appliance logs to view Microsoft Exchange Server errors.
7. In the *User Notification Retention* section, select the number of days to retain user notification. Any user notifications that are older than the selected number of days are automatically deleted from the Notifications pane. See Configure user notifications.
8. In the *Share With Us* section, specify data sharing options.

**NOTE:** To validate your product license, Quest collects minimal license-related information, such as the MAC Address of the appliance, the version of the appliance software, the license key, and the number of managed devices, regardless of the data sharing options selected in this section.

| Option | Description |
|---|---|
| **Share summary usage data...** | (Recommended) Share summary information with Quest. This information includes appliance status, uptime, and load averages, as well as the number of devices, Managed Installations, and applications being managed by the appliance. This option is recommended because it provides additional information to Quest Support if you need assistance. In addition, data shared with Quest is used when planning product enhancements. |
| **Share detailed usage data...** | (Recommended) Share detailed information with Quest and share anonymous information with ITNinja.com. This information includes Agent and appliance crash reports, user interface usage statistics, and inventory information, such as application titles. Quest uses this information to help improve the Software Catalog, and ITNinja uses anonymous data to identify relevant content on http://www.itninja.com for dynamic feeds to the appliance Administrator Console.<br><br>ITNinja.com is a community website where IT professionals can share information and research on a wide variety of systems management and deployment topics. The ITNinja feed is a feature that dynamically displays software deployment tips and other contextual information on relevant pages in the appliance Administrator Console. To enable the ITNinja feed, you need to select **Share detailed Usage data...**. This setting shares information anonymously with ITNinja. The ITNinja feed is available only if **Share Summary Usage Data...** is selected, and it is available only on pages related to software deployment, such as the software, Managed Installation, and File Synchronization detail pages. The feed is not available on the *Software Catalog* detail page.<br><br>Clear this option to prevent the appliance from sharing inventory data with the ITNinja community. However, clearing this option does not remove any information that has already been shared. For more information, contact Quest Support. |
| **Share extended patch diagnostics** | (Recommended) Share detailed patch diagnostics with Quest. |

9. In the *Locale Settings* section, specify locale preferences. These preferences determine the formats used for date and time information displayed in the Administrator Console.

| Option | Description |
|---|---|
| **Organization Locale** | The locale to use for the organization's Administrator Console and User Console. |
| Command Line Console **Locale** | The locale to use in the Command Line Console, which uses the `konfig` user account. |

10. In the *Ignore Client IP Address Settings* section, enter the IP address or addresses to ignore. Separate each address with a comma. Ignoring IP addresses is useful when multiple devices could report themselves with the same IP address, such as a proxy address.
11. In the *License Usage Warning Configurations* section, select the percentage to use for the warning threshold and critical threshold for software license usage. If you have configured software License assets, threshold information is displayed on the license-related widgets on the *Dashboard*.
12. In the *Update Reporting User Password* section, provide the password of the account required to run reports on the organization. You cannot change the *Database Name* or the *Report Username*.
13. In the *Data Retention* section, select the options for retaining data on the appliance. You can retain this data for a specified number of months, **Forever**, or never save it (**Disabled**).

| Option | Description |
|---|---|
| **Retain Device Uptime Data** | The amount of uptime data to save for devices. Device uptime data refers to the number of hours of each day that your managed devices are running. You can retain this data for a specified number of months, **Forever**, or never save it (**Disabled**). |
| **Retain Metering Data** | The number of months that metering data is retained in the appliance database.<br>Metering data is information about how applications are installed and used on the Windows and Mac devices that you manage. Metering data that is older than the selected number of months is deleted on the first day of every month. See About metering information. |
| **Retain Uncataloged data in the Software Catalog** | Whether or not to retain information about Uncataloged applications in the appliance database.<br>Uncataloged applications are executables that are in the appliance inventory but that do not appear in the Software Catalog, and the appliance retains information about those applications by default. For organizations with a large number of managed devices, however, retaining this data might greatly increase the size of the database. This could increase the time it takes to load pages in the Administrator Console and the time it takes to perform database backups.<br>Select this check box to retain data for Uncataloged software in the appliance database. Clear the check box to disable data retention.<br>If data retention for Uncataloged software is disabled:<br>• Agents on managed devices continue to upload full inventory information, and raw data related to applications is fingerprinted. If data sharing is enabled, data |

| Option | Description |
|---|---|
| | is also uploaded to the Quest KACE Software Catalog. See Configure data sharing preferences.<br>• The appliance continues to store information related to Cataloged applications and Locally Cataloged applications in the organization database.<br>• Information related to Uncataloged applications is not stored in the organization database, and the Uncataloged applications list in the Administrator Console is empty.<br>• Reports for Cataloged applications continue to work as expected. However, reports related to Uncataloged applications show only those applications that are part of Cataloged software titles. |

14. In the *Device Actions* section, click **Add New Action**, the select the scripted actions to enable.

    Device Actions are scripted actions that can be performed on managed devices. There are several pre-programmed actions available. To add your own action, select **Custom Action** in the *Action* menu, then enter the command in the *Command Line* text box.

    The following variables are available for device actions:

    KACE_HOST_IP

    KACE_HOST_NAME

    KACE_CUSTOM_INVENTORY_*

    When device actions run, the appliance replaces variables with their appropriate values.

    For KACE_CUSTOM_INVENTORY_ * replace the asterisk (*) with the name of a software application associated with a custom inventory rule. When the device action runs, the name is replaced with the custom inventory rule value for the device. Enter the software application name in uppercase characters. The allowed characters are: [A-Z0-9.-]."

    **NOTE:** Most actions in the *Action* drop-down list require you to install additional applications for them to function. For example, using DameWare requires you to install TightVNC on your device as well as on the device you want to access.

    This feature is only supported on Windows devices. The Windows device you are running the device action from must have the KACE Agent version 9.0 or later agent installed and connected.

    When you initiate device through the agent, the action executable must be placed in your `%PATH%`. The agent is 32-bit, so on 64-bit Windows devices, use `%windir%/System32` as an alias to the `%windir%/Wow64` directory. If you need to run a program that's located in the `%windir%/System32` directory on a 64-bit Windows system, you must use the `%windir%/SysNative` virtual directory. You can either add `%windir%/SysNative` to your `%PATH%` environment variable or provide a fully-qualified path by prepending `%windir%/SysNative` to your executable when defining your machine action.

15. To use custom Administrator Console, User Console, report, and KACE Agent alert logos and background colors, in the *Login Screen Options* sections, provide the following information.

| Option | Description |
|---|---|
| **Admin Console Login Background Color**<br>**User Console Login Background Color** | You can access the appliance from the following levels:<br>• Administrator Console shows organization-related features.<br>• System Administration Console provides access to appliance-related features.<br>• User Console makes applications available to users on a self-service basis. It also enables users to file Service Desk support tickets to request help or report issues. To access the User Console, go to `http://<appliance_hostname>/user` where `<appliance_hostname>` is the host name of your appliance. |

| Option | Description |
|---|---|
| | When you select an organization in the Administrator Console, you can specify a different background color of the Administrator Console and User Console login screens. Any colors specified on the organization level override system-level settings. For information on how to configure system-level settings, see Configure appliance General Settings with the Organization component enabled.<br>Click and use the color chooser to specify the color that you want to appear in the background of the login screen. You can select the color using the mouse, or specify the RGB values, as needed. When you close the color chooser, the *HTML Color Code* field on the right displays the HTML code of the selected color. To undo your selection, click **Reset** and start over.<br>**NOTE:** The color chooser is not supported in Internet Explorer 11. |
| **Admin Console Logo**<br>**User Console Logo**<br>**Report Logo**<br>**Agent Alert Logo** | In each applicable section, click **Choose File**, and specify the graphic file that you want to use as the custom logo in the Administrator Console, User Console, system-generated reports, and in KACE Agent alert that appear on managed devices.<br>The supported graphic file formats are `.bmp`, `.gif`, `.jpg`, and `.png` with the exception of KACE Agent alerts that only support `.bmp` files. Any logos configured on the organization level override system-level settings.<br>To see default KACE Agent alerts and sample customized versions, refer to the following illustrations. For examples of default and custom logos in the Administrator Console, User Console, and system-level reports, see Configure appliance General Settings with the Organization component enabled. |

**Figure 7. Default Alert logo**

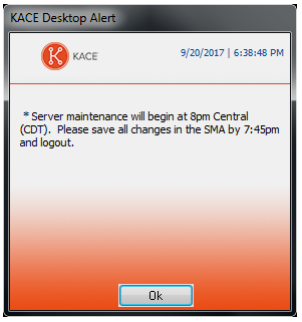
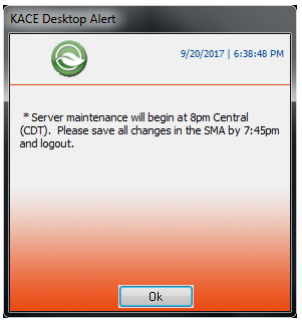



**Figure 8. Custom Alert logo**




16. If you manage Hewlett-Packard (HP) or Lenovo devices, you can retrieve their warranty information. To do that, in the *Manufacturer Warranty API Keys* section, provide the HP and/or Lenovo API keys to obtain the warranty data. Lenovo requires only a key whereas HP requires both a key and a secret. These values are stored encrypted in the database.

**IMPORTANT: To obtain warranty information, you must configure the manufacturer's warranty API keys. For complete instructions, visit https://go.kace.com/to/k1000-help-warranty.**

**When configured, the device warranty information appears on the *Device Details* page in the *Inventory Information* group when you select an HP or Lenovo device. For more information, see Groups and sections of items in device details.**

| Option | Description |
|---|---|
| **Hewlett-Packard** | Select this option if you want to obtain warranty information for your managed HP devices. If this option is selected and you clear it, the HP API key and secret are removed from the database. |
| **Key** | The API key for obtaining warranty information for managed HP devices. |
| **Secret** | The secret for obtaining warranty information for managed HP devices. |
| **Lenovo** | Select this option if you want to obtain warranty information for your managed Lenovo devices. If this option is selected and you clear it, the Lenovo key is removed from the database. |
| **Key** | The API key for obtaining warranty information for managed Lenovo devices. |

17. Click **Save and Restart Services**.

    **The appliance restarts.**

# Configure appliance date and time settings

Configure appliance date and time settings in the Settings section of the Administrator Console. If the Organization component is enabled on your appliance, date and time settings are available at the System level.

It is important to keep the appliance date and time settings accurate, because many calculations are based on these settings.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Date and Time Settings**.

   **The *Date and Time Settings* page appears.**
3. Specify the following settings:

| Option | Description |
|---|---|
| **Timezone** | Select a timezone in the drop-down list. |

| Option | Description |
|---|---|
| **Time Setting** | Select an option:<br>• **Configure Network Time Protocol**. Use an Internet time server. If you select this option, provide the server web address in the *Server* field.<br>• **Manually configure date and time**. Set the appliance clock manually. Specify the time and date in the drop-down lists. The *Hour* drop-down list uses a 24-hour clock format. |
| **Server** | Use an Internet time server to set the appliance time. Enter the web address of the time server in the text box. For example: time.example.com. |

4. Click **Save and Reboot**.

   **The web server restarts and the settings are applied.**

   **NOTE:** During the restart, active connections might be dropped. When changes are saved, the page automatically refreshes after 15 seconds. After the appliance web server restarts, the updated date and time appear in the bottom right of the Administrator Console.

# Managing user notifications

User notifications on the appliance alert you about specific events that require your attention.

These alerts appear on the Notification pane, accessible by clicking the bell icon in the top-right corner of the screen. Administrators can review or edit notification configurations, as needed.

## Review user notification alerts

The appliance displays user notification alerts in the Administrator Console when it encounters certain predefined conditions.

**The list of triggered user notifications can be accessed using the bell icon, located in the top-right corner of the screen. Use this icon to show or hide the Notification pane, as needed. An orange indicator appears on the bell icon when new notifications are reported. After reviewing all new notifications, the indicator disappears.**

Each notification alert that appears in the list is triggered by the related notification configuration. For more details, see Configure user notifications.

The background color of an alert indicates the alert severity: info (blue), warning (yellow), warning (red). This is also determined in the notification configuration.

Notification items always include a time stamp, indicating when the alert occurred. They remain on the list for a configured amount of time, even if the appliance re-boots. You can edit the notification retention period on the *General Settings* page, as applicable. For more details, see Configure appliance General Settings with the Organization component enabled.

Some notifications include links that you can use to drill down to the object associated with the notification. For example, if you see a license expiration notice, the link in the notification takes you directly to the license instance that is about to expire.

If a notification applies to more than one item, such devices or licenses, multiple notification alerts appear, one for each applicable item.

Also, when a notification configuration is associated with one or more users, the resulting notification alerts are displayed only to those users in the Administrator Console. When notification configurations are not linked to any users this way, all users with administrative permissions logged into the Administrator Console can see the

related notifications. This mechanism does not apply to the System Administration Console which always shows all notifications to all users.

You can delete individual notifications by clicking the Delete icon in the top-right corner of each entry in the list. To clear the list of notifications, click **Delete All**.

1. Do one of the following:
   - **Log in to the appliance Administrator Console, `https://appliance_hostname/admin`. Or, if** *Show organization menu in admin header* **is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.**
   - **Log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System from the drop-down list in the top-right corner of the page.**

   **The** *Dashboard* **or** *System Dashboard* **page appears.**
2. In the top-right corner of the screen, click the bell icon to display the Notification pane.
3. Review the list of notifications.
4. **Optional**. You can delete individual notifications, or all of them, as applicable.
   - To delete a notification, click the Delete icon in the top-right corner of the notification alert.
   - To delete all notifications, and clear the entire list, in the top-right corner of the Notification pane, click **Delete All**.

# Configure user notifications

A wide range of predefined notification configurations come included with the appliance.

Administrators can review these configurations on the *User Notifications* page. Additional details about each configuration are displayed on the *User Notification Detail* page after selecting it in the list. Some configurations allow you to enable or disable them, while other settings are read-only.

You can use one or more labels to associate a notification configuration with specific users. This causes the resulting notification alerts to be displayed in the Administrator Console only to the users specified by those labels . If a notification configuration is not linked to any users this way, all users with administrative-level permissions can see the related notification alerts in the Administrator Console, when they are triggered. These settings do not apply to the System Administration Console, that always shows all notifications to all users.

1. Go to the *User Notifications* list page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **User Notifications**.
2. On the *User Notifications* page, review the list of notifications.

   **For each item, the list displays its name, description, whether the notification is enabled, category, and any labels associated with it. There are several available categories, each focusing on a specific aspect of your environment. You can, for example, sort the list by category, and review all notifications in a specific segment, such as** *Security* **or** *Patching***.**
3. To review or edit a specific notification configuration:
   a. Click the name of a user notification.
   b. Observe the contents of the *User Notification Detail* page.

      **The** *Name***,** *Description***, and** *Category* **settings are read-only. Some notification configurations allow you to enable or disable them using the Enabled check box. If this box appears greyed out, the notification configuration is always enabled.**
   c. Review the *User Notifications Label* area, and edit the collection of labels, as needed.

**When you add labels to a notification configuration, only the users specified by those labels can see the resulting notification alerts as they are being triggered. If a notification configuration does not point to any specific users using this method, its notifications can be displayed to all users with the administrative-level permissions in the Administrator Console. The System Administration Console, however, shows all notifications to all logged-in users regardless of these settings.**

**To view, add or edit labels associated with the notification configuration:**

a. Click **Manage Associated Labels**.
b. In the *Select Labels* dialog box that appears, review or edit the list of labels that you want to associate with the user notification. You can add multiple labels to each notification configuration.
c. When done, click **OK** to return to the *User Notification Detail* page.
d. On the *User Notification Detail* page, click **Save**.

# Enable Two-Factor Authentication for all users

Two-Factor Authentication (2FA) provides stronger security for users logging into the appliance by adding an extra step to the login process. It relies on the Google Authenticator app to generate verification codes. The app generates a new six-digit code at regular intervals. When enabled, end users will be prompted for the current verification code each time they log in.

To download the Google Authenticator app, visit one of the following sites, as applicable:

- **Android devices**: https://play.google.com/store/apps/details?id=com.google.android.apps.authenticator2
- **iOS devices**: https://itunes.apple.com/ca/app/google-authenticator/id388497605?mt=8

You can enable 2FA access to the Administrator Console and User Console for all users in the selected organization using the *Two-Factor Authentication* page in the Administrator Console, as described below. Alternatively, you can enable or disable 2FA access to the Administrator Console and User Console using the System Administration Console. For more information, see Configure Two-Factor Authentication for organizations.

1. Go to the Admin-level *Two-Factor Authentication* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **Two-Factor Authentication**.
2. To enable 2FA for all users in the Administrator Console, under *Two-Factor Authentication for Admin Portal*, select **Required for all Users**.

   **This option overwrites 2FA settings in the *User Details* page. When 2FA is enabled for all users on this page, it cannot be disabled for individual users on the *User Details* page for any users that are associated with the selected organization (if applicable).**
3. To enable 2FA for all users in the User Console, under *Two-Factor Authentication for User Portal*, select **Required for all Users**.

# Verifying port settings, NTP service, and website access

Port settings, NTP service, and website access must be configured correctly to enable features such as Agent communications, Software Catalog updates, and patch downloads.

# Verify port settings

Appliance ports must be configured correctly to enable device management and database or file access.

- Ensure that the appropriate appliance ports are not blocked by firewall settings:

| Port | Use | Direction |
|---|---|---|
| **20 and 21** | (Optional and not recommended) Used to access backup files on the appliance through FTP from outside the firewall. | Inbound to the appliance |
| **22** | (Recommended) Used to create an SSH tunnel to quest.com. | Outbound from the appliance |
| **25** | (Optional) Used by the appliance SMTP server for email (non-SSL). This is required only if you configure SMTP email. See Configuring SMTP email servers. | Outbound from the appliance |
| **80** | (Required unless SSL is enabled) Used for standard HTTP (web) access to the Administrator Console and User Console. | Inbound to the appliance |
| **110** | (Optional) Used for POP3 email (non-SSL) | Inbound to the appliance |
| **161** | (Optional) Used for SNMP monitoring. See Discovering devices on your network. | Outbound from the appliance |
| **199** | (Optional) Used for unidirectional (read-only) SNMP access to managed devices on the network through SMUX, an SNMP multiplexing protocol. See Configure security settings for the appliance | Outbound from the appliance |
| **443** | (Required) Used for SSL access and agent messaging protocol communications.<br>Devices use this port when they check in to the appliance using HTTPS.<br>The appliance listens on this port for communications from devices on which the KACE Agent is installed. | Inbound to the appliance |
| **587** | (Optional) Used by the appliance SMTP server for secure email (SSL enabled). This is required only if you configure secure SMTP email. See Configuring SMTP email servers. | Outbound from the appliance |

| Port | Use | Direction |
|---|---|---|
| **995** | (Optional) Used for POP3 email (SSL enabled). | Inbound to the appliance |
| **3306** | (Optional) Used to access the appliance database with external tools. For example, this port is used to run reports on the appliance database using Microsoft Access® or Excel®. | Inbound to the appliance |

- Ensure that the appropriate device ports are accessible to the appliance:

| Port | Use |
|---|---|
| **7** | (Optional) Used by the appliance for UDP traffic on the network, which is used for Wake-on-LAN. See Using Wake-on-LAN. |
| **139** | (Optional) Used during KACE Agent provisioning on Windows devices. |
| **161** | (Optional) Used for SNMP monitoring. This port should be open and bound to SNMP. See Discovering devices on your network. |
| **445** | (Optional) Used during KACE Agent provisioning. See Provisioning the KACE Agent. |

- To use an LDAP server for authentication, ensure that the appropriate ports are accessible from the appliance:

| Port | Use |
|---|---|
| **389** | (Optional) Used for LDAP access. |
| **636** | (Optional) Used for secure LDAP access. |

# Verifying the status of the NTP service

When downloading patches using HTTPS, the NTP (Network Time Protocol) service must be running on the appliance. The NTP service is required because the secure protocol uses the current date stamps from the appliance to ensure certificate validity.

If the NTP service is not running, patch download failures, suggesting invalid certificates, might result.

# Make necessary websites accessible to the appliance

To complete patch downloads, access product information, and interact with Quest Support, firewall, DNS server, and proxy server settings must allow the appliance to access domains on both port 80 and port 443.

- Ensure that the appliance Administrator Console has links to the following websites:

| Website | Description |
|---|---|
| https://twitter.com/quest | Twitter® |
| https://www.facebook.com/questsoftware | Facebook® |

| Website | Description |
|---|---|
| http://linkedin.com/ | LinkedIn® |
| http://my.kace.com/inKpadsubscriptioncenter | Quest KACE Inkpad |
| https://www.quest.com/community/b/en/p/endpoint-management | Quest KACE blog |
| https://kace.uservoice.com/forums/82699-k1000 | Quest KACE Uservoice |

# Configuring network and security settings

Appliance network settings include the hostname, web server name, IP address, and other information required to access the appliance over the network.

## Change appliance network settings

You can change the appliance network settings to meet the needs of your environment any time after the initial configuration.

**For virtual and physical versions of the appliance, network settings are initially configured during the first login to the Administrator Console or the Command Line Console. See Change appliance network settings.**

For K1 as a Service, the appliance is preconfigured with a static IP address, subnet mask, and default gateway. For configuration information, see the **KACE as a Service Setup Guide**. Go to https://support.quest.com/k1000-as-a-service/release-notes-guides.

Changing the majority of appliance network settings requires that you reboot the appliance. Total reboot downtime is one to two minutes, provided that the changes result in a valid configuration.

**TIP:** Testing an external SMTP server does not require the appliance reboot. You can test the SMTP configuration before saving your changes.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Network Settings** to display the *Network Settings* page.
3. On the *Network Settings* page, in the *Appliance Network Configuration* section, provide the following information:

| Option | Description |
|---|---|
| **DNS Hostname** | Enter the hostname of the appliance. The default is k1000. |
| **Web Server Name** | Enter the fully-qualified domain name of the appliance. This is the **Hostname** concatenated with **Domain**. For example: k1000.example.com. Devices connect to the appliance using this name. Quest recommends that you add a static IP address entry for the appliance to your DNS server. If you use an SSL certificate, the hostname must be fully qualified and it must match the name on the certificate. |

| Option | Description |
|---|---|
| **Automatically generate server name** | Select this check box to enable the system to generate the appliance web server name using this format: `Hostname.Domain`. For example: `k1000.example.com`. Clear this check box to enter a custom web server name. |

4. In the *IPv4 Configuration* section, provide the following information:

| Option | Description |
|---|---|
| **Configure Network Using DHCP** | Select this option if you want to use DHCP (Dynamic Host Configuration Protocol) to automatically obtain the IPv4 address and other network configuration information for the appliance. |
| **Configure Network Manually** | Select this option if you want to manually specify the IPv4 address, domain, subnet mask, default gateway, and DNS settings for the appliance:<br>• **IP Address**: Enter the static IP address of the appliance.<br>**CAUTION: If the IP address is incorrect, you cannot access the appliance through the web interfaces (Administrator Console and User Console). If this happens, open the appliance Command Line Console, and use the `konfig` login to enter the correct IP address.**<br>• **Domain**: Enter the domain that the appliance is on. For example, `example.com`.<br>• **Subnet Mask**: Enter the subnet (network segment) that the appliance is on. The default is `255.255.255.0`.<br>• **Default Gateway**: Enter the network gateway for the appliance.<br>• **Primary DNS**: Enter the IP address of the primary DNS server the appliance uses to resolve host names.<br>• **Secondary DNS**: (Optional) Enter the IP address of the secondary DNS server the appliance uses to resolve host names. |

5. In the *IPv6 Configuration* section, provide the following information:

| Option | Description |
|---|---|
| **Configure Network Using SLAAC** | Select this option if you want to use the SLAAC (stateless address auto-configuration), offered by IPv6, to configure the appliance's network settings. SLAAC allows devices to select their own IPv6 addresses based on the prefix that is advertised from their connected interface. |
| **Configure Network Manually** | Select this option if you want to manually specify the IPv6 address, prefix length, and default gateway for the appliance:<br>• **IPv6 Address**: Enter the static IPv6 address of the appliance.<br>**CAUTION: If the IP address is incorrect, you cannot access the appliance through the web interfaces (Administrator Console and User Console). If this happens, open the appliance Command Line Console, and use the `konfig` login to enter the correct IP address.**<br>• **Prefix Length**: Enter the number of bits in the IPv6 address prefix. An IPv6 prefix typically consists of 64 bits.<br>• **Default Gateway**: Enter the network gateway for the appliance. |

| Option | Description |
|---|---|
| **Disable IPv6** | Select this option if you want to disable an IPv6 address for the appliance. This is the default setting. |

6. **Optional**: To set a proxy server, select the **Enable Proxy Server** in the *Proxy Configuration* section, then specify proxy server settings:

| Option | Description |
|---|---|
| **Type** | Enter the proxy type, either HTTP or SOCKS5. |
| **Server** | Enter the name of the proxy server. |
| **Port** | Enter the port for the proxy server. The default port is 8080. |
| **Enable Basic Proxy Authentication** | Select the check box to use the local credentials for accessing the proxy server. |
| **Login** | Enter the username for accessing the proxy server. |
| **Password and Confirm Password** | Enter the password for accessing the proxy server. |

**NOTE:** The appliance supports proxy servers that use basic, realm-based authentication, requiring usernames and passwords. If your proxy server uses a different kind of authentication, add the appliance's IP address to the proxy server's exception list.

7. To use an external SMTP server, select **Enable SMTP Server** in the *Email Configuration* section, then specify SMTP server options:

| Option | Description |
|---|---|
| **Server** | Specify the hostname or IP address of an external SMTP server, such as **smtp.gmail.com**. External SMTP servers must allow anonymous (non-authenticated) outbound email transport. Ensure that your network policies allow the appliance to contact the SMTP server directly. In addition, the mail server must be configured to allow the relaying of email from the appliance without authentication. If you specify an IP address, enclose the address in brackets. For example `[10.10.10.10]`. |
| **Port** | Enter the port number to use for the external SMTP server. For standard SMTP, use port 25. For secure SMTP, use port 587. |
| **Login** | Enter the username of an account that has access to the external SMTP server, such as **your_account_name**@gmail.com. |
| **Password and Confirm Password** | Enter the password of the specified server account. |

8. Test the SMTP configuration.
    a. Click **Test Connection**.
    b. In the *Connection Test SMTP* dialog box that appears, type the email address to which you want to send a test email using the newly configured SMTP server, and click **Send Test Email**.

**The *Connection Test SMTP* dialog box refreshes, showing the test results. status of the email operation. If the test fails, verify your configuration, and try again.**

9. Click **Save**.

   **The appliance reboots. Total reboot downtime is one to two minutes, provided that the changes result in a valid configuration.**

10. If you changed the appliance IP address, go to the new address to display the Administrator Console login page.

# Configure local routing tables

Configure local routing tables to enable the appliance to route traffic through multiple gateways on a network.

Local routing tables are useful when the physical appliance is located in one office, and managed devices are located in a different location. For example, if the appliance is located in Texas, and managed devices are located in California, the appliance would serve devices on the Texas subnet. Using the a local routing table, the appliance could be pointed to the network in California, so that it could host the California devices as well as the Texas devices.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Local Routing Table** to display the *Local Routing Table Settings* page.
3. Click the **Add** button to add an entry:  .
4. Specify the following settings:

| Option | Description |
|---|---|
| **Name** | Enter a name for the route. |
| **Destination** | Enter the IP address or network for the destination with which you want your appliance to communicate. |
| **Subnet Mask or CIDR** | Enter the subnet mask of the specified network. For example: `24`, `255.255.240.0`. This is applied to the host. |
| **Gateway** | Enter the IP address of the router that routes traffic between the appliance and the destination network. |

5. Click **Save** at the end of the row to save the entry.
6. Click **Save and Reboot** at the bottom of the page to save all changes.

   **A warning appears indicating that the Apache™ service needs to be restarted.**

7. Click **OK** to continue.

# Configure local web server settings and allow access to hosts

You can configure local web server settings to specify an allow list of hosts that are allowed to access the Administrator Console, System Administration Console, and the User Console. After you create the allow list, access is restricted to the hosts on the allow list.

**NOTE:** After an IP address or domain name is added to the *Allow List*, only that IP address or domain has access. All others are blocked.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Access Control List** to display the *Access Control List Details* page.
3. Specify the following options:

| Option | Description |
|---|---|
| **No access restrictions** | Select this option to allow access from any web address. |
| **Restrict access as specified below** | Select this option to restrict access to web addresses on the Allow List. To enable access to IP addresses on the appliance's subnet in addition to the specified destinations, select **Allow all IP addresses in the same subnet as the appliance**. |

4. In the *Allow List* section, click the **Add** button to add an entry: +.
5. Specify the following options.

| Option | Description |
|---|---|
| **Destination** | Specify the destination:<br>• **adminui**: This is the Administrator Console, Admin level. An allow list of IP addresses and/or host names who can log in to `http://`**appliance_hostname**`/admin`.<br>• **userui**: This is the User Console. An allow list of IP addresses and/or host names who can log in to `http://`**appliance_hostname**`/user`.<br>• **systemui**: This is the System Administration Console (available only if the Organization component is enabled on the appliance). An allow list of IP addresses and/or host names who can log in to `http://`**appliance_hostname**`/system`.<br>• **api**: This is the appliance API. An allow list of IP addresses and/or host names who can access the appliance using its API, including the KACE GO app. |
| **IP Address/ Domain Name** | Provide the address to be allowed. This can be either:<br>• A domain or sub-domain name (full or partial)<br>• An IP address (full or partial) |

| Option | Description |
|---|---|
| **Subnet Mask/ CIDR** | Provide a subnet mask/CIDR (Classless Inter-Domain Routing) to be allowed. This enables a finer-grained subnet control. |

6. Click **Save** at the end of the row to save the entry.
7. Click **Save** at the bottom of the page to save all changes.

   **A warning appears indicating that the Apache service needs to be restarted.**
8. Click **OK** to continue.

**NOTE:** After an IP address or domain name is added to the *Allow List*, only that IP address or domain can access that page. All others are blocked.

# Configure security settings for the appliance

You must configure appliance security settings to enable certain capabilities such as Samba share, SSL, SNMP, SSH, database access, and FTP access.

To enable SSL, you need to have the correct SSL private key file and a signed SSL certificate. If your private key has a password, the appliance cannot restart automatically. If you have this issue, contact Quest Support at https://support.quest.com/contact-support.

- Saving changes to security settings reboots the appliance.
- In some cases, the Firefox® browser does not display the Administrator Console login page correctly after you enable access to port 443 and restart the appliance. If that happens, clear the Firefox browser cache and cookies, then try again.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Security Settings** to display the *Security Settings* page.
3. In the top section, specify the following settings:

| Option | Description |
|---|---|
| **Enable SSH** | Permit SSH logins to the appliance. When SSH is enabled, SSH encrypted communications are permitted over port 22. |
| **Enable webserver compression** | Enable the appliance to compress web pages. This compression reduces the time it takes to load Administrator Console and User Console pages in the browser. |
| **Enable SNMP READ access** | Enable unidirectional (read-only) SNMP access to managed devices on the network through port 199 using SMUX, an SNMP multiplexing protocol. See Verify port settings. |
| **SNMP Community String** | The SNMP community string that enables read-only SNMP access. The default value is public. |
| **Enable SNMP Trap monitoring** | Enable SNMP (Simple Network Management Protocol), a protocol for monitoring managed devices on a network. SNMP is supported by Dell Open Manage and many |

| Option | Description |
| --- | --- |
| | third-party products. If you do not want to receive SNMP traps from network devices, clear this option.<br>When you enable this feature on the appliance, and the related devices are also enabled for monitoring, the appliance can receive SNMP traps from the monitored network devices such as printers, projectors, and routers. This feature only applies to network devices managed through the SNMP-managed devices, such as agentless devices using SNMP connections.<br>For information on how to enable device monitoring, see Enable monitoring for one or more devices.<br>SNMP traps are messages initiated by network devices and sent to the trap receiver on the appliance. For example, a router can send a message when its power supply fails. Or, a printer initiates a message when it runs out of paper. The appliance receives these traps and generates alerts when certain pre-defined thresholds are reached.<br>• **SNMP version 1 or 2**: This version only requires a valid community string. A community string is required to allow the appliance to receive SNMP trap messages from monitored network devices. The appliance supports multiple security strings. To add a community string, open the **v1/v2** tab, click +, type the community string, and click **Save**.<br>• **SNMP version 3**: This version implements enhanced security and remote configuration features and requires a valid user name and encryption information. To add a security name, open the **v3** tab, click +, and provide the following information:<br>◦ **Security Name**: The name of the User-based Security Model (USM) account that sends the SNMP trap.<br>◦ **Engine ID**: The ID of the SNMP application engine that sends the SNMP trap.<br>◦ **Authentication Password**: The password associated with the Security Name.<br>◦ **Authentication Protocol**: The protocol used for authenticating the user: MD5 or SHA.<br>◦ **Privacy Password**: The encryption key for the data packet.<br>◦ **Privacy Protocol**: The encryption protocol: AES or DES.<br>◦ **Security Level**: Indicates the level of security:<br>▪ **authPriv**: The identity of the sender is verified and the information is encrypted.<br>▪ **authNoPriv**: The identity of the sender is verified, but the information is not.<br>▪ **noAuthNoPriv**: The identity of the sender is not verified and the information is not encrypted. |

| Option | Description |
|---|---|
| **MIB Files** | Upload vendor-specific MIB (management information base) files. A MIB file allows the trap receiver on the appliance to translate SNMP traps into human-readable messages. These files are optional.<br>• To upload a MIB file, on the *Security Settings* page, under *MIB Files*, in the *Upload MIB* area, click **Browse**, and select a MIB file.<br>• A MIB file must meet certain standards. The appliance validates every MIB file that you upload. If you upload an invalid MIB file, an error message appears along the top of the *Security Settings* page. If you do not want to validate the contents of the MIB file, select the **Skip MIB validation** check box. |
| **Enable Secure backup files** | Require username and password authentication for access to appliance backup files, which are available by entering a URL in a browser.<br>Clear this option to enable access to backup files through a URL without username or password authentication. This is useful for external process that require access. See About appliance backups. |
| **Enable backup via FTP** | Enable access to the database backup files through a read-only FTP server. This enables you to create a process on another server to access the backup files.<br>If you do not need this access, clear this option. |
| **Make FTP writable** | Enable the upload of backup files using FTP. FTP is useful for backup files that are too large for the default HTTP mechanism and cause browser timeouts. |
| **New FTP user password** | Require a password for FTP access to the backup files. |
| **Enable mDNS** | Enable the appliance to respond to multicast Domain Name System (mDNS) and DNS Service Discovery (DNS-SD) requests. This option makes it easier for users and administrators to locate the Administrator Console and User Console. If you do not need the appliance to respond to these requests, clear this option. |
| **Enable Munin access** | Enable the appliance to view server usage and metrics over time.<br>**NOTE:** This allows unrestricted, unauthenticated access to `/munin`. |
| **Enable database access** | Enable users to run reports on the appliance database using an external tool, such as Microsoft Access or Excel, over port 3306. If you do not need to expose the database in this way, clear this option.<br>**NOTE:** The appliance database can be accessed from any ODBC-compliant third-party tool if you have installed the (32bit) MySQL ODBC driver. You must select this check box if you want to use this feature. In addition, you will need to configure a data source for your MySQL ODBC driver, and provide the appliance connection information. For more information, refer to your MySQL ODBC driver documentation. |
| **Enable secure database access (SSL)** | Enable SSL access to the database and access additional SSL options. |
| **Enable remote syslog** | Enable the appliance to send limited server log data to a remote `Syslog` server. |

| Option | Description |
|---|---|
| | **NOTE:** Log data sent this way is unencrypted and uses UDP (User Datagram Protocol). Before selecting this option, review your organization's guidelines about security and network saturation. |
| **Remote Syslog Server** | Specify the fully qualified domain name (FQDN) or IP address and the port number of the remote `Syslog` server. IPv4 and IPv6 addresses are supported. If you do not provide a port number, the appliance uses 514 (UDP), the default port number for `Syslog` traffic. |

4. In the *Two-Factor Authentication* section, configure the Two-Factor Authentication (2FA) feature. 2FA provides stronger security for users logging into the appliance by adding an extra step to the login process. It relies on the Google Authenticator app to generate verification codes. The app generates a new six-digit code at regular intervals. When enabled, end users will be prompted for the current verification code each time they log in.

   **NOTE:** If you enable this feature, ensure that appliance server's clock is accurate, as well as the device running Google Authenticator. Google Authenticator relies on current time to create the token. If server's clock is not synchronized with those of the devices running Google Authenticator, token validation may fail, which may result in account lockouts.

   a. Specify the following options. They appear listed in the order of precedence, as you enable them from top to bottom. For example you can only enable 2FA for the User Console if you have previously configured 2FA for the Administrator Console.

   - **Enable Two-Factor Authentication for the System Portal**: Select this check box if you want to use 2FA for the System Administration Console. To enable 2FA for all users, select **Required for all Users**.

     **NOTE:** This option is only available on appliances with multiple organizations.

   - **Enable Two-Factor Authentication for the Admin Portal**: This option only appears if you enabled 2FA for the System Administration Console, or if your appliance has only one organization. Select this check box if you want to use 2FA for the Administrator Console. Next, specify the users that will require 2FA during login by selecting one of the following options:
     - **Required for all Users**: **Appliances with one organization only**. To enable 2FA for all users, select this option.
     - **Defined by Organization**: **Appliances with multiple organizations only**. Apply the same 2FA configuration to all users in each Organization in the Administrator Console, as applicable.
     - **Required for all Users**: **Appliances with multiple organizations only**. Enable 2FA for all users in the Administrator Console.
     - **Not required**: **Appliances with multiple organizations only**. Disable 2FA for all users in the Administrator Console.
   - **Enable Two-Factor Authentication for the User Portal**: This option only appears if you enabled 2FA for the Administrator Console. Select this check box if you want to use 2FA for the User Console. Next, specify the users that will require 2FA during login by selecting one of the following options:
     - **Defined by Organization**: Apply the same 2FA configuration to all users in each Organization in the User Console, as applicable.
     - **Required for all Users**: Enable 2FA for all users in the User Console.
     - **Not required**: Disable 2FA for all users in the User Console.

   b. Under **Transition Window**, specify the amount of time during which users who require 2FA will be able to bypass the 2FA configuration step.

**For example, if a user forgets their phone at home and is therefore unable to generate a new code, they can still access the portal during the period of time specified here.**

5. Use the settings in the *Brute Force Prevention* area to prevent multiple consecutive attacks from obtaining access to the appliance using false credentials. You can configure the number of failed authentication attempts within a specified time frame, after which the appliance prevents any logins for that user.

   **The default setting is three attempts during a five-minute period. You can change these values, as needed.**

   **When the appliance disables a user account from logging in, other users are not affected and can log in to the appliance with valid credentials.**

6. **Optional**: In the *Appliance Encryption Key* section, click **Generate Key** to generate a new encryption key. This key is used to enable Quest Support to access your appliance for troubleshooting using a tether. It is not necessary to generate a new key unless you believe that the current key has been compromised. See Enable a tether to Quest KACE Support.

   **The time stamp shows the time the key was generated.**

7. In the *Single Sign On* section, specify authentication settings:

| Option | Description |
|---|---|
| **Disabled** | Prevent the appliance from using single sign on. Single sign on enables users who are logged on to the domain to access the appliance Administrator Console and User Console without having to re-enter their credentials on the appliance login page. |
| **Active Directory** | Use Active Directory for authentication. Active Directory uses the domain to authenticate users on the network. See Using Active Directory for single sign on. |

8. In the **Samba** section, specify the following settings:

| Option | Description |
|---|---|
| For appliances with the Organization component enabled:<br>**Enable Organization File Shares**<br>For appliances without the Organization component:<br>**Enable File Sharing** | Use the appliance's client share to store files, such as files used to install applications on managed devices.<br>The appliance's client share is a built-in Windows file server that can be used by the provisioning service to assist in distributing the Samba client on your network. Quest recommends that this file server only be enabled when you perform application installations on managed devices.<br>**NOTE:** If the Organization component is enabled on your appliance, you can select additional file sharing options for each organization. See Enable file sharing at the System level. |

| Option | Description |
|---|---|
| **Samba minimum protocol**, **Samba maximum protocol** | Select the minimum and maximum Samba protocol, as required. The following options are available in each setting:<br>• **SMB2**: Re-implementation of the SMB protocol. Used by Windows Vista and later versions of Windows. SMB2 has sub protocols available. By default SMB2 selects the SMB2_10 variant.<br>• **SMB2_02**: The earliest SMB2 version.<br>• **SMB2_10**: Windows 7 SMB2 version.<br>• **SMB2_22**: Early Windows 8 SMB2 version.<br>• **SMB2_24**: Windows 8 beta SMB2 version.<br>• **SMB3**: Re-implementation of the SMB2 protocol. Used by Windows 8. SMB3 has sub protocols available. By default SMB3 uses the SMB3_11 variant.<br>• **SMB3_00**: Windows 8 SMB3 version (similar to SMB2_24).<br>• **SMB3_02**: Windows 8.1 SMB3 version.<br>• **SMB3_10**: Early Windows 10 technical preview version.<br>• **SMB3_11**: Windows 10 technical preview version. |
| **Require signing** | Enables signing in for the Samba protocol. |
| **Disable Guest Access** | Disables Samba guest access. |
| **Require NTLMv2 to appliance file shares** | Enable NTLMv2 authentication for the appliance files shares. When this is enabled, managed devices connecting to the appliance File Shares require support for NTLMv2 and they authenticate to the appliance using NTLMv2. Although NTLMv2 is more secure than NTLM and LANMAN, non-NTLMv2 configurations are more common and this option is usually turned off. Enabling this option disables **lanman auth** and **ntlm auth** on the Samba server. NTLMv2 Levels 1-4 are supported. If you need NTLM v2 Level 5, consider manually provisioning the KACE Agent. See Manually deploying the KACE Agent. |
| **Require NTLMv2 to off-board file shares** | Force certain appliance functions that are supported through the Samba client, such as Agent Provisioning, to authenticate to off-board network file shares using NTLMv2. Even though NTLMv2 is more secure than NTLM and LANMAN, non-NTLMv2 configurations are more common and this option is usually disabled. Enabling this option enables the **client ntlmv2 auth** option for Samba client functions. |

9. **Optional**: In the *SSL* section, specify SSL settings:

**IMPORTANT: Enabling SSL is a one-way automatic shift for managed devices. Devices must be reconfigured manually if you disable SSL.**

| Option | Description |
|---|---|
| **Enable Port 80 access** | Enable access to the appliance over port 80.<br>If you disable port 80 access, contact Quest Support to adjust the Agent deployment scripts to handle SSL. |
| **Enable Forward port 80 to port 443** | When you verify that SSL is working as expected, you can enable the forwarding of all communication from port 80 to port 443. To do that, select this check box. |

| Option | Description |
|---|---|
| **Enable SSL** | Enable managed devices to connect to the appliance using SSL (HTTPS).<br>Enable this setting only after you have properly deployed the appliance on your LAN in non-SSL mode.<br>To enable SSL, you need to load an SSL certificate as described in step 10. |

10. To load an SSL certificate, do one of the following:
    - If your SSL certificate and private key are in Privacy Enhance Mail (PEM) format, similar to those used by Apache-based web servers:
        1. Select **Upload PEM SSL Certificate**.
        2. In the *SSL Private Key File* and *SSL Certificate File* fields, select the private key and certificate files.
        3. If you want to enable and upload intermediate SSL certificates (also in PEM format), select **Enable Intermediate SSL Certificate**. Intermediate SSL certificates are signed certificates provided by certificate issuers as proxies for root certificates.
    - If your certificate is in PKCS-12 format:
        1. Select **Upload PKCS-12 SSL Certificate**.
        2. In the *PKCS-12 File* field, select the file.
        3. In the *Password for PKCS-12 file* field, type the password for the PKCS-12 file.
    - To use the Let's Encrypt service for SSL certificates:
        1. Click **Apply Let's Encrypt SSL Certificate**. Let's Encrypt is a free, automated, and open certificate authority (CA). When you get a certificate from Let's Encrypt, their servers validate that you control the domain names in that certificate using a challenge.

           **NOTE:** The HTTP-01 challenge can only be done on port 80. Specify arbitrary ports makes the challenge less secure, and it is therefore not allowed by the Automatic Certificate Management Environment (ACME) standard. For that reason, the appliance must run on a public-facing box with port 80 open for inbound communication, and a publicly-resolvable DNS. For more details, visit https://letsencrypt.org/docs/challenge-types/.
        2. In the *Email Address* field, provide an email address. While Let's Encrypt certificates periodically expire, the appliance uses an automated process to update the certificate before its expiration. The address is used for communication with Let's Encrypt in an unlikely event the certificate expires. You must have a Let's Encrypt account registered using this email address.
        3. Select the check box to agree with the terms of service.
    - To generate certificate requests or load self-signed certificates:
        1. Click **Generate CSR (Certificate Signing Request) or Self-Signed SSL Certificate**.
        2. In the area that appears, click **SSL Certificate Form**. Follow the instructions in Generate an SSL certificate.
11. In the *Secure Attachments in Service Desk* section, choose whether to add security for files that are attached to Service Desk tickets:
    - Select the check box to enable security for files attached to tickets. If you choose this option, users can access files attached to tickets only from within the appliance Administrator Console or User Console.
    - Clear the check box to enable users to access files by clicking ticket links from outside the Administrator Console or User Console.
12. Click **Save and Restart Services** to save changes and restart the appliance.

**NOTE:** In some cases, the Firefox browser does not display the Administrator Console login page correctly after you enable access to port 443 and restart the appliance. If that happens, clear the Firefox browser cache and cookies, then try again.

# Configure Active Directory as the single sign on method

Active Directory single sign on enables users who are logged on to the domain to access the appliance Administrator Console and User Console without having to re-enter their logon credentials each time.

Before you connect the appliance to an Active Directory server, verify that:

- Network and DNS settings are configured to enable the appliance to access the Active Directory server. See Change appliance network settings.
- The time settings on the Active Directory server match the time settings on the appliance. For information on setting the time on the appliance, see Configure appliance date and time settings.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. In the *Single Sign On* section of the *Security Settings* page, select **Active Directory**, then provide the following information:

| Option | Description |
|---|---|
| **Domain** | The host name of the domain of your Active Directory® server, such as example.com. |
| **Username** | The user name of the administrator account on the Active Directory server. For example, username@example.com. |
| **Password** | The password of the administrator account on the Active Directory server. |
| **Computer Object Container** | The name of the computer object container of the administrator account on the Active Directory server. |
| **Computer Object Name** | The name of the computer object container of the administrator account on the Active Directory server. |
| **Service Account Container** | The name of the service account container of the administrator account on the Active Directory server. |

3. Click **Join**.

**The appliance performs the following tests, which require read-only permission, to determine whether the domain is configured correctly to allow the appliance to join the domain:**

- Check for supported operating system and correct operating system patches
- Check for sufficient disk space to install QAS
- Check that the hostname of the system is not 'localhost'
- Check if the name service is configured to use DNS
- Check resolv.conf for proper formatting of name service entries and that the host can be resolved
- Check for a name server that has the appropriate DNS SRV records for Active Directory
- Detect a writable domain controller with UDP port 389 open
- Detect Active Directory site if available
- Check if TCP port 464 is open for Kerberos kpasswd
- Check if UDP port 88 and TCP port 88 are open for Kerberos traffic
- Check if TCP port 389 is open for LDAP
- Check for a global catalog server and if TCP port 3268 is open for communication with global catalog servers
- Check for a valid time skew against Active Directory
- Check for the QAS application configuration in Active Directory
- Check if TCP port 445 is open for Microsoft CIFS traffic

These tests do not need write access and they do not check for permission to write to any directory. In addition, these tests do not verify username and password credentials. If the credentials are incorrect, the appliance might not be able to join the domain even if the tests are successful.

A message appears stating the results of the test. To view errors, if any, click **Logs**, then in the *Log* drop-down list, select **Server Errors**.

4. **Optional**: Select **Force Join** to join the server to ignore errors and join the domain.
5. Click **Save and Restart Services**.

When users are logged in to devices that are joined to the Active Directory domain, they can access the appliance User Console without having to re-enter their credentials. If users are on devices that are not joined to the Active Directory domain, the login window appears and they can log in using a local appliance user account. See Add or edit System-level user accounts.

**NOTE:** To use single sign on with Microsoft Edge and Firefox browsers, users must configure their browser settings to use the appropriate authentication. See Configuring browser settings for single sign on.

# Generate an SSL certificate

You can generate a self-signed SSL certificate, or generate a certificate signing request for third-party certificates, using the Administrator Console.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Security Settings** to display the *Security Settings* page.
3. In the *SSL* section, click **Enable SSL**.

   **Additional SSL options are displayed.**
4. Click **Generate CSR (Certificate Signing Request) or Self-Signed SSL Certificate**, then click **SSL Certificate Form** to display the *SSL Certificate Form* page.

   **NOTE:** If a certificate signing request has previously been generated, it appears on the page. To generate a new request, you need to update the information in the *Configure* section, then click **Save** before you click **Generate Self-Signed Certificate**.
5. In the *Configure* section, provide the following information:

| Option | Description |
|---|---|
| **Company Name** | The name of your company. |
| **Organization Name** | The name of your organizational unit or business group. |
| **Common Name** | The common name of the appliance you are creating the SSL certificate for. |
| **Email** | Your email address. |
| **City Name** | The name of your locality. |
| **State or Province Name** | The name of your state or province. |
| **Country Name** | The name of your country. |

6. Click **Save**.

   **If this is the first time the *SSL Certificate Form* has been saved, the *Certificate Signing Request* section appears. If the form has previously been saved, the *Certificate Signing Request* section is updated.**
7. Do one of the following:
   - **To generate a certificate using a third-party certificate issuer:**
     1. Copy all of the text in the *Certificate Signing Request* section, including the lines `"-----BEGIN CERTIFICATE REQUEST-----"` and `"-----END CERTIFICATE REQUEST-----"` and everything in between, then send it to the certificate issuer or the person who provides your company with web server certificates.
     2. When you receive a certificate from the third party, return to the *Security Settings* page and upload the certificate. See Configure security settings for the appliance.
   - **To generate a self-signed certificate:**

1. Click **Generate Self-Signed Certificate** to generate and display the certificate below the *Certificate Signing Request* section.
2. Click **Deploy Self-Signed Certificate**, then click **Yes**.
3. On the *Security Settings* page, click **Save and Restart Services**.

**Self-signed certificates are converted to PEM files, named `kbox.pem`, and the files are placed in KACE Agent data folders.**

**NOTE:** Your private key appears in the *Private Key* field. It is deployed to the appliance when you deploy a valid certificate. Do not send the private key to anyone. It is displayed here in case you want to deploy this certificate to another web server.

**NOTE:** The certificate and private key for SSL are not included in the appliance's daily backups for security reasons. Retain these two files for your own records.

# Configuring Agent settings

Agent settings determine the port and security settings used by the KACE Agent. These settings are specific to the Agent infrastructure and do not affect other appliance configuration settings or runtime operations.

**NOTE:** Changing Agent settings temporarily interrupts communications between the appliance and the Agents installed on managed devices, so use caution. For more information, contact Quest Support at https://support.quest.com/contact-support.

## About Konea

Konea is a component that enables the communication between the KACE Agent, which is installed on Agent-managed devices, and the appliance.

Konea provides optimized real-time communications for systems-management operations.

## Configure Agent settings

You can configure KACE Agent settings on the appliance. These settings are System-level settings. If the Organization component is enabled on the appliance, Agent settings apply to all organizations.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Agent Settings** to display the *Agent Settings* page.
3. Specify the following settings:

| Option | Description |
|---|---|
| **Allow legacy agents (pre-11.0)** | This option only appears if upgrading an existing appliance to version 11.0. Leave this option enabled only if you want to continue using legacy agents without a secure connection which reduces the overall security of the appliance. Quest recommends upgrading all legacy agents to the latest version. Disabling this option deactivates all of your pre-11.0 agents, permanently preventing them from connecting to the appliance until a secure connection is configured. When this option is disabled, it can no longer be enabled. |

| Option | Description |
|---|---|
| | For more information about configuring agents to use a secure connection, see Registering KACE Agent with the appliance. |
| | **NOTE:** The following settings are not required for KACE Agents version 11.0 pr later, as all communication is carried over through the Konea tunnel. For more information about Konea, see About Konea. |
| **Require SSL For File Transfers** | Configure the KACE Agent to use secure connections. SSL (Secure Sockets Layer) connections allow the Agent to establish encrypted link to ensure that all data passed from and to the Agent remains private and integral.<br>**IMPORTANT: After changing this setting, you must restart the Agent manually using the AMPTools restart command, to ensure these changes are reflected on the Client machine.** |
| **Verify SSL Certificates** | Verify SSL certificates prior to establishing a connection. An SSL certificate contains a public key used to encrypt and information about its owner identity.<br>**IMPORTANT: After changing this setting, you must restart the Agent manually using the AMPTools restart command, to ensure these changes are reflected on the Client machine.** |
| **CA Certificate Bundle File** | Some environments use custom cURL (Client URL) CA (certificate authority) certificates during agent-server communication. This can be used to verify SSL certificates that are signed by an authority that is not referenced in the default agent bundle.<br>• To upload your custom cURL CA bundle, click **Choose File**. The certificate bundle file must be in `.PEM` format. The appliance verifies the file contents. If the file is valid, it replaces the existing or the default bundle (`cacert.pem`), as applicable. In case the file is invalid, an error message appears.<br>• To revert to the default certificate, click **Reset to Default**.<br>**NOTE:** This option is only available after uploading a valid custom CA bundle. |

4. Click **Save and Restart Services** to save the settings and restart the messaging protocol processor.

**Related topics**

Configure security settings for the appliance

Troubleshooting appliance issues

**Optional**: Configure Agent communication settings, which determine the frequency at which Agents communicate with the appliance. See Managing Agent communications.

# Configuring session timeout and auto-refresh settings

Session timeout is a System-level setting that specifies the amount of inactive time that can pass before users are automatically logged out of the Administrator Console or User Console. Auto-refresh settings are user-level settings that determine the frequency with which console pages are refreshed.

# Set session timeout

You can configure session timeout to meet your security requirements.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **General Settings** to display the *General Settings* page.
3. In the top section, configure the session timeout:

| Options | Description |
|---|---|
| **Session Timeout** | Set the number of inactive hours to allow before closing user sessions and requiring users to log in again. The default is 1. The User Console and Administrator Console have Timeout Session counters to alert users of this time limit. Only periods of inactivity are counted. The counter restarts when the user performs any action that causes the console to interact with the appliance server, such as refreshing a window, saving changes, and changing windows. When a session reaches 60 seconds before the timeout, a message box appears, allowing you to extend the session, or to log off. Once the counter reaches the limit, the user is logged out, unsaved changes are lost, and the login screen appears. The Timeout Session counter appears in the upper right of each console. |

4. Click **Save and Restart Services**.

# Set auto-refresh properties

You can set auto-refresh to show the latest results on list pages, or you can turn auto-refresh off so that pages are refreshed only when they are reloaded in the browser.

Setting the refresh frequency to 30 seconds or less is useful for pages that display status, such as the *Provisioning Results* page and the *Devices* page. On other pages, such as the *Software Catalog* page, a longer refresh rate, or turning auto refresh off, might be more appropriate, because these pages can take longer to refresh.

Auto-refresh settings are page-specific and user-specific. The settings for each page and each user account are separate.

1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
2. Go to a page that has information to be refreshed, such as **Inventory** > **Devices**.

   **The *Devices* page appears.**
3. In the **Auto Refresh** drop-down list, above the list to the right, select a frequency.

   **The list is updated according to the selected frequency.**
4. Click the **Refresh** button in the top-right corner of the page to refresh the page immediately.
5. **Optional**: In the **Auto Refresh** drop-down list, above the list to the right, select **OFF** to turn off auto-refresh.

   **Auto-refresh is disabled. Information on the page is no longer updated automatically.**

# Configuring locale settings

Locale settings determine the language used for text in the Command Line Console, Administrator Console, and User Console.Locale settings determine the formats used for date and time information displayed in the Administrator Console and User Console. All text in the interfaces is displayed in English regardless of locale settings.

The locale options available through your license agreement. See View the appliance version, model, and license information.

## How locale settings are applied

Locale settings are applied in a particular order.

When choosing the locale for text in the Command Line Console, Administrator Console, and User Console, the appliance uses the following priority:

1. **User**: If the user locale is set, use it.
2. **Organization**: If the user locale is not set, use the organization setting (available only if the Organization component is enabled on the appliance).
3. **Browser**: If neither the user nor organization locales are set, use the browser setting.
4. **System** (Command Line Console): If the user, organization, and browser locales are not set, use the System setting.
5. **Default**: If none of the preceding options are set, use the default locale (English).

## Configure locale settings for the Administrator Console and the Command Line Console

You can configure the locale setting for the Administrator Console at the System-level. This also controls the locale of the Command Line Console, which is accessed through the `konfig` user account.

**Locale settings determine the formats used for date and time information displayed in the Administrator Console. All text in the interface is displayed in English regardless of locale settings. Locale settings also determine the date and time formats used in email sent from the Service Desk.**

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **General Settings** to display the *General Settings* page.
3. If the Organization component is enabled on your appliance, do the following:
   a. Select a locale in the *Default Locale* drop-down list in the top section.
   b. Click **Save and Restart Services** at the bottom of the page.
4. If the Organization component is not enabled on your appliance, do the following:
   a. In the *Locale Settings* section, select a locale from the *Organization Locale* drop-down list.
   b. In the *Locale Settings* section, select a locale from the Command Line Console drop-down list.
   c. Click **Save and Restart Services**.

The locale you selected is used for the Administrator Console and the Command Line Console.

# Configure locale settings for the User Console

The appliance supports several locales. The Administrator Console, System Administration Console, and online help can be displayed in English, French, German, Japanese, Portuguese (Brazil), and Spanish.

In addition to these languages, you can translate the User Console into other non-supported locales, such as Afrikaans (South Africa), as needed. When you translate the User Console to a non-supported language, its help contents appear in English, while other elements of the appliance, such as the Administrator Console, System Administration Console, and the associated online help, are displayed in the selected language.

By default, the browser locale determines the language in which the User Console is displayed. When the User Console is translated to another languages and properly configured (as described below), any users whose browsers use that locale display the User Console in the translated language.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Localization** to display the *User Console Localization Settings* page.
3. Export the text strings associated with the locale from which you want to translate to a Gettext portable object (PO) file, along with a portable object template (POT) for translation. For more information about Gettext PO files, see https://www.gnu.org/software/gettext/manual/html_node/PO-Files.html.
   a. On the *User Console Localization Settings* page, under *Export Gettext PO (portable object) File*, click **Export Locale**, and select the locale from which you want to translate. The list that appears includes all of the supported languages, as well as any languages to which you previously translated the User Console.
   b. Click **Export**.

   After a few moments, a ZIP file with the following contents is available for download:
   - A PO (portable object) file contains all of the User Console text strings that exist in your selected locale.
   - A POT (portable object template) file contains a template file, used to generate the empty PO file using the GetText utilities (optional).
4. Translate the User Console text strings, as required, and create a PO file.
5. Import the translated User Console strings.

   **You can use a PO file editor to translate the strings in the PO file. For more information, see:**
   - **GNU gettext utilities documentation**: https://www.gnu.org/software/gettext/manual/html_node/index.html
   - **GNU Web Translators Manual**: https://www.gnu.org/software/trans-coord/manual/web-trans/html_node/index.html#SEC_Contents https://www.gnu.org/software/gettext/manual/html_node/PO-Files.html
   - **PO File Format**: https://www.gnu.org/software/trans-coord/manual/web-trans/html_node/PO-Editors.html
   - **Additional information about editing PO (portable object) files with editor suggestions**: https://www.gnu.org/software/trans-coord/manual/web-trans/html_node/PO-Editors.html
     a. Under *Import Gettext PO (portable object) File*, click **Import Locale**, and select the locale you want to associate with the PO file you are importing. This is the locale to which the User Console is translated using the translations from the imported PO file when the browser locale matches.

b. Under *Translated PO (portable object) File*, click **Choose File**, and navigate to the translated PO file.
c. Click **Import**.

6. If you want to delete any locales that you previously imported, under *Delete an Uploaded Locale*, click *Delete Locale*, and select the locale that you want to delete. Click **Delete**.

# Configure locale settings for organizations

If the Organization component is enabled on your appliance, you configure locale settings for each organization separately.

**Locale settings determine the formats used for date and time information displayed in the Administrator Console and User Console. All text in the interfaces is displayed in English regardless of locale settings. Locale settings also determine the date and time formats used in email sent from the Service Desk.**

1. Go to the *General Settings* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **General Settings**.
2. If the Organization component is enabled on your appliance, do the following:
   a. In the *Locale Settings* section, select a locale in the *Organization Locale* drop-down list.
   b. Click **Save and Restart Services** at the bottom of the page.
   c. If you have multiple organizations, repeat the preceding steps for each organization.
3. If the Organization component is not enabled on your appliance, do the following:
   a. In the *Locale Settings* section, select a locale from the *Organization Locale* drop-down list.
   b. In the *Locale Settings* section, select a locale from the Command Line Console drop-down list.
   c. Click **Save and Restart Services**.

The selected locale is applied. Organization users who log in to the Administrator Console and User Console see the formats for this locale, provided that the browser settings are also set to display the locale. However, user locale settings take precedence over organization locale settings.

# Configure locale settings for users

You can configure locale settings for each user. User locale settings take precedence over organization and System-level locale settings.

Locale settings determine the formats used for date and time information displayed in the Administrator Console and User Console. All text in the interfaces is displayed in English regardless of locale settings.

1. Go to the *User Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **Users**.
   c. Click the name of a user.
2. In the *Locale* drop-down list, select a locale.
3. Click **Save**.

The locale you selected is used when the user logs in to the Administrator Console or User Console, provided that the browser settings are also set to display the locale. User locale settings take precedence over the locale settings of the user's organization.

# Configuring the default theme

In a default installation, the Administration Console appears in a default Light theme for every new user. Two additional themes are available: the Dark and Hybrid themes. You can change the default theme for the appliance. If the appliance theme is not suitable for your use, simply choose a different theme for your profile.

For example, if the Light theme is set by default for the appliance on the System level, and you associate the Dark theme with your user profile, the Dark theme is applied each time you log in.

## Configure the default theme for the appliance

In a default installation, the appliance is configured to use the Light theme. You can choose a different theme as the default appliance theme, as needed.

1. Go to the appliance *Control Panel*:
    - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
    - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **General Settings** to display the *General Settings* page.
3. On the *General Settings* page that appears, under *Themes*, click **Default appliance theme**, and choose one of the following options: **Light**, **Hybrid**, or **Dark**.

    **When you choose the Light or Hybrid theme as the default appliance theme, the login page appears with a white background. A dark background is applied when the Dark theme is applied as the default appliance theme. The color of the login screen always reflects the configured appliance theme, not the theme associated with your user account. For example, if you choose the Dark theme in the Administrator Console, this theme becomes associated with your user account and is applied each time you log in. However if the appliance uses the Light theme by default, your login screen always appears with a white background. After a successful login, the Dark theme is applied.**

    **NOTE:** Reports always appear with a white background, regardless of which theme is selected.

    **NOTE:** For newly created users, the Administrator Console uses the default theme. This can be changed on the next login. For more information, see Configure the default theme for a user.

## Configure the default theme for a user

In a default installation, the Light theme is applied to each user profile. You can choose a different theme for your user profile, as needed. For example, if the Light theme is set by default for the appliance on the System level, and you associate the Dark theme with your user profile, the Dark theme is applied each time you log in.

1. Do one of the following:
    - **Log in to the appliance Administrator Console, `https://appliance_hostname/admin`, where appliance_hostname is the host name of your appliance. Or, if** *Show organization menu in admin*

*header* **is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.**

- **Log in to the appliance System Administration Console, `https://appliance_hostname/system`, where appliance_hostname is the host name of your appliance, or select System from the drop-down list in the top-right corner of the page.**
- **Log in to the applianceUser Console, `https://appliance_hostname/user`, where appliance_hostname is the host name of your appliance, or select User Console from the drop-down list in the top-right corner of the page.**

2. From the drop-down list in the top-right corner of the page, select **My Profile**.

   **The** *User Profile* **dialog box appears.**
3. In the *User Profile* dialog box, on the *Profile* tab, click **Theme**, and select a theme that you want to associate with your user account: **Light**, **Dark**, or **Hybrid**.

   **The theme you select this way becomes associated with your user account and is applied each time you log in. You can also configure the default theme for the appliance. For more information, see Configure the default theme for the appliance.**

# Configure data sharing preferences

Configure data sharing preferences at the System level. Data sharing preferences determine how much of your appliance information is shared with Quest. In addition, data sharing preferences determine whether information from ITNinja is displayed in the Administrator Console.

To validate your product license, Quest collects minimal license-related information, such as the MAC Address of the appliance, the version of the appliance software, the license key, and the number of managed devices, regardless of the data sharing options selected in this section.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **General Settings** to display the *General Settings* page.
3. In the *Share With Quest* section, select from the following options:

| Option | Description |
|---|---|
| **Share summary usage data...** | (Recommended) Share summary information with Quest. This information includes appliance status, uptime, and load averages, as well as the number of devices, Managed Installations, and applications being managed by the appliance. This option is recommended because it provides additional information to Quest Support if you need assistance. In addition, data shared with Quest is used when planning product enhancements. |
| **Share detailed usage data...** | (Recommended) Share detailed information with Quest and share anonymous information with ITNinja.com. This information includes Agent and appliance crash reports, user interface usage statistics, and inventory information, such as application titles. Quest uses this information to help improve the Software Catalog, and ITNinja uses anonymous data to identify relevant content on http://www.itninja.com for dynamic feeds to the appliance Administrator Console.<br>ITNinja.com is a community website where IT professionals can share information and research on a wide variety of systems management and deployment topics. The ITNinja feed is a feature that dynamically displays software deployment tips and other |

| Option | Description |
|---|---|
| | contextual information on relevant pages in the appliance Administrator Console. To enable the ITNinja feed, you need to select **Share detailed Usage data...**. This setting shares information anonymously with ITNinja. The ITNinja feed is available only if **Share Summary Usage Data...** is selected, and it is available only on pages related to software or deployment, such as the software, Managed Installation, and File Synchronization detail pages. The feed is not available on *Software Catalog* detail page.<br>Clear this option to prevent the appliance from sharing inventory data with the ITNinja community. However, clearing this option does not remove any information that has already been shared. For more information, contact Quest Support. |

4. Click **Save and Restart Services**.

# About DIACAP compliance requirements

You can configure the appliance to support regulations, such as DIACAP (Department of Defense Information Assurance Certification and Accreditation Process).

To comply with DIACAP, administrators perform the following tasks:

- Enable the Acceptable Use Policy. See Enable or disable the Acceptable Use Policy.
- Disable SSH and database access. See Configure security settings for the appliance.
- Disable Samba file sharing. See Configure security settings for the appliance.

## Enable or disable the Acceptable Use Policy

To comply with policies and regulations, such as DIACAP (Department of Defense Information Assurance Certification and Accreditation Process), you can display an Acceptable Use Policy to users when they access the Administrator Console, User Console, or Command Line Console, or log in using SSH or FTP.

The Acceptable Use Policy is a System-level setting. If the Organization component is enabled on your appliance, you enable or disable the Acceptable Use Policy at the System level for all organizations. You cannot enable or disable the policy for individual organizations.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **General Settings** to display the *General Settings* page.
3. In the *Acceptable Use Policy* section, select policy settings:

| Option | Description |
|---|---|
| **Enabled** | Enable the appliance to display your policy, and require users to accept the terms of your policy, when they access the Administrator Console, User Console, or Command Line Console, or log in using SSH or FTP. |
| **Title** | The heading of the policy to be displayed on the login page of the User Console. |

| Option | Description |
|---|---|
| **Message** | Details of the policy, which are displayed below the *Title* on the login page. Users must agree to the terms of the policy before they can log in to the User Console. |

4. Click **Save and Restart Services**.

   **When users go to the Administrator Console, User Console, or Command Line Console, or log in using SSH or FTP, they must first agree to the Acceptable Use Policy before they can log in.**

   **NOTE:** If single sign on is enabled, the login page is not displayed, so users do not see the Acceptable Use Policy before being logged in automatically. See About single sign on (SSO).

# Configuring Mobile Device Access

Mobile Device Access enables you to interact with the appliance using the KACE GO app.

KACE GO is an app that enables administrators to access Service Desk tickets, inventory information, and application deployment features from their smart phones or tablets. The app also allows non-admin users to submit Service Desk tickets, view the status of submitted tickets, and read Knowledge Base articles from their mobile devices. You can download KACE GO from the Apple App Store for iOS devices, or from the Google Play store for Android devices.

**NOTE:** KACE GO is only available in English.

To use Mobile Device Access, you must enable mobile device access for the appliance and for the users, and download and install KACE GO on a mobile device.

## Enable Mobile Device Access for the appliance

By default, Mobile Device Access is disabled. To enable users to access the appliance using the KACE GO app, you must first enable Mobile Device Access for the appliance.

Mobile Device Access is enabled at the System level. If the Organization component is enabled on your appliance, and you enable Mobile Device Access, the feature is enabled for all organizations.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **General Settings** to display the *General Settings* page.
3. In the top section, select the *Enable mobile device access* check box.
4. Download the KACE GO app.
   a. Click **Get Mobile App**.

      **A dialog box appears, allowing you to download KACE GO. The app is available for iOS and Android platforms from their respective app stores.**

      **TIP:** You can also access this dialog box from the help pane. For more information, see Access product documentation.

   b. Click the link for your mobile device OS, as needed, to download the app.

**For more information about downloading and configuring KACE GO, see Download and use KACE GO.**

5. Click **Save and Restart Services**.

   **Mobile Device Access is enabled on the appliance. Before users can access the appliance using the KACE GO app, however, you must enable Mobile Device Access for their accounts. See Enable Mobile Device Access for users.**

   If the Organization component is enabled on your appliance, enable Mobile Device Access for user accounts at the Organization or Admin level. Mobile Device Access cannot be enabled or disabled for user accounts at the System level.

# Enable Mobile Device Access for users

After you enable Mobile Device Access for the appliance, you must enable access for users. If the Organization component is enabled on your appliance, you enable access for users in each organization separately.

1. Go to the *User Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **Users**.
   c. Click the name of a user.
2. Select the **Mobile Device Access** check box.

   **TIP:** If the Mobile Device Access check box is not displayed, verify that Mobile Device Access is enabled for the appliance.

3. Click **Save**.
4. To enable Mobile Device Access for multiple users:
   a. Select the check boxes for the users on the *Users* page.
   b. Select **Choose Action** > **Mobile Device Access** > **Enable**.

      **Mobile Device Access is enabled.**

**Related topics**

Enable Mobile Device Access for the appliance

The selected users can download the KACE GO app from the Apple App Store or from Google Play.

# Download and use KACE GO

You can download KACE GO to your smart phone or tablet from the Apple App Store for iOS devices, or from the Google Play store for Android devices.

1. On your mobile device, go to the Apple App Store or Google Play, and search for **KACEGO**.
2. Download and start the app.
3. If prompted, choose whether to enable Push Notifications.

   **When Push Notifications are enabled, the app sends notifications for Service Desk tickets to the mobile device. These notifications are based on the Service Desk Email on Events configuration.**

4. Provide the following information and choose initial settings:

| Option | Description |
|---|---|
| **Appliance URL** | The IP address or fully qualified domain name of the appliance. |

| Option | Description |
|---|---|
| **User name and Password** | The username and password of an account that has Mobile Device Access enabled. |
| **Save Password** | Enable the app to remember your password on the device. If you choose this option, Quest requires that you create a PIN (personal identification number) for security. KACE GO does not cache or save user data unless you select **Save Password**. |
| **Use SSL** | Enable SSL communications between the device and the appliance. To use this setting, SSL must be enabled on the appliance. If SSL is not enabled on the appliance, and you select **Use SSL**, the login fails. |

For more information, see the Help Center in the KACE GO app or go to https://quest.com/products/kace-systems-management-appliance/.

**Related topics**

Configure email triggers

Configure security settings for the appliance

# Disable Mobile Device Access on the appliance

To prevent all users from accessing the appliance using KACE GO, you can disable Mobile Device Access at the appliance or System level.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **General Settings** to display the *General Settings* page.
3. In the top section, clear the *Enable mobile device access* check box.
4. Click **Save and Restart Services**.

   KACE GO access is disabled for all users. Users who are currently logged in to the appliance using KACE GO are disconnected.

However, individual user settings are retained and reinstated if the feature is subsequently re-enabled on the appliance. For example, if Mobile Device Access was enabled for an account, and you re-enable Mobile Device Access on the appliance, Mobile Device Access is also re-enabled on the account.

# Disable Mobile Device Access for users

To prevent selected users from accessing the appliance using KACE GO, you can disable Mobile Device Access at the user level.

1. Go to the *Users* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Settings**, then click **Users**.

2. Select the check boxes next to one or more users.
3. Select **Choose Action > Mobile Device Access > Disable**.

Mobile Device Access is disabled for the selected users. If the selected users are currently logged in to the appliance using KACE GO, they are disconnected.

# Enable fast switching for organizations and linked appliances

Fast switching makes it possible to switch between interfaces without logging in to each item separately. On appliances with the Organization component enabled, these interfaces include the Admin and System levels of the Administrator Console the User Console, and linked K-Series appliances,

Fast switching is enabled by default on appliances without the Organization component enabled. In addition, the link to the User Console appears by default, provided that the logged-in user has permission to access both the Administrator Console and the User Console.

To appear in the drop-down list for fast switching, organizations must have the same **admin** account password; only those organizations whose **admin** account passwords match appear in the list. Linked appliances have similar requirements.

1. Go to the *General Settings* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **General Settings**.
2. Select the *Show organization menu in admin header* check box.

   **NOTE:** This setting is available only if the Organization component is enabled on your appliance.
3. **Optional**: Select the *Require organization selection at login* check box to require users to select an organization when they log in.

   **NOTE:** This setting is available only if the Organization component is enabled on your appliance.
4. Click **Save and Restart Services**.

   **Changes are displayed on the login page and in the top section of the Administrator Console after you log out and then log in again. The drop-down list shows the available options.**

**Related topics**

Linking Quest KACE appliances

# Linking Quest KACE appliances

Appliance linking enables you to log in to one Quest KACE appliance and access all linked appliances from the Administrator Console.

Appliance linking enables you to log in to one appliance and access all linked appliances from the drop-down list in the top-right corner of the Administrator Console, without having to log in to each appliance separately. You can link all of the Quest KACE K-Series appliances you manage.

To link appliances you need to:

- Enable fast switching on each appliance that has the Organization component enabled. See Enable fast switching for organizations and linked appliances.
- Enable linking on each K-Series appliance. See Enable appliance linking.

When you enable linking, *Names* and *Keys* are created for each appliance. You then copy and paste the *Names* and *Keys* into the *Linked Appliance Detail* page for each appliance.

You can access multiple Quest KACE appliances from the same Administrator Console, but you cannot transfer resources or information among them through linking. See Importing and exporting appliance resources.

**NOTE:** If you have different types of Quest KACE appliances, and you plan to link them, the **admin** user account for each appliance must have the same password.

# Enable appliance linking

You can enable appliance linking in the appliance or System-level General Settings. For KACE SDA instructions, see the Help for that appliance.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Link Settings** to display the *Linked Appliance Enablement* page.
3. Select the **Enable Appliance Linking** check box.
4. Provide the following information:

| Option | Description |
|---|---|
| **Name** | A unique, logical name for this appliance. This name appears in the drop-down list in the top-right corner of the page next to the login information when appliances are linked. |
| **Login Expiration** | The number of minutes to keep the link open. When this time period expires, you need to provide login credentials when switching to a linked appliance. The default is 120 minutes. |
| **Timeout** | The number of minutes the appliance waits for a remote appliance to respond to a linking request. The default is ten seconds. |

5. Select the **Enable Federation API access settings** check box.

   **NOTE:** Enabling this option allows you to configure Federation API settings for linked appliances. For more information, see Enable access to Federation API settings.
6. Click **Save** to display appliance linking information.
7. Copy the text in the *Name* field and the text in the *Key* field and paste it in a central location, such as a Notepad file.
8. Repeat the preceding steps on each appliance you want to link.

When linking is enabled on all appliances, configure the links. See Add Names and Keys to appliances.

# Add Names and Keys to appliances

To link Quest KACE appliances, add the appliance names and keys in the Administrator Console.

These instructions describe how to link KACE SMAs. For KACE SDA instructions, see the Help for that appliance.

Before you can link appliances, you need to enable linking on each appliance and copy the Name and Key of each appliance to a central location. See Enable appliance linking.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Linked Appliances** to display the *Linked Appliances* page.

   **NOTE:** If appliance linking is not enabled, you are redirected to the *Linked Appliance Enablement* page.
3. Select **Choose Action** > **New** to display the *Linked Appliance Details* page.
4. In the *Hostname* field, paste the name of the appliance that you want to link.

   **This is the name that you copied following the instructions in Enable appliance linking.**
5. Select **Disable port 80 access** to use port 443 for secure communications. Communication over both port 80 and 443 are encrypted.
6. In the *Key* field, paste the key of the appliance that you want to link.

   **This is the key that you copied following the instructions in Enable appliance linking.**
7. Click **Save** to display the *Test Connection* button.
8. Click **Test Connection** to verify the connection between the two linked appliances.

   **If the settings are configured correctly, the** *Connection Successful* **message appears.**
9. Log in to the second appliance and repeat the preceding steps to add the first appliance's *Name* and *Key* to the second appliance.
10. Click **Save** to display the **Test Connection** button.
11. Click **Test Connection** to verify the connection between the two linked appliances.

    **If the settings are configured correctly, the** *Connection Successful* **message appears.**

When you re-log in to the appliance, the other linked appliances appear on the drop-down list in the top-right corner of the page next to the login information. To switch to an appliance, select its name in the drop-down list.

# Enable access to Federation API settings

If your Environment uses Federated KACE SMAs, the Federation API Settings page allows you to enable API access for linked appliances.

The following options must be selected on the *Linked Appliance Enablement* page:

- **Enable Appliance Linking**
- **Enable Federation API access settings**

For more information, see Enable appliance linking.

1. Log in to the appliance Administrator Console , `http://`**appliance_hostname**`/admin`, then click **Settings**.
2. On the appliance *Control Panel*, click **Federation API Settings** to display the *Federation API Settings* page.
3. On the *Federation API Settings* page, select the **Enable access** check box.
4. In the *Remote Systems* area that appears, specify the level of access for each linked appliance, as required.
   a. In the row containing the appliance whose role you want to configure, click the *Role* column, and select one of the following options: **Administrator**, **Read Only Administrator**, or **User Console**.
   b. Click **Save**.
5. Click **Save** to display appliance linking information.

## Disable appliance linking

If Quest KACE appliances have been linked, you can disable linking as needed. After appliance linking is disabled, you can continue to switch to, and control, other appliances until you log off.

**NOTE:** This section explains how to disable linking on the appliance. For KACE SDA instructions, see the Help for that appliance.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://`appliance_hostname`/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://`appliance_hostname`/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Link Settings** to display the *Linked Appliance Enablement* page.
3. Clear the *Enable Appliance Linking* check box.
4. Click **Save**.

# Configuring history settings

You can configure (subscribe to) and view the history of changes made to settings, assets, and objects on the appliance.

## About history settings

The appliance enables you to configure (subscribe to) and view the history of changes to settings, assets, and objects.

- **Settings**: Tracked items include general settings as well as settings for MIA devices, patch subscriptions, and user authentication, among others. See Managing settings history.
- **Assets**: Tracked items include devices, cost centers, departments, licenses, locations, applications, vendors, and user-created Asset Types. See Managing asset history.
- **Objects**: Tracked items include alerts, labels, patch schedules, Replication Shares, reports, scripts, and applications among others. See Managing object history.

This history includes the date the change was made, the user who was logged in when the change was made, and the nature of the change. This information can help in troubleshooting system management issues, and you can export this information in CSV (comma-separated value) or custom report format.

History lists are informational only. You cannot use history lists to revert to previous states or undo changes.

# Managing settings history

You can configure (subscribe to) and view the history of changes made to settings. Configuration options differ, depending on whether the Organization component is enabled on your appliance.

- If the Organization component is not enabled: View all history lists and configuration settings under **Settings > History**. For instructions, see Configure settings history subscriptions for organizations.
- If the Organization component is enabled: View history lists and configuration settings for each organization, and for the System level, separately. For instructions, see Configure System-level settings history subscriptions with the Organization component enabled.

## *Configure settings history subscriptions for organizations*

You can configure settings history subscriptions for the appliance or, if the Organization component is enabled, for the selected organization.

1. Go to the *Settings History Configuration* page:
    a. Log in to the appliance System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page.
    b. On the left navigation bar, click **Settings**, then click **History**.
    c. In the *Subscriptions* section, click **Settings**.

    The options on this page differ, depending on whether the Organization component is enabled on your appliance. For appliances with the Organization component enabled, additional options are available at the System level.
2. In the drop-down list for history retention, select the length of time for changes to be retained by the appliance and to appear in the history list. Select **Forever** to keep all changes. Select **Disabled** to erase the existing history list and prevent the appliance from adding changes to the list.

    **IMPORTANT: Setting history retention to very long periods, such as several months or *Forever*, might result in slower page loading for items in the *Inventory* section.**
3. In the *Category and Field Selection* section, select the check boxes next to the settings you want to track; clear the check boxes next to the settings you do not want to track.
4. To select fields within a setting:
    a. With the check box for a setting selected, click the **Edit** button next to the setting: .

    **The field selection dialog appears.**
    b. Choose the fields whose history you want to track, then click **OK**.
5. Click **Save**.
6. **Optional**: If you have multiple organizations, repeat the preceding steps for each organization.

**Related topics**

Configure System-level settings history subscriptions with the Organization component enabled

## *Configure System-level settings history subscriptions with the Organization component enabled*

If the Organization component is enabled on your appliance, you can configure settings history subscriptions at the System level.

For information about organization-level history settings, see Managing settings history.

1. Go to the *Settings History Configuration* page:
    a. Log in to the appliance System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page.
    b. On the left navigation bar, click **Settings**, then click **History**.
    c. On the *History Panel* in the *Subscriptions* section, click **Settings**.
2. In the *Category and Field Selection* section, select the check boxes next to the settings you want to track; clear the check boxes next to the settings you do not want to track.
3. To select fields within a setting:
    a. With the check box for a setting selected, click the **Edit** button next to the setting:  .

    **The field selection dialog appears.**

    b. Choose the fields whose history you want to track, then click **OK**.
4. Click **Save**.

### *View settings history*

If history subscriptions are configured to retain information, you can view the history of changes made to settings.

1. Go to the appliance *Control Panel*:
    - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://`appliance_hostname`/admin`, then select Settings > Control Panel.**
    - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://`appliance_hostname`/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click *History*.
3. In the *Reporting* section, click **Settings** to display the *Settings History* page.
4. To filter the list, select **Type** or **User** in the *View By* drop-down list, which appears above the table on the right.

    **The list is redisplayed and shows only those items that match the *Type* or *User* you selected.**

## Managing asset history

You can configure (subscribe to) and view the history of changes made to asset information such as devices, cost centers, departments, licenses, locations, applications, vendors and user-created Asset Types.

### *Configure asset history subscriptions*

You can configure asset history subscriptions for the appliance or, if the Organization component is enabled, for the selected organization.

1. Go to the *Asset History Configuration* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Settings**, then click **History**.
    c. On the *History Panel* in the Subscriptions section, click **Assets**.
2. In the drop-down list for history retention, select the length of time for changes to be retained by the appliance and to appear in the history list. Select **Forever** to keep all changes. Select **Disabled** to erase the existing history list and prevent the appliance from adding changes to the list.

**IMPORTANT: Setting history retention to very long periods, such as several months or *Forever*, might result in slower page loading for items in the *Inventory* section.**

3. In the *Asset Type and Field Selection* section, select the check boxes next to the Asset Types you want to track; clear the check boxes next to the Asset Types you do not want to track.
4. To select fields within an Asset Type:
    a. With the check box for an Asset Type selected, click the **Edit** button next to an Asset Type: .

    **The field selection dialog appears.**

    b. Choose the fields whose history you want to track, then click **OK**.
5. Click **Save**.
6. **Optional**: If you have multiple organizations, repeat the preceding steps for each organization.

### *View asset history*

If history subscriptions are configured to retain information, you can view the history of changes made to assets.

1. Go to the *Asset History* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Settings**, then click **History**.
    c. On the *History Panel* in the Reporting section, click **Assets**.
2. To filter the list, select **Type** or **User** in the *View By* drop-down list, which appears above the table on the right.

The list is redisplayed and shows only those items that match the *Type* or *User* you selected.

## Managing object history

You can configure (subscribe to) and view the history of changes made to objects such as labels, patch schedules, Replication Shares, users, and other objects.

### *Configure object history*

You can configure object history subscriptions for the appliance or, if the Organization component is enabled, for the selected organization.

1. Go to the *Object History Configuration* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Settings**, then click **History**.
    c. On the *History Panel* in the *Subscriptions* section, click **Objects**.
2. In the drop-down list for history retention, select the length of time for changes to be retained by the appliance and to appear in the history list. Select **Forever** to keep all changes. Select **Disabled** to erase the existing history list and prevent the appliance from adding changes to the list.

**IMPORTANT: Setting history retention to very long periods, such as several months or *Forever*, might result in slower page loading for items in the *Inventory* section.**

3. In the *Object Type and Field Selection* section, select the check boxes next to the object types you want to track; clear the check boxes next to the object types you do not want to track.
4. To select fields within an object type:

a. With the check box for an object type selected, click the **Edit** button next to the object type:  .

The field selection dialog appears.

b. Choose the fields whose history you want to track, then click **OK**.

5. Click **Save**.
6. **Optional**: If you have multiple organizations, repeat the preceding steps for each organization.

### View object history

If history subscriptions are configured to retain information, you can view the history of changes made to objects.

1. Go to the *Objects* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **History**.
   c. On the *History Panel* in the *Reporting* section, click **Objects**.
2. To filter the list, select **Type** or **User** in the *View By* drop-down list, which appears above the table on the right.

The list is redisplayed and shows only those items that match the *Type* or *User* you selected.

## Using change history information

You can view an item's change history, search for items in change history lists, delete history records, export history records, and create reports from history records.

### View the change history of items

You can view an item's change history when you are viewing details about the item.

1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
2. Go to the *Detail* page for an item. For example, click **Scripting**, then click the name of a script.
3. Click the **Show All History** link at the top of the page.

   **Changes are listed. The page is empty if no changes have been made, or if change history is not enabled.**

### Search for items in change history lists

You can search for items in change history lists.

1. Go to the history listing for settings, assets, or objects:
   - View settings history
   - View asset history
   - View object history
2. Click the **Advanced Search** tab above the list on the right to display the *Advanced Search* panel.
3. Select search properties, then click **Search**.

   **The search results are displayed.**

### *Delete history records*

You can delete history records from history lists.

1. Go to the history list for settings, assets, or objects:
   - View settings history
   - View asset history
   - View object history
2. Select the check box next to one or more entries.
3. Select **Choose Action** > **Delete**, then click **Yes** to confirm.

### *Export history records*

You can export history records to CSV, Excel, and TSV format.

1. Go to the history list for settings, assets, or objects:
   - View settings history
   - View asset history
   - View object history
2. **Optional**: To export items of a specific type, such as **Addition**, select the item type in the *View-By* drop-down list.

   **If you do not filter the list, all list items are exported. Selecting an item's check box does not select the item for export.**
3. Select **Choose Action** > **Export** > **format**.

# Setting up and using labels to manage groups of items

You can set up manual labels, Smart Labels, LDAP Labels, and label groups to manage groups of items, such as devices.

# About labels

Labels are containers that enable you to organize and categorize items, such as devices, so that you can manage them as a group.

For example, you can use labels to identify devices that have the same operating system or that are in the same geographic location. You can then initiate actions, such as distributing software or deploying patches, on all of the devices that in that label. Labels can either be manually assigned to specific items or automatically assigned to

items when they are associated with criteria, such as SQL or LDAP queries. You can apply labels to these types of items:

- Inventory items, such as devices, applications, processes, startup items, and services
- Asset items, such as location, license, and vendor
- Discovery results
- Patches
- Dell Update Packages
- Users

Manual labels are applied and removed manually, whereas Smart Labels and LDAP Labels are applied and removed automatically. See:

- About Smart Labels
- About LDAP Labels

# About Smart Labels

Smart Labels are labels that are applied and removed automatically based on specified criteria.

For example, to track or manage laptops in a specific location, such as the San Francisco office, you could create Smart Label named **San Francisco Office** based on the IP address range or subnet of devices in that location. When devices are inventoried, the Smart Label, **San Francisco Office** is automatically applied to devices in the IP address range. When devices leave the IP address range and are inventoried again, the label is automatically removed.

Smart Labels are applied to and removed from managed devices when the appliance processes device inventory. So if you create a Smart Label that enables metering on devices, it might take time for the Smart Label to be applied to devices and for devices to report metering information. Metering is enabled for devices that match the Smart Label criteria only after the appliance processes device inventory and the Smart Label is applied.

**Related topics**

Managing Smart Labels

# About LDAP Labels

LDAP Labels are labels that interact with LDAP servers. These labels are automatically assigned to device and user records using LDAP queries or search filters.

There are two types of LDAP Labels:

- **Device**: Labels applied to device records. This is useful if you want to automatically group devices by name, description, and other LDAP criteria. Each time a device is inventoried, this query runs against the LDAP server. the *admin* value in the *Search Filter* field is replaced with the name of the user that is logged in to the device. If a result is returned, the device is assigned the label specified in the *Associated Label Name* field.
- **User**: Labels applied to user records. This is useful if you want to automatically group users by domain, location, budget code, or other LDAP criteria. LDAP Labels are applied to or removed from user records when users are imported to the appliance manually or according to a schedule.

**Related topics**

Managing LDAP Labels

## About label groups

You can organize labels by assigning them to label groups. Label groups share their types with the labels they contain.

Not only can a label group include multiple labels, but a label can be associated with more than one label group. Labels inherit any restrictions of the groups to which they belong.

**Related topics**

Add, view, or edit label groups

## About organization filters

Organization filters are similar to labels, but they serve a specific purpose: Organization filters automatically assign devices to organizations when devices are inventoried.

There are two types of organization filters:

- **Data Filters**: Assigns devices to organizations automatically based on search criteria. When devices are inventoried, they are assigned to the organization if they meet the criteria. This filter is similar to Smart Labels in that it assigns devices to organizations automatically if they match specified criteria.
- **LDAP Filters**: Assigns devices to organizations automatically based on LDAP or Active Directory interaction. When devices are inventoried, the query runs against the LDAP server. If devices meet the criteria, they are automatically assigned to the organization.

**Related topics**

Managing organization filters

# Tracking changes to label settings

If History subscriptions are configured to retain information, you can view the details of the changes made to settings, assets, and objects.

This information includes the date the change was made and the user who made the change, which can be useful during troubleshooting.

**Related topics**

About history settings

# Managing manual labels

You can manage labels from the *Label* section of the Administrator Console. Labels can also be added and applied from list pages in other sections, such as *Inventory* and *Security* by selecting **Choose Action** > **Add Label**.

## Add or edit manual labels

You can add or edit manual labels as needed.

1. Go to the *Label Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General

Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, in the **Home** section, click **Label Management**.

c. On the Label Management panel, click **Labels**.

d. Display the *Label Detail* page by doing one of the following:

- Click the name of a label.
- Select **Choose Action** > **New** > **Manual Label**.

**TIP:** Avoid using backslashes (\) in label names. If you need to use a backslash in a label name, add a second backslash (\\) to escape it.

2. Provide the following information:

| Option | Description |
|---|---|
| **Name** | The name of the label. This name appears on the Labels list. |
| **Description** | Any additional information you want to provide. |
| **Alternate Location** | (Optional) The alternate download location for Managed Installations, File Synchronizations, and other deployments that are performed on items assigned to this label. The location you specify replaces the string KACE_ALT_LOCATION.<br>**CAUTION: You should not have a device in two labels that both specify a value in this field.** |
| **Path** | If you specify an alternate download location, specify the path to the location. |
| **Login**<br>**Password** | If you specify an alternate download location, specify the username and password for the location. |
| **Restrict Label Usage To** | (Optional) The categories of items to which the label or label group can be applied. If you do not restrict label usage, the label or label group can be applied to any item. However, if you restrict the label or label group to categories such as Applications and Patches, that label or label group can be applied only to Applications and Patches; it cannot be applied to other items, such as Devices. |
| **Meter Software Usage** | Enable metering on devices that have the label assigned. This enables metering on the devices only. To meter software, you need to also enable metering for individual applications. |
| **Allow Application Control** | Enable Application Control on devices. Software marked as Not Allowed is prevented from running on devices to which the label is applied. |
| **Label Group** | (Optional) The label group to which the label is assigned. To assign the label to a label group, click **Edit** next to the *Label Group* field, then select a label group. This is useful if you have a large number of labels and you want to organize them into sub-labels. For example, you could include the labels of your licensed applications in a group label named *Licenses*. In addition, labels inherit any restrictions of the groups to which they belong. |
| **Scoped to User Role** | The user role associated with this label. When a label is associated with a user role, the user actions are limited to only those devices, scripts, and schedules that are |

| Option | Description |
|---|---|
| | associated with that label. For more information about user roles, see Add or edit User Roles. |

3. Click **Save**.

**Related topics**

Apply the Application Control label to devices

# View manual label details

You can view manual label details, such as the members of a label, label usage restrictions, and alternate location information.

1. Go to the *Label Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, in the **Home** section, click **Label Management**.
    c. On the Label Management panel, click **Labels**.
2. To show or hide label groups, select **Show Label Groups** or **Hide Label Groups** in the *Choose Action* menu.
3. To view the members of a label, click a number in a column, such as *Devices*, *Users*, *Software*, and so on.
4. To view label details, click the linked name of a label.

    **The *Label Detail* page appears.**
5. In the *Labeled Items* section, click the **Add** button next to the section headers to expand or collapse the view: +.

# Delete manual labels

Before you can delete a manual label, you must remove the label from any items to which it is applied. You cannot delete manual labels that are applied to any items.

In addition, if a manual label contains a Smart Label or an LDAP Label, you must delete the Smart Label or LDAP Label before you can delete the manual label. Manual labels cannot be deleted if they contain Smart Labels or LDAP Labels.

1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
2. Remove the label from any items to which it has been applied. For example, to remove the label from devices:
    a. Click **Inventory**.

        **The *Devices* page appears.**
    b. In the *View By* drop-down list, select **Label** > **Label Name**.

        **The *Devices* page shows the items to which the label is applied.**
    c. Select all of the items in the list.
    d. Select **Choose Action** > **Remove Label** > **Label Name**.
3. After the label has been removed from all items, click **Home** > **Labels** > **Label Management**.

**The *Labels* page appears.**

4. Select the check boxes next to one or more labels.
5. Select **Choose Action > Delete**, then click **Yes** to confirm.

# Managing Smart Labels

You can add Smart Labels for devices, applications on the Software page, patches, Discovery Results, and Dell Update packages.

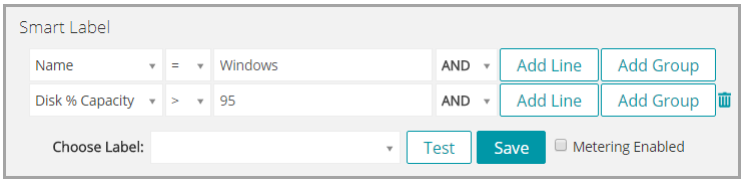
Smart Labels cannot be created for applications on the *Software Catalog* page.

## Add Smart Labels

You can add Smart Labels from the *Labels* section and from list pages where Smart Labels are used, such as the *Devices* list.

1. Go to the *Label Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, in the **Home** section, click **Label Management**.
    c. On the Label Management panel, click **Smart Labels**.
    d. Select **Choose Action > New > Smart Label type**.

    **The appliance displays the *Smart Label* criteria for the type of label that you selected. For example, if you select New > Software Smart Label, the software criteria are displayed. If you select New > Device Smart Label, the *Devices* criteria are displayed.**
2. Specify the search criteria using the available fields.
    - To add a row, click **Add line**.
    - To add a subset of rules, select **AND** or **OR** from the operator drop-down list at the right of the Smart Label criteria, then click **Add Group**.




3. Click **Test** to display items that match the specified criteria.
4. Adjust the criteria as needed until the results are what you expect.
5. In the *Choose label* drop-down list, do one of the following:
    - **Select an existing label to associate with the Smart Label. Type in the *Choose label* field to search for existing labels.**

      **NOTE:** If you select a label group instead of a label, you will not be able to apply the Smart Label to a patching schedule. Patching schedules can only use Smart Labels based on a single item.
    - **Enter a new name for the Smart Label in the *Choose label* field, then press Enter or Return.**

    **NOTE:** Press **Enter** or **Return** after you enter a new Smart Label name to move the text from the search field to the label field.
6. Click **Save**.

**Related topics**

Labeling devices to group them

Using Smart Labels with Discovery Results

# Example: Combine Smart Labels to identify devices

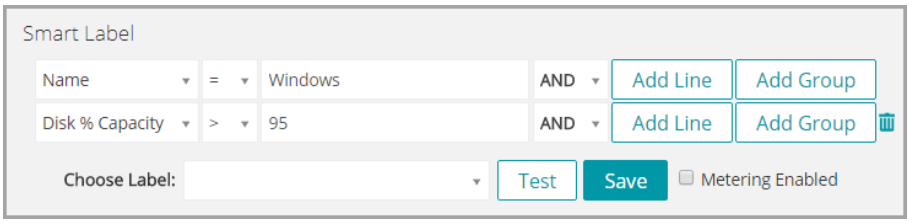
This example demonstrates how to combine three Smart Labels to identify devices running Windows 7 or Windows 8 that do not have the McAfee® VirusScan® application installed.

The following are the three Smart Labels created in this example:

- The first Smart Label, *Win78*, is applied to devices that have Windows 7 or Windows 8 operating systems. This label has a run order of 1.
- The second Smart Label, *MissingVirusScan*, is applied to devices that do not have the VirusScan application installed. This label also has a run order of 1.
- The third Smart Label, *Win78MissingVirusScan*, is applied to devices that have both the *Win78* and *MissingVirusScan* Smart Labels applied. This label has a run order of 2, so that it runs after the first two labels.

1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
2. Create a device Smart Label to identify the operating system:
    a. On the left navigation bar, click **Inventory**, then click **Dashboard**.
    b. Click the **Smart Label** tab above the list on the right.

        **The *Smart Label* panel appears.**




    c. Specify the criteria required for the Windows 7 operating system:

        **`Operating System: Name | contains | Windows 7`**

    d. With **OR** selected in the operator drop-down list, click **Add Line**, then specify the criteria required for the Windows 8 operating system:

        **`Operating System: Name | contains | Windows 8`**

    e. In the *Choose label* drop-down list, type a name for the label, such as Win78, then click **Smart Label**.
3. Create a device Smart Label to find devices that are missing the VirusScan application:
    a. In the *Smart Label* panel on the *Devices* page, specify the criteria required to find devices that do not have the VirusScan application installed:

        **`Software: Software Titles | does not contain | VirusScan`**

    b. In the *Choose label* drop-down list, type a name for the label, such as MissingVirusScan, then click **Smart Label**.
4. Create a device Smart Label that uses the Smart Labels created in the preceding steps.
5. Create a Smart Label for the application:

a. In the *Smart Label* panel on the *Devices* page, specify the criteria to identify devices with the *Win78* Smart Label applied:

```
Device Identity Information: Label Names | = | Win78
```

b. With **AND** selected in the operator drop-down list, click **Add Line**, then specify the criteria to identify devices with the *MissingVirusScan* Smart Label applied:

```
Device Identity Information: Label Names | = | MissingVirusScan
```

c. In the *Choose label* drop-down list, type a name for the label, such as Win78MissingVirusScan, then click **Smart Label**.

6. Set the order in which to run the Smart Labels:
   a. On the left navigation bar, in the **Home** section, click **Label Management**.
   b. On the Label Management panel, click **Smart Labels**.
   c. Select **Choose Action** > **Order Labels** > **Device Smart Labels**.

      **The** *Order Device Smart Labels* **page appears.**

   d. Click the **Edit** button at the far right in the *Win78* label row: .
   e. In the *Order* column, type 1, then click **Save**.
   f. Click the **Edit** button at the far right in the *MissingVirusScan* label: .
   g. In the *Order* column, type 1, then click **Save**.
   h. Click the **Edit** button at the far right in the *Win78MissingVirusScan* label row: .
   i. In the *Order* column, type 2, then click **Save**.
   j. Click **Save** at the bottom of the list.

      **The** *Win78* **label and the** *MissingVirusScan* **label are set to run before the** *Win78MissingVirusScan* **label. This ensures that Windows 7 and 8 devices that are missing the VirusScan application are labeled before the** *Win78MissingVirusScan* **label runs.**

# Edit Smart Labels

You can change the SQL queries used in Smart Labels as needed.

When you change the SQL query used for a software Smart Label, the Smart Label is applied to or removed from items immediately, based on whether the items meet the new criteria. Device Smart Labels are applied to or removed from devices when the device's inventory information is updated.

If you manually edit the SQL of a Smart Label, you can no longer edit the label using the Smart Label template. This is because the template cannot be used to edit custom SQL.

1. Go to the *Label Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, in the **Home** section, click **Label Management**.
   c. On the Label Management panel, click **Smart Labels**.
   d. Click the name of a Smart Label, or click the **Edit** button to the left of the Smart Label name.

**NOTE:** If the SQL of the Smart Label has been edited manually, the *Edit* button is not displayed.

2. Do any of the following:
   - **Select or clear the *Enable Metering* check box to enable or disable metering for device Smart Labels.**
   - **In the *Assigned Label* field, select the label you want to associate with the Smart Label.**
   - **Click Details to go to the detail page for the assigned label.**
   - **If the Smart Label was created using the Smart Label template, and the SQL has not been edited manually, click the link next to *using the original editor*.**
   - **To edit the Smart Label SQL manually, click the link next to *using this editor*.**

     **CAUTION: If you manually edit the SQL of a Smart Label, you can no longer edit the label using the Smart Label template. This is because the wizard cannot be used to edit custom SQL.**
3. **Optional**: Click **Duplicate** to create a new Smart Label that uses the same SQL query.
4. Click **Save**.

**NOTE:** When you click **Duplicate** to create a label, you can assign it to a new label only.

# Setting up labels for user accounts

You can use labels to group user accounts the same way you use labels to group devices and software in the *Inventory* section. In addition, you can use Smart Labels to grant levels of access to users. For example, you could use labels to designate who can submit, accept, reject, work on, and resolve Service Desk tickets.

Additionally, any labels you create in the *Inventory* section can work as user labels in Service Desk, provided that you created those labels without restrictions. If the labels were created with restrictions, you can modify them, or create labels in the *Inventory* sections without restrictions.

## *Add an All Ticket Owners label*

To give users permission to own Service Desk tickets, you can create an All Ticket Owners label that you can apply to user accounts.

1. Go to the *Label Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, in the **Home** section, click **Label Management**.
   c. On the Label Management panel, click **Labels**.
   d. Select **Choose Action > New Manual Label**.

   **TIP:** Avoid using backslashes (\) in label names. If you need to use a backslash in a label name, add a second backslash (\\) to escape it.
2. Provide the following information:

| Option | Description |
|---|---|
| **Name** | The name of the label. This name appears on the *Labels* list.<br>Type a name such as All Ticket Owners. |

| Option | Description |
|---|---|
| **Description** | Any additional information you want to provide. |

3. Click **Save**.

The new label is available in the **Choose Action** > **Apply Label** menu on the *Users* page. To assign the label to Service Desk staff when you import user data, see Importing users from an LDAP server.

# Using Smart Labels for patching

You can use Smart Labels to automatically group patches and devices. You can also label patches and devices manually, but Smart Labels are usually more efficient because they are applied and removed automatically.

For example, you can create a Smart Label that matches all Windows 7 patches. Each time one of these patches becomes available to the appliance, the label is applied to the patch. If you set up a patching schedule to automatically detect and deploy devices with this label, the patch is automatically deployed to Windows 7 machines in inventory.

You can create a labeling scheme that organizes patches by operating system and importance, such as **P (Patch) Operating System Importance**. For example:

- P Win7
- P Win7 Critical
- P Win7 Important
- P MS Office
- P Leopard
- P Mac10.8 Critical Test

Similarly, you create device Smart Labels to specify the devices (D), on which you want to install patches:

- D All Desktops
- D All Servers
- D All Laptops

The appliance evaluates the information provided by the Agents when they check in, and it applies device Smart Labels if the data matches the label criteria.

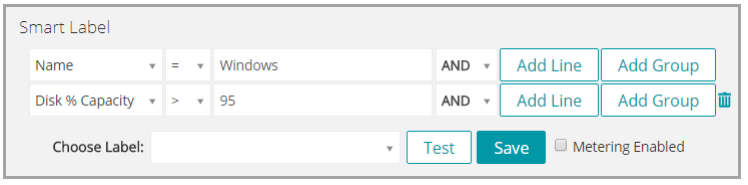
Patch Smart Labels are immediately applied to existing patches that meet the criteria. The label is added to new patches that meet the criteria when they are downloaded.

## *Add a Smart Label for critical OS patches*

You can create a Smart Label to identify critical OS (operating system) patches.

1. Go to the *Patch Catalog* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Security**, then click **Patch Management**.
    c. On the *Patch Management* panel, click **Catalog**.
2. Click the **Smart Label** tab above the list on the right.

    **The** *Smart Label* **panel appears.**




3. Specify Smart Label criteria:
    a. Specify criteria that identify active patches:

        ```
        Patch Listing Information: Status | is | Active
        ```

    b. Click **Add Line**, then specify criteria that identify critical patches:

        ```
        AND | Patch Listing Information: Severity | is | Critical
        ```

    c. Click **Add Line**, then specify criteria that identify Windows patches:

        ```
        AND | Patch Listing Information: Operating System | is | Windows
        ```

    d. Click **Add Line**, then specify criteria that identify operating system patches:

        ```
        AND | Patch Listing Information: Category | is | OS
        ```

4. Click **Test** to display items that match the search criteria.
5. Adjust the criteria as needed until the results are what you expect.
6. In the *Choose label* drop-down list, do one of the following:
    - **Select an existing label to associate with the Smart Label. Type in the *Choose label* field to search for existing labels.**

        **NOTE:** If you select a label group instead of a label, you will not be able to apply the Smart Label to a patching schedule. Patching schedules can only use Smart Labels based on a single item.

    - **Enter a new name for the Smart Label in the *Choose label* field, then press Enter or Return.**

    **NOTE:** Press **Enter** or **Return** after you enter a new Smart Label name to move the text from the search field to the label field.
7. Click **Save**.

The Smart Label is applied to existing patches that meet the criteria. The label is added to new patches that meet the criteria when they are downloaded.

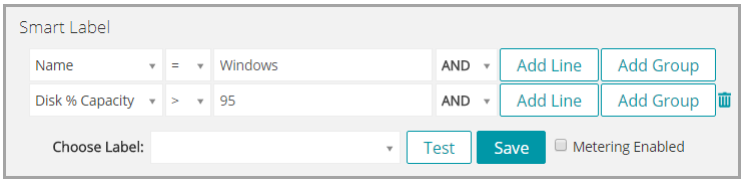
Subscribe to patches. See Subscribing to and downloading patches.

## *Add a Smart Label for new patches*

You can create a Smart Label to quickly identify new patches that must be deployed.

1. Go to the *Patch Catalog* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Security**, then click **Patch Management**.
    c. On the *Patch Management* panel, click **Catalog**.
2. Click the **Smart Label** tab above the list on the right.

    **The *Smart Label* panel appears.**




3. Specify Smart Label criteria:
    a. Specify criteria that identify patches added after a specific date:

    ```
    Patch Listing Information: Release Date | > <date yyyy-mm-dd>
    ```

    b. Click **Add Line**, then specify criteria that identify non-critical patches:

    ```
    AND | Patch Listing Information: Impact | is not | Critical
    ```

    c. Click **Add Line**, then specify criteria that identify active patches:

    ```
    AND | Patch Listing Information: Status | is | Active
    ```

4. Click **Test**.

    **All non-critical patches added after the specified date are displayed.**
5. In the *Choose label* drop-down list, do one of the following:
    - **Select an existing label to associate with the Smart Label. Type in the *Choose label* field to search for existing labels.**

    **NOTE:** If you select a label group instead of a label, you will not be able to apply the Smart Label to a patching schedule. Patching schedules can only use Smart Labels based on a single item.

    - **Enter a new name for the Smart Label in the *Choose label* field, then press Enter or Return.**

    **NOTE:** Press **Enter** or **Return** after you enter a new Smart Label name to move the text from the search field to the label field.
6. Click **Save**.

    The Smart Label is applied to existing patches that meet the criteria. The label is added to new patches that meet the criteria when they are downloaded.

Subscribe to patches. See Subscribing to and downloading patches.

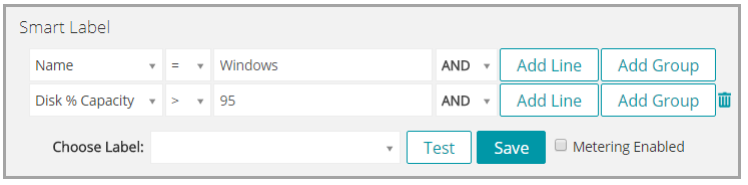
# Using Smart Labels with Discovery Results

Smart Labels can be used to automatically assign labels to Discovery Results that meet specified criteria. This includes DNS, Socket, and SNMP results across a single subnet or multiple subnets.

## *Add Discovery Results Smart Labels*

You can add Smart Labels for Discovery Results to group and manage results.

1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
2. Select **Inventory > Discovery Results** to display the *Discovery Results* page.
3. Click the **Smart Label** tab above the list on the right to display the *Smart Label* panel.




4. Select Smart Label criteria:
   - **Select an attribute in the left-most drop-down list. For example: Device Info: Ping Test.**
   - **Select a condition in the middle drop-down list. For example: has.**
   - **Select the status attribute in the next drop-down list. For example: Failed.**
5. Click **Test** to display items that match the search criteria.
6. Adjust the criteria as needed until the results are what you expect.
7. In the *Choose label* drop-down list, do one of the following:
   - **Select an existing label to associate with the Smart Label. Type in the *Choose label* field to search for existing labels.**

     **NOTE:** If you select a label group instead of a label, you will not be able to apply the Smart Label to a patching schedule. Patching schedules can only use Smart Labels based on a single item.
   - **Enter a new name for the Smart Label in the *Choose label* field, then press Enter or Return.**

   **NOTE:** Press **Enter** or **Return** after you enter a new Smart Label name to move the text from the search field to the label field.
8. Click **Save**.

The Smart Label is automatically applied to or removed from Discovery Results that meet the specified criteria. The next time the Discovery Schedule runs, the Smart Label is applied to discovered devices.

### *Changing the run order of Discovery Results Smart Labels*

You can specify the order in which Smart Labels run by changing their order values.

Smart Labels have a default order value of 100, and Smart Labels with lower values run before those with higher values. See Assign the Smart Label run order.

## Adding Smart Labels for devices

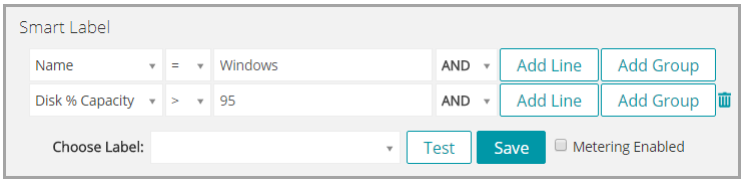
You can create Smart Labels to organize devices by type, such as desktop, server, and laptop. After you create Smart Labels for devices, you can schedule patches to be deployed to devices based on their labels.

### *Add a Smart Label for desktops*

You can create a Smart Label to identify devices that require desktop patches.

1. Go to the *Devices* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **Dashboard**.
2. Click the **Smart Label** tab above the list on the right.

   **The *Smart Label* panel appears.**




3. Specify Smart Label criteria:
    a. Specify the criteria required to eliminate servers:

        ```
        Operating System: Name | does not contain | Server
        ```

    b. Click **Add Line**, then specify the criteria required to eliminate laptops:

        ```
        AND | Manufacturer and BIOS info: Chassis Type | does not contain | Laptop
        ```

    Other useful criteria for identifying desktops include:

    - System Names, if you give all of your desktops a similar name.
    - System Models, such as all systems with **XPS** in the model name.
    - IP addresses, or partial IP addresses using the **contains** criteria.
    - BIOS Serial Numbers, or use the **Includes partial serial number** criteria. This is useful if you have purchased desktops with sequential numbers. For more information, contact your vendor.
    - Software Title, if desktops have a title in common.
4. Click **Test** to display items that match the search criteria.
5. In the *Choose label* drop-down list, do one of the following:

    - **Select an existing label to associate with the Smart Label. Type in the *Choose label* field to search for existing labels.**

        **NOTE:** If you select a label group instead of a label, you will not be able to apply the Smart Label to a patching schedule. Patching schedules can only use Smart Labels based on a single item.

    - **Enter a new name for the Smart Label in the *Choose label* field, then press Enter or Return.**

    **NOTE:** Press **Enter** or **Return** after you enter a new Smart Label name to move the text from the search field to the label field.
6. Click **Save** to create the Smart Label.
7. **Optional**: To confirm that the new label appears on the *Labels* list, select **Home > Labels > Smart Labels** or **Label Management**.

    **The new label appears empty at first. When devices are inventoried, the label is applied to them if they match the Smart Label criteria.**
8. Test the Smart Label:
    a. Click **Inventory > Devices** to display the *Devices* page.
    b. Click the name of a device that matches the criteria, but to which the label has not yet been applied.
    c. On the *Device Detail* page, click **Force Inventory**.

        **If the Smart Label is working correctly, the device checks in, and the label is applied to it.**

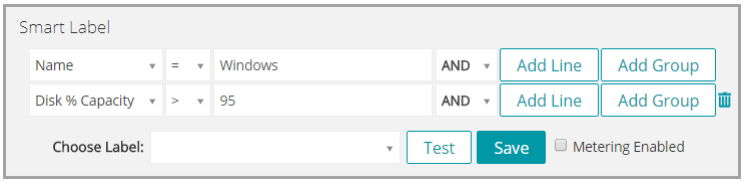
    **Force Inventory** is available only if the agent messaging protocol connection to an Agent-managed device is active, or for Agentless devices, if the device is reachable.

## *Add a Smart Label for servers*

You can create a Smart Label to identify devices that require server patches.

1. Go to the *Devices* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Dashboard**.
2. Click the **Smart Label** tab above the list on the right.

    **The *Smart Label* panel appears.**




3. Specify search criteria:
    a. Specify the criteria required to identify servers:

        **`Operating System: Name | contains | Server`**

    b. Click **Add Line**, then specify the criteria required to eliminate laptops:

        **`AND | Manufacturer and BIOS info: Chassis Type | does not contain | Laptop`**

    Other useful criteria for identifying servers include:

    - System Names, if you give all of your servers a similar name.
    - IP addresses, or partial IP addresses using the **contains** criteria.
    - BIOS Serial Numbers, or use the **Includes partial serial number** criteria. This is useful if you have purchased servers with sequential numbers. For more information, contact your vendor.
    - Software Title, if servers have a title in common.
4. Click **Test** to display items that match the search criteria.
5. In the *Choose label* drop-down list, do one of the following:

    - **Select an existing label to associate with the Smart Label. Type in the *Choose label* field to search for existing labels.**

        **NOTE:** If you select a label group instead of a label, you will not be able to apply the Smart Label to a patching schedule. Patching schedules can only use Smart Labels based on a single item.

    - **Enter a new name for the Smart Label in the *Choose label* field, then press Enter or Return.**

    **NOTE:** Press **Enter** or **Return** after you enter a new Smart Label name to move the text from the search field to the label field.
6. Click **Save**.
7. **Optional**: To confirm that the new label appears on the *Labels* list, select **Home > Labels > Smart Labels** or **Label Management**.

    **The new label appears empty at first. When devices are inventoried, the label is applied to them if they match the Smart Label criteria.**
8. Test the Smart Label:
    a. Click **Inventory > Devices** to display the *Devices* page.

b. Click the name of a device that matches the criteria, but to which the label has not yet been applied.

c. On the *Device Detail* page, click **Force Inventory**.

**If the Smart Label is working correctly, the device checks in, and the label is applied to it.**

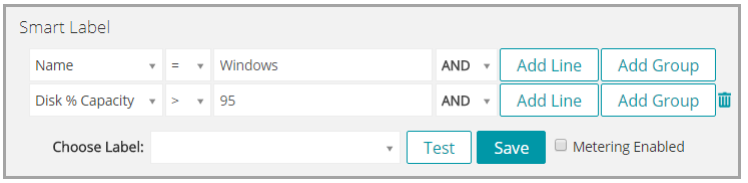
**Force Inventory** is available only if the agent messaging protocol connection to an Agent-managed device is active, or for Agentless devices, if the device is reachable.

## *Add a Smart Label for laptops*

You can create a Smart Label to identify devices that require laptop patches.

1. Go to the *Devices* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **Dashboard**.
2. Click the **Smart Label** tab above the list on the right.

   **The *Smart Label* panel appears.**




3. Specify search criteria:
   a. Specify the criteria required to eliminate servers:

      **`Operating System: Name | does not contain | Server`**

   b. Click **Add Line**, then specify the criteria required to identify laptops:

      **`AND | Manufacturer and BIOS Info: Chassis Type | contains | Laptop`**

   Other useful criteria for identifying laptops include:

   - System Names, if you give all of your laptops a similar name.
   - IP addresses, or partial IP addresses using the **contains** criteria.
   - BIOS Serial Numbers, or use the **Includes partial serial number** criteria. This is useful if you have purchased laptops with sequential numbers. For more information, contact your vendor.
   - Software Title, if laptops have a title in common.
4. Click **Test** to display items that match the search criteria.
5. In the *Choose label* drop-down list, do one of the following:

   - **Select an existing label to associate with the Smart Label. Type in the *Choose label* field to search for existing labels.**

     **NOTE:** If you select a label group instead of a label, you will not be able to apply the Smart Label to a patching schedule. Patching schedules can only use Smart Labels based on a single item.

   - **Enter a new name for the Smart Label in the *Choose label* field, then press Enter or Return.**

**NOTE:** Press **Enter** or **Return** after you enter a new Smart Label name to move the text from the search field to the label field.

6. Click **Save** to create the Smart Label.
7. **Optional**: To confirm that the new label appears on the *Labels* list, select **Home** > **Labels** > **Smart Labels** or **Label Management**.

   **The new label appears empty at first. When devices are inventoried, the label is applied to them if they match the Smart Label criteria.**
8. Test the Smart Label:
   a. Click **Inventory** > **Devices** to display the *Devices* page.
   b. Click the name of a device that matches the criteria, but to which the label has not yet been applied.
   c. On the *Device Detail* page, click **Force Inventory**.

      **If the Smart Label is working correctly, the device checks in, and the label is applied to it.**

   **Force Inventory** is available only if the agent messaging protocol connection to an Agent-managed device is active, or for Agentless devices, if the device is reachable.

# Assign the Smart Label run order

You can run Smart Labels sequentially by assigning the run order in the Smart Label properties.

Assigning the Smart Label run order can be useful when you want to run a specific Smart Label before other Smart Labels. For example, you might have a Smart Label that identifies a set of devices. If you want to use a second Smart Label to further refine the set of devices based on the first label being applied, you could set the run order so that the first Smart Label runs before the second one. Smart Labels have a default order value of 100, and Smart Labels with lower values run before those with higher values.

1. Go to the *Smart Label* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, in the **Home** section, click **Label Management**.
   c. On the Label Management panel, click **Smart Labels**.
2. In the *Choose Action* menu, in the *Order* section, select the type of label whose run order you want to change.

   **The *Order* page appears, showing all Smart Labels of the selected type.**
3. To change a Smart Label's order value:
   a. Click the **Edit** button to the right of the *Order* column: .
   b. Enter an order value, then click **Save**.
4. Click **Save**.

# Delete Smart Labels

Deleting Smart Label is useful if you need to make extensive changes to Smart Label criteria while preserving labels used in tasks such as Managed Installations.

For example, you could delete all the criteria from a Smart Label, then re-apply new criteria to the container label. In effect, this would create a new Smart Label using the existing container label required for Managed Installations.

Deleting a Smart Label removes the criteria associated with the Smart Label, but it does not delete any other labels associated with the Smart Label.

1. Go to the *Smart Label* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, in the **Home** section, click **Label Management**.
    c. On the Label Management panel, click **Smart Labels**.
2. Select the check box next to one or more Smart Labels.
3. Select **Choose Action** > **Delete**, then click **Yes** to confirm.

# Managing label groups

You manage label groups in the *Labels* section.

## Add, view, or edit label groups

You can add, view, and edit label groups as needed.

1. Go to the *Label Group Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, in the **Home** section, click **Label Management**.
    c. On the Label Management panel, click **Labels**.
    d. Display the *Label Group Detail* page by doing one of the following:
    - Click the name of a label group
    - Select **Choose Action** > **New Label Group**
2. Provide the following information:

| Option | Description |
|---|---|
| **Name** | The name of the label group. |
| **Description** | Any additional information you want to provide. |
| **Restrict Label Group Usage To** | (Optional) The categories of items to which the label or label group can be applied. If you do not restrict label usage, the label or label group can be applied to any item. However, if you restrict the label or label group to categories such as Applications and Patches, that label or label group can be applied only to Applications and Patches; it cannot be applied to other items, such as Devices. |
| **Meter Software Usage** | Select or clear this check box to enable or disable metering for Device labels. |
| **Allow Application Control** | Enable Application Control on devices. Software marked as Not Allowed is prevented from running on devices to which the label is applied. |

| Option | Description |
|---|---|
| **Label Group** | (Optional) The label group to which the label is assigned. To assign the label to a label group, click **Edit** next to the *Label Group* field, then select a label group. This is useful if you have a large number of labels and you want to organize them into sub-labels. For example, you could include the labels of your licensed applications in a group label named *Licenses*. In addition, labels inherit any restrictions of the groups to which they belong. |

3. Click **Save**.

**Related topics**

Apply the Application Control label to devices

# Assign labels to or remove labels from label groups

Labels can be assigned to groups, and they can be associated with more than one label group. Labels inherit the restrictions of the groups to which they belong.

1. Go to the *Labels* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, in the **Home** section, click **Label Management**.
    c. On the Label Management panel, click **Labels**.
2. Select the check boxes next to the labels you want to assign to a group.
3. Select **Choose Action** > **Apply Label Groups**, then select the label group to which you want to assign the label.

    **Apply Label Groups appears only if you have label groups on your appliance.**

    **The name of the label group appears next to the name of the label or labels you selected.**
4. Select the check box next to the labels you want to remove from a group.
5. Select **Choose Action** > **Remove Label Groups**, then select the label group from which you want to remove the labels.

    **Remove Label Groups appears only if you have label groups on your appliance.**

    **The name of the label group no longer appears next to the name of the label or labels you selected.**

# Delete label groups

You can delete label groups only if they do not contain any labels or subgroups.

If a label group contains labels or subgroups, you must remove them from the label group before you can delete the group.

1. Go to the *Labels* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, in the **Home** section, click **Label Management**.
    c. On the Label Management panel, click **Labels**.
2. If the label group does not contain any labels or subgroups:
    a. Select the check box next to the group's name

b. Select **Choose Action** > **Delete**, then click **Yes** to confirm.

**The label group is removed.**

3. If the group contains labels or subgroups:
   a. Click the name of the label group to display the *Label Group Detail* page.
   b. In the *Labeled Items* section toward the bottom of the page, click the **Add** button to expand the *Labels* section: +.
   c. Click the name of a label or label group to display the detail page for that label or label group.
   d. In the *Label Group* field, click **Edit**.
   e. In the *Assign to Label Group* window, click the **Delete** button next to the label you want to remove: 🗑.
   f. Click **OK**, then click **Save**.
   g. When you have removed all labels and subgroups from the label group, select the check box next to the label group's name on the *Labels* page.
   h. Select **Choose Action** > **Delete**, then click **Yes** to confirm.

# Managing LDAP Labels

You manage LDAP Labels in the *Labels* section.

## Add or edit LDAP Labels

You can add and edit LDAP Labels as needed. Be sure to test LDAP Labels before you enable them.

1. Go to the *LDAP Label Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, in the **Home** section, click **Label Management**.
   c. On the Label Management panel, click **LDAP Labels**.
   d. Display the *LDAP Label Detail* page by doing one of the following:
   - Click the name of an LDAP label.
   - Select **Choose Action** > **New**.
2. Provide the following information:

| Option | Description |
|---|---|
| **Enabled** | Enable the appliance to run the LDAP Label.<br>**NOTE:** Select the *Enabled* check box only after you have tested the LDAP Label to verify that the LDAP criteria is correct and labels are applied as expected. |
| **Type** | The LDAP Label type. There are two types of LDAP Labels:<br>• **Device**: Labels applied to device records. This is useful if you want to automatically group devices by name, description, and other LDAP criteria. When devices are inventoried, this query runs against the LDAP server to determine whether any devices contain LDAP attributes with values that correspond to the LDAP search filter criteria. If a result is returned, the device is assigned the label specified in the *Associated Label Name* field. |

| Option | Description |
|---|---|
| | You must include at least one appliance variable, such as KBOX_COMPUTER_NAME, in device labels for the LDAP label to be applied to a device. During LDAP label processing, the variable is used to compare an attribute's value in the LDAP directory to determine whether relationships exists between the LDAP object and an appliance object. See LDAP variables.<br>• **User**: Labels applied to user records. This is useful if you want to automatically group users by domain, location, budget code, or other LDAP criteria. LDAP Labels are applied to or removed from user records when users are imported to the appliance manually or according to a schedule. You can use user variables, such as KBOX_USER_NAME, in user labels. During LDAP label processing, the variable is used to compare an attribute's value in the LDAP directory to determine whether relationships exists between the LDAP object and an appliance object. See LDAP variables.<br>**TIP:** To test a label, replace the KBOX_ variables with the appropriate values for your environment, then select **Test**. |
| **Associated Label** | The manual label, or container label, to associate with this LDAP Label. Each LDAP Label must have an associated label. |
| **Associated Label Description** | Notes from the label selected in the *Associated Label Name* field. |
| **Server** | The IP address or the hostname of the LDAP server. If the IP address is not valid, the appliance waits to timeout, resulting in login delays during LDAP authentication.<br>**NOTE:** To connect through SSL, use an IP address or hostname. For example: ldaps://hostname. |
| **Port** | The LDAP port number, which is usually 389 (LDAP) or 636 (secure LDAP). |
| **Base DN** | The criteria used to search for accounts.<br>This criteria specifies a location or container in the LDAP or Active Directory structure, and the criteria should include all the users that you want to authenticate. Enter the most specific combination of OUs, DCs, or CNs that match your criteria, ranging from left (most specific) to right (most general). For example, this path leads to the container with users that you need to authenticate:<br>`OU=end_users,`<br>`DC=company,DC=com.` |
| **Advanced Search** | The search filter. For example:<br>`(&(sAMAccountName=KBOX_USER_NAME)`<br>`(memberOf=CN=financial,DC=example,DC=com))` |
| **Credentials** | An LDAP credential of the account the appliance uses to log in to the LDAP server to read accounts. Select from the list or create a new LDAP credential. For more information about LDAP credentials, see Add and edit LDAP User/Password credentials. |

If you are unsure of the *Base DN* and *Advanced Search* information, use the LDAP Browser. See Use the LDAP Browser.

**NOTE:** Negative search filters are formatted as follows: `(!(sAMAccountName=David))`. Any other format using negatives will result in an error.

3. Click the **Test** button to test the new label. Change the label parameters and test again as needed.
4. If the LDAP Label is ready to use, select the *Enabled* check box. Otherwise, save the label without enabling it.
5. Click **Save**.

**Related topics**

Use the LDAP Browser

# Enable LDAP Labels

After you have added and tested an LDAP Label, you can enable it. Device LDAP Labels that are enabled run against the LDAP server when devices check in to the appliance. User LDAP Labels that are enabled run against the LDAP server when users are imported manually or imported according to a schedule.

Add and test an LDAP Label. See Add or edit LDAP Labels.

1. Go to the *LDAP Label Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, in the **Home** section, click **Label Management**.
    c. On the Label Management panel, click **LDAP Labels**.
    d. Click the name of an LDAP label.
2. Select the *Enabled* check box.
3. Click **Save**.

# Delete LDAP Labels

Deleting an LDAP Label removes the criteria associated with the LDAP Label, but it does not delete any other labels associated with the LDAP Label.

1. Go to the *LDAP Label Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, in the **Home** section, click **Label Management**.
    c. On the Label Management panel, click **LDAP Labels**.
2. Select the check box next to one or more LDAP Labels.
3. Select **Choose Action** > **Delete**, then click **Yes** to confirm.

# Use the LDAP Browser

The LDAP Browser enables you to browse and search data located on an LDAP server, such as an Active Directory server.

To use the LDAP Browser, you must have the Bind DN and the LDAP password to log on to the LDAP server.

The LDAP Browser can be useful when you need to enter information in the *Search Base DN* and the *Search Filter* fields for LDAP queries.

1. Go to the *LDAP Browser*:

a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
b. On the left navigation bar, in the **Home** section, click **Label Management**.
c. On the Label Management panel, click **LDAP Browser**.

2. Specify *LDAP Server* settings:

| Option | Description |
|---|---|
| **IP Address or Hostname** | The IP address or the hostname of the LDAP server. If the IP address is not valid, the appliance waits to timeout, resulting in login delays during LDAP authentication.<br>**NOTE:** To connect through SSL, use an IP address or hostname. For example: ldaps://hostname. |
| **Port** | The LDAP port number, which is usually 389 (LDAP) or 636 (secure LDAP). |
| **Login** | The credentials of the account the appliance uses to log in to the LDAP server to read accounts. For example:<br>`LDAP Login:CN=service_account,CN=Users,`<br>`DC=company,DC=com.`<br>If user name and password are not provided, the tree lookup is not performed. Each LDAP Label can connect to a different LDAP or Active Directory server. |
| **Password** | The password of the account the appliance uses to log in to the LDAP server. |

3. Click **Test**.

   **Upon successful connection to the LDAP server, the Next button becomes active.**

   If the operation fails, verify the following:

   - The IP address or hostname is correct.
   - The LDAP server is running.
   - The login credentials are correct.

4. Click **Next**.

   **The** *Narrow the Search* **window appears.**

5. Enter a search filter to limit the number of results displayed at the bottom of the screen.

| Option | Description |
|---|---|
| **LDAP EasySearch** | Type a string that you want to search for. |
| **Search on** | Indicate if you want to search for indexed or non-indexed fields by selecting the appropriate option, as required. |
| **Other attributes** | Type a comma-separated list of Active Directory fields that you want to search for.<br>**NOTE:** The search does not check if the specified fields actually exist in the Active Directory. |

6. Click **Go**.

**The search results appear at the bottom of the screen, on the left panel.**

7. Click a child node to view its attributes.

   **The attributes appear in the right panel.**

# Configuring user accounts, LDAP authentication, and SSO

You can configure and manage user accounts, authenticate users with LDAP information, and enable single sign on (SSO) for users.

## About user accounts and user authentication

User accounts can be created and managed on the appliance. Users who access the Administrator Console and User Console using these accounts are referred to as **locally authenticated**.

As an alternative to local authentication, you can set up external authentication through an external LDAP server. See Using an LDAP server for user authentication.

Types of locally authenticated user accounts include:

- **System-level user accounts**. Accounts that enable users to log in to the System Administration Console to manage appliance settings, such as the appliance host name and network settings. System-level user accounts include the default **admin** account for the appliance. These accounts also enable access to organization-level components (admiui) and the User Console. See Managing System-level user accounts.
- **Organization user accounts**. Accounts that enable users to log in to the Administrator Console Organization level (Administrator Console ) to manage organization-specific components. These components may include Inventory, Assets, Distribution, Scripting, Security, Service Desk, and User Console depending on the user's role. See Managing organization user accounts.

## About locale settings

Locale settings determine the language used for text in the interfaces. You can select locale settings for the Command Line Console, Administrator Console, and User Console.

See Configuring locale settings.

## Managing System-level user accounts

System-level user accounts enable users to log in to the System Administration Console to manage appliance settings, such as the appliance host name and network settings. System-level user accounts authenticate users locally on the appliance.

To use an LDAP server for user authentication, see Using an LDAP server for user authentication.

**NOTE:** You cannot delete the default **admin** account. You can change the user name of the **admin** account or disable it on the appliance (LDAP or SAML configuration required). You can also change the **admin** account password. See Add or edit System-level user accounts. Additionally, if the Organization component is enabled on your appliance, or if you want to link multiple K-Series appliances, use caution when changing the login and password of the **admin** account. The **admin** account login names and passwords on all linked appliances and organizations must be the same if you want to switch among them using the drop-down list in the top-right corner of the System Administration Console. The drop-down list shows only those appliances and organizations whose **admin** account login names and passwords are the same.

**NOTE:** See Enable fast switching for organizations and linked appliances.

# Add or edit System-level user accounts

You can add or edit System-level user accounts as needed. These accounts enable users to log in to the System Administration Console to manage appliance settings.

If the Organization component is enabled on your appliance, you can also add or edit organization-specific user accounts. See Managing organization user accounts.

**NOTE:** You cannot delete the default **admin** account. You can change the user name of the **admin** account or disable it on the appliance (LDAP or SAML configuration required). You can also change the **admin** account password. Additionally, if the Organization component is enabled on your appliance, or if you want to link multiple K-Series appliances, use caution when changing the login and password of the **admin** account. The **admin** account login names and passwords on all linked appliances and organizations must be the same if you want to switch among them using the drop-down list in the top-right corner of the System Administration Console. The drop-down list shows only those appliances and organizations whose **admin** account login names and passwords are the same.

**NOTE:** See Enable fast switching for organizations and linked appliances.

1. Go to the *Administrator Detail* page:
    a. Log in to the appliance System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page.
    b. On the left navigation bar, click **Settings**, then click **Administrators**.
    c. Display the *Administrator Detail* page by doing one of the following:
    - Click the name of an administrator
    - Select **Choose Action** > **New**.
2. Enter or change the user information.

| Option | Description |
|---|---|
| **Login** | (Required) The name the user types in the *Login ID* field on the login page. If you are editing the default *admin* account, you can change the login name, however use caution when changing the login and password of the *admin* account. The *admin* account login names and passwords on all linked appliances and organizations must be the same if you want to switch between them using the drop-down list in the top-right corner of the System Administration Console. The drop-down list shows only those appliances and organizations whose *admin* account login names and passwords are the same. |
| **Name** | The user's full name. |
| **Primary Email** | The user's primary email address. |
| **Additional Emails** | Any additional email addresses associated with the user. |

| Option | Description |
|---|---|
| **Domain** | The Active Directory domain associated with the user. |
| **Budget Code** | The code of the financial department associated with the user. |
| **Location** | The name of the work site or building where the user is located. |
| **Work Phone, Home Phone, Mobile Phone, and Pager Number** | The user's telephone numbers. |
| **Custom 1-4** | Any additional information about the user or the user's account. |
| **Password and Confirm Password** | (Required) The password the user types when logging in.<br>If the Organization component is enabled on your appliance, or if you want to link multiple K-Series appliances, use caution when changing the password of the **admin** account. **Admin** account passwords for the System-level, for organizations, and for linked appliances must be the same if you want to switch among them using the drop-down list in the top-right corner of the Administrator Console. The drop-down list shows only those organizations and appliances whose admin account passwords are the same. |
| **Role** | (Required) Roles are assigned to user accounts to control access to the Administrator Console and User Console. Default administrator roles include:<br>• **Administrator**: This user can log in to and access all features in the Administrator Console.<br>• **Read Only Administrator**: This user can log in but cannot modify any settings in the Administrator Console.<br>You cannot change the role of the default admin account. |
| **Make default** | Select this option if you want the selected role to become the default role for new users. |
| **Locale** | The locale to use for the Administrator Console and User Console for the user. You cannot change the locale of the default admin account. |
| **Enable KACE Security Notifications** | Enable Quest to send security notifications to the email address of this administrator. This feature is available only to System-level administrator accounts. It is not available to Admin-level administrator accounts, or non-administrator user accounts. |
| **Enable KACE Sales and Marketing Notifications** | Enable Quest to send sales and marketing notifications to the email address of this administrator. This feature is available only to System-level administrator accounts; it is not available to Admin-level administrator accounts, or non-administrator user accounts. |

3. Click **Save**.

# Manage appliance administrator email notifications

Quest notifies appliance administrators of security issues and sales and marketing opportunities using email. You can enable or disable the email notifications for System-level (appliance) administrator accounts.

**Email notifications are available only to appliance administrator accounts. Notifications are not available to non-administrator users. If the Organization component is enabled on your appliance, notifications are not available to Admin-level administrator accounts in organizations.**

1. Go to the *User Detail* page or the *Administrator Detail* page:

   **To go the *User Detail* page:**

   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **Users**.
   c. Display the *User Detail* page by doing one of the following:

   - Click the name of a user.
   - Select **Choose Action** > **New**.

   **To go the *Administrator Detail* page:**

   a. Log in to the appliance System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page.
   b. On the left navigation bar, click **Settings**, then click **Administrators**.
   c. Display the *Administrator Detail* page by doing one of the following:

   - Click the name of an administrator
   - Select **Choose Action** > **New**.

2. Verify the user information, email address, and role.

   **NOTE:** To enable notifications, the user must have an appliance administrator role.

3. At the bottom of the form, select or clear the check boxes next to the notification fields to enable or disable email notifications for the administrator.

| Option | Description |
|---|---|
| **Enable KACE Security Notifications** | Enable Quest to send security notifications to the email address of this administrator. This feature is available only to System-level administrator accounts. It is not available to Admin-level administrator accounts, or non-administrator user accounts. |
| **Enable KACE Sales and Marketing Notifications** | Enable Quest to send sales and marketing notifications to the email address of this administrator. This feature is available only to System-level administrator accounts; it is not available to Admin-level administrator accounts, or non-administrator user accounts. |

4. Click **Save**.

# Delete System-level user accounts

If the Organization component is enabled on your appliance, you can delete user accounts at the System level. This option is available only if the Organization component is enabled on the appliance.

If the Organization component is not enabled on your appliance, follow the instructions in Managing organization user accounts.

**NOTE:** You cannot delete the default *admin* account.

1. Go to the *Administrators* list:

a. Log in to the appliance System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page.
b. On the left navigation bar, click **Settings**, then click **Administrators**.

2. Select the check box next to one or more accounts.
3. Select **Choose Action** > **Delete**, then click **Yes** to confirm.

# Managing organization user accounts

Organization user accounts provide the credentials that enable users to log in to the Administrator Console or User Console and access components based on the user role assigned to their account. You can add or edit user roles and user accounts as needed.

Organization user accounts authenticate users locally on the appliance. To use an LDAP server for user authentication, see Using an LDAP server for user authentication.

## Add or edit User Roles

User Roles are assigned to user accounts to control access to the Administrator Console and User Console. You can add or edit User Roles as needed.

However, you cannot edit the predefined roles: Administrator, No Access, Read Only Administrator, and User.

If the Organization component is enabled on your appliance, the permissions available to User Roles depends on the Organization Role assigned to the organization. See Managing Organization Roles and User Roles.

1. Go to the *Role Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **Roles**.
   c. Display the *Role Detail* page by doing one of the following:
   - Click the name of a role.
   - Select **Choose Action** > **New**.
2. In the *Name* field, provide a name, such as Service Desk Staff.

   **You cannot change the name of the predefined roles.**
3. If you want this role to be a default role for new roles, select the **Default role for new users** check box.
4. In the *Description* field, provide a brief description of the role, such as Used for Service Desk Administrators.

   **This description appears on the *Roles* list. You cannot change the description of predefined roles.**
5. Set the Administrator Console permissions.
   a. Under *Administrator Console Permissions*, click the **Expand All**.
   b. Set the permissions for each component, as applicable.
6. Set the User Console permissions.
   a. Under *End User Console Permissions*, click **User Console** to expand the list of permissions.
   b. Set the permissions for each component, as applicable.
7. Under *Device Scope*, specify the devices to which you want to grant full access with this role.

   **Role-based user access allows administrators to restrict actions to users based on the devices associated with their user role. You can grant access to all devices with a user with a specific role (a *scoped user*), or only to selected devices that are associated with a label.**

**TIP:** Labels are containers that enable you to organize and categorize items, such as devices, so that you can manage them as a group. For more information about labels, see About labels.

**TIP:** When a Smart Label is associated with a role, this is indicated on the *Smart Labels* list, in the *Name* column.

- To grant access to all devices in the appliance or organization (as applicable), select **All Devices**.
- To grant access only to devices associated with a specific label, click **Manage Associated Labels**, and select a label, as required.

8. Click **Save**.

The *Roles* page appears. When a user who is assigned to the role logs in, the appliance component bar shows the available features.

# Delete User Roles

You can delete User Roles provided that they are not assigned to any users and that they are not predefined User Roles. If the Organization component is enabled on your appliance, you delete User Roles for each organization separately.

**NOTE:** You cannot delete User Roles that are associated with one or more labels.

1. Go to the *Roles* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **Roles**.
2. Select the check box next to one or more roles.
3. Select **Choose Action** > **Delete**, then click **Yes** to confirm.

# Add or edit organization user accounts

You can add or edit user accounts at the organization level. If the Organization component is enabled on your appliance, you add and edit users accounts for each organization separately.

1. Go to the *User Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **Users**.
   c. Display the *User Detail* page by doing one of the following:
   - Click the name of a user.
   - Select **Choose Action** > **New**.

   **NOTE:** There can be a maximum of 50 organization in your system. Any attempts to create more organizations result in an error message.
2. Add or edit the following information:

| Option | Description |
|---|---|
| **Login** | (Required) The name the user types in the *Login ID* field on the login page. If you are editing the default *admin* account, you can change the login name, however use caution when changing the login and password of the *admin* account. The *admin* |

| Option | Description |
|---|---|
| | account login names and passwords on all linked appliances and organizations must be the same if you want to switch between them using the drop-down list in the top-right corner of the Administrator Console. The drop-down list shows only those appliances and organizations whose *admin* account login names and passwords are the same. |
| **Name** | The user's full name. |
| **Email** | The user's primary email address. |
| **Additional Emails** | One or more additional emails the user has access to. Separate multiple entries with commas. |
| **Domain** | The Active Directory domain associated with the user. |
| **Budget Code** | The code of the financial department associated with the user. |
| **Location** | The name of the work site or building where the user is located. Click and select a location from the drop-down list that appears. |
| **Work Phone, Home Phone, Mobile Phone, and Pager Number** | The user's telephone numbers. |
| **Custom 1-4** | Any additional information about the user or the user's account. |
| **Password and Confirm Password** | (Required) The password the user types when logging in. |
| **Role** | (Required) The role associated with the user. Roles are assigned to user accounts to control access to the Administrator Console and User Console. Default system roles include:<br>• **Administrator**: This user can log in to and access all features in the Administrator Console.<br>• **Read Only Administrator**: This user can log in but cannot modify any settings in the Administrator Console.<br>• **Administrator Console only**: This user can log in to the Administrator Console only.<br>• **No Access**: The user cannot log in to the Administrator Console or the User Console.<br>You cannot change the role of the default admin account. |
| **Locale** | The locale that is displayed when the user logs in to the Administrator Console or the User Console. |
| **Assign To Label** | The label associated with the user. |
| **Default Queue** | The queue used as the default for Service Desk tickets submitted by the user. |

| Option | Description |
|---|---|
| **Mobile Device Access** | Enable or disable Mobile Device Access for the user. Mobile device access enables you to interact with the appliance using the KACE GO app on iOS and Android smart phones and tablets. Administrators can use the app to access Service Desk, inventory, and application deployment features.<br>**NOTE:** This field is available when mobile device access is enabled on the appliance. See Configuring Mobile Device Access. |
| **Service Desk Tickets** | (Read only) Links to tickets created by the user. |
| **Associated Assets** | (Read only) Assets assigned to the user. For each user, the list shows the asset name, its type (for example, Software or Device), and the asset subtype (if applicable). You can sort the list by any column heading, as needed. |
| **Assigned Devices** | Devices assigned to the user. For each user, the list shows the device name, its subtype (if applicable), and an indication of whether a device is a primary user's device. You can sort the list by any column heading, as needed.<br>To assign a device to a user, click +, and select an asset. If you choose a device that is already assigned to another user, the ownership of that device shifts to this user.<br>The first device assigned to the user becomes the primary device by default. When multiple devices are assigned to a user, any device can be set as a primary device. |

3. Click **Save**.

**Related topics**

Add or edit User Roles

Configuring locale settings

About labels

Configuring Mobile Device Access

# Customize user details

You can modify the custom fields available in user accounts as needed.

**Every user account comes with a set of custom fields. You can edit these fields so that they can contain meaningful user-specific information, such as their badge number.**

1. Go to the *User Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Settings**, then click **Users**.
    c. Select **Choose Action > New** to display the *User Detail* page.
2. On the *User Detail* page, click *Customize Additional Fields*.

    **The** *User Custom Fields* **page appears.**
3. For each custom field, you can specify the following information:

| Option | Description |
|---|---|
| **Field Name** | The name of the custom field. |
| **Required** | An indicator of whether the field is required. |
| **Default Value** | The default value. |

4. Manage the collection of custom fields, as needed, using the available controls.
5. Click **Save**.

## Archive user accounts

When users are removed from your system, you have an option to archive their accounts prior to deleting them.

In order to archive user accounts, user archival must be enabled on the *General Settings* page. For more information, see Configure Admin-level or organization-specific General Settings.

Archived user accounts are maintained on the appliance in read-only mode. You can delete them, as needed. If you archive a user account, and add it to appliance again, a new user account is created, while the archived account is maintained until being removed. For example, if an employee leaves the organization and its user account becomes archived, if they join the organization again, a new user account is created without any association with the archived account. Similarly, if you archive a user account on the appliance without updating your organization's Active Directory, an LDAP import results in a new user account, that is not associated with the previously archived user.

**NOTE:** When user archival is enabled, user accounts can only be deleted only if they are marked as archived.

1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
2. On the left navigation bar, click **Control Panel** > **Users**.
3. Complete one of the following steps:
   - **On the *Users* list, select one or more user accounts that you want to archive and select Choose Action > Archive.**
   - **On the *Users* list, click the name of the user that you want to archive. On the *User Detail* page that appears, click Archive.**
4. In the dialog box that appears, click **Confirm**.

   **The dialog box closes, and the *Users* list refreshes, indicating that the user is in the Archived state (  ).**
5. If you want to review the details for an archived user, on the *Users* list, in the *Name* column, click the user name.

   **The *User Details* page appears, showing the user details in read-only mode.**

Next, you can delete archived user accounts, if needed.

# View or edit user profiles

You can view general information about your user profile, and edit some settings, when needed.

The *User Profile* dialog box allows every user to quickly change their password, review the devices and assets assigned to them, and any Service Desk Tickets that they created. Users with administrative-level permissions can also edit some additional parameters, such as their name, email, manager, and locale. They can also quickly

go to the *User Detail* page to review additional information about their account, and to make any changes, as needed.

For more information about editing user accounts using the *User Detail* page, see the following topics:

- Add or edit organization user accounts
- Add or edit System-level user accounts

1. Do one of the following:
   - **Log in to the appliance Administrator Console, `https://appliance_hostname/admin`, where appliance_hostname is the host name of your appliance. Or, if** *Show organization menu in admin header* **is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.**
   - **Log in to the appliance System Administration Console, `https://appliance_hostname/system`, where appliance_hostname is the host name of your appliance, or select System from the drop-down list in the top-right corner of the page.**
   - **Log in to the applianceUser Console, `https://appliance_hostname/user`, where appliance_hostname is the host name of your appliance, or select User Console from the drop-down list in the top-right corner of the page.**
2. From the drop-down list in the top-right corner of the page, select **My Profile**.

   **The** *User Profile* **dialog box appears.**
3. Review and edit the information on the *User Profile* dialog box, as needed.

**NOTE:** Users without administrative privileges can only update their passwords and view a limited set of information in this dialog box without making any additional changes or accessing the *User Detail* page.

| Tab | Option | Description |
|---|---|---|
| **Profile** | **Login** | The name the user types in the *Login ID* field on the login page.<br>**NOTE:** You cannot change the login of the default admin account. |
| | **Name** | The user's full name. |
| | **Primary Email** | The user's email address. |
| | **Manager** | The user's manager. |
| | **Locale** | The locale to use for the Administrator Console and User Console for the user. |
| | **Update Password** | The password the user types when logging in.<br>If the Organization component is enabled on your appliance, or if you want to link multiple K-Series appliances, use caution when changing the password of the **admin** account. **Admin** account passwords for the System-level, for organizations, and for linked appliances must be the same if you want to switch among them using the drop-down list in the top-right corner. The drop-down list shows only those organizations and appliances whose admin account passwords are the same. |

| Tab | Option | Description |
|---|---|---|
| **Devices** | **Name** | The device name. |
| | **Subtype** | The Asset Subtype for this device, if one is assigned. |
| | **Primary Device** | Indicates if the device is the primary device for the selected user. |
| **Assets** | **Name** | The asset name. |
| | **Type** | The asset type. |
| | **Subtype** | The Asset Subtype for this device, if one is assigned. |
| **Service Desk Tickets** | **Number** | The number of the Service Desk ticket the user logged. |
| | **Title** | The title of the Service Desk ticket the user logged. |
| | **Status** | The status of the Service Desk ticket the user logged. |

4. **Optional**. To access the *User Detail* page, in the top-left corner, click **View Full Profile**, and continue reviewing and editing the user profile on that page.

   **NOTE:** This link only appears if your account has administrative privileges.

5. To save your changes, click **Update**.

# Using an LDAP server for user authentication

User authentication can be done locally, using accounts created on the appliance, or externally, using an LDAP server.

If you use external LDAP server authentication, the appliance accesses a directory service to authenticate users. This allows users to log in to the appliance Administrator Console, User Console, or System Administration Console using their domain username and password.

For information about adding user accounts to the appliance for local user authentication, see:

- About user accounts and user authentication
- Managing user accounts for organizations

## About the login account on your LDAP server

To set up LDAP user authentication, you need to create a login account for the appliance on your LDAP server. The appliance uses this account to read and import user information from the LDAP server.

The account needs read-only access to the *Search Base DN* field on the LDAP server. The account does not need write access, because the appliance does not write to the LDAP server.

In addition, the account must have a password that never expires. Because the password never expires, make sure it is very secure. The user can change the password (that complies with the appropriate security requirements), however, the password must be updated on the appliance. You can give the account a username, such as KACE_Login, or you can attempt to connect to the LDAP server using an anonymous bind.

# Configure and test LDAP user authentication

You can configure and test connections from the appliance to an external LDAP server.

1. Do one of the following:
   - **Log in to the appliance Administrator Console, `https://appliance_hostname/admin`. Or, if *Show organization menu in admin header* is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.**
   - **Log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System from the drop-down list in the top-right corner of the page.**

   **The *Dashboard* or *System Dashboard* page appears.**
2. Go to the Admin-level or System-Level *Authentication Settings* page:
   a. On the left navigation bar, click **Settings**, then click **Control Panel**.
   b. On the *Control Panel*, click **User Authentication** (Administrator Console only), or **System User Authentication** (System Administration Console only).
3. If you want to disable the local admin account, and you are logged in as an administrative-level user through LDAP or SAML, select **Disable Local Built-In Administrator (LDAP or SAML configuration required)**.

   **Disabling the built-in admin account does not affect a tether used by KACE Support, when required. For more information about this feature, see Enable a tether to Quest KACE Support.**
4. Select the **LDAP Authentication** option:

| Option | Description |
|---|---|
| **Local Authentication** | Enable local authentication (the default). If local authentication is enabled, the password is authenticated against the existing entries in the local database at **Settings** > **Users**. |
| **LDAP Authentication** | Enable external user authentication using an LDAP server or Active Directory server.<br>If **LDAP Authentication** is enabled, the password is authenticated against the external LDAP server.<br>For assistance with authentication, contact Quest Support at https://support.quest.com/contact-support. |

5. Click the buttons next to the server names to perform the following actions:

| Button | Action |
|---|---|
| | Schedule a user import for the server. |
| | Modify the server definition. For information about the fields in this section, see Table 5. |
| | Remove the server. |

| Button | Action |
|---|---|
|  | Change the order of the server in the list of servers. |

6. **Optional**: Click **New** to add an LDAP server. You can have more than one LDAP server configured.

   **NOTE:** All servers must have a valid IP address or hostname. Otherwise, the operation times out, which results in login delays when using LDAP authentication.

7. To add a server, provide the following information:

**Table 5. Server information**

| Option | Description |
|---|---|
| **Name** | The name you want to use to identify the server. |
| **Host Name or IP Address** | The IP address or the hostname of the LDAP server. If the IP address is not valid, the appliance waits to timeout, resulting in login delays during LDAP authentication.<br>**NOTE:** To connect through SSL, use an IP address or hostname. For example: ldaps://hostname. |
| **Port** | The LDAP port number, which is usually 389 (LDAP) or 636 (secure LDAP). |
| **Base DN** | The criteria used to search for accounts.<br>This criteria specifies a location or container in the LDAP or Active Directory structure, and the criteria should include all the users that you want to authenticate. Enter the most specific combination of OUs, DCs, or CNs that match your criteria, ranging from left (most specific) to right (most general). For example, this path leads to the container with users that you need to authenticate:<br>`OU=end_users,DC=company,DC=com.`<br>**NOTE:** Domain Users is a special group that is not added to the `memberof` attribute values. For Domain Users members, use this format: (primaryGroupId=513). |
| **Advanced Search** | The search filter. For example:<br>`(&(sAMAccountName=KBOX_USERNAME)`<br>`(memberOf=CN=financial,DC=example,DC=com))` |
| **Login** | The credentials of the account the appliance uses to log in to the LDAP server to read accounts. For example:<br>`LDAP Login:CN=service_account,CN=Users,`<br>`DC=company,DC=com.`<br>If user name and password are not provided, the tree lookup is not performed.<br>Each LDAP Label can connect to a different LDAP or Active Directory server. |
| **Password** | The password of the account the appliance uses to log in to the LDAP server. |
| **Role** | (Required) The user's role:<br>• **Global Administrator**: The user can access the System Administration Console, and each organization's Administrator Console as an administrator with full read/write permissions. They must first log in to the System |

| Option | Description |
|---|---|
| | Administration Console, and then log in to the applicable organization account using the drop-down list in the top-right corner.<br>• **Administrator**: The user can log in to and access all features of the Administrator Console, User Console, or System Administration Console.<br>• **Read Only Administrator**: The user can log in, but cannot modify any settings in the Administrator Console, User Console, or System Administration Console.<br>• **User Console Only**: The user can log in only to the User Console . This role is only available in the Administrator Console.<br>• **No Access**: The user cannot log in to the Administrator Console, System Administration Console or User Console. **No Access** is the default role.<br>**NOTE:** These roles are predefined and you cannot edit them. However, you can create and edit custom roles as needed. |

**NOTE:** Record the search and filtering criteria you use for filling out this form. You use this same information to import user data, and later to schedule user import on a regular basis.

8. Click **Save**.
9. Test authentication on an external LDAP server as follows:
    a. Select the **LDAP Authentication**.
    b. Click the **Edit** button next to the server on which the user account you are testing is located .
    c. In the *Advanced Search:* box, replace **KBOX_USER** with the username to test. The syntax is `sAMAccountName=username`.
    d. Enter the user's password in the *Password for test* field.
    e. Click **Test**.

    If the test is successful, the authentication setup is complete for this user, and other users in the same LDAP container.

# Importing users from an LDAP server

You can import user information from LDAP servers to create user accounts on the appliance. This provides administrators, such as Service Desk staff, with a richer set of data to use when working with users.

There are two ways to import user information:

- **Manually:** See Import user information manually
- **According to a schedule:** See Import user information according to a schedule

**NOTE:** User information is overwritten each time users are imported to the appliance. Password information, however, is not imported. Users must enter their passwords each time they log in to the Administrator Console or User Console.

## Import user information manually

You can import user information manually by specifying criteria to identify the users you want to import.

1. Go to the *Users* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Settings**, then click **Users**.

c. Select **Choose Action > Import Users**.

2. Provide the following information:

**NOTE:** Use the LDAP Browser to specify the *Search Base DN* and *Search Filter*. See Use the LDAP Browser.

| Option | Description |
|---|---|
| **Server** | The IP address or the hostname of the LDAP server. If the IP address is not valid, the appliance waits to timeout, resulting in login delays during LDAP authentication.<br>**NOTE:** To connect through SSL, use an IP address or hostname. For example: ldaps://hostname. |
| **Port** | The LDAP port number, which is usually 389 (LDAP) or 636 (secure LDAP). |
| **Base DN** | The criteria used to search for accounts.<br>This criteria specifies a location or container in the LDAP or Active Directory structure, and the criteria should include all the users that you want to authenticate. Enter the most specific combination of OUs, DCs, or CNs that match your criteria, ranging from left (most specific) to right (most general). For example, this path leads to the container with users that you need to authenticate:<br>`OU=end_users,DC=company,DC=com.`<br>**NOTE:** Use the LDAP Browser to specify the Search Base DN and Search Filter. Use the LDAP Browser. |
| **Advanced Search** | The search filter. For example:<br>`(&(sAMAccountName=KBOX_USERNAME)`<br>`(memberOf=CN=financial,DC=example,DC=com))` |
| **Login** | The credentials of the account the appliance uses to log in to the LDAP server to read accounts. For example:<br>`LDAP Login:CN=service_account,CN=Users,`<br>`DC=company,DC=com.`<br>If user name and password are not provided, the tree lookup is not performed. Each LDAP Label can connect to a different LDAP or Active Directory server. |
| **Password** | The password of the account the appliance uses to log in to the LDAP server. |

3. Specify the LDAP attributes to import.

| Option | Description |
|---|---|
| **Attributes to retrieve** | Specify the LDAP attributes to retrieve. For example:<br>`sAMAccountName, objectguid, mail, memberof, displayname, sn, cn, userPrincipalName, name, description, manager`<br>The LDAP attributes specified in this field can be mapped to appliance User attributes on the next page. If this field is blank, the appliance retrieves all LDAP attributes. Leaving this field blank increases the time required to import attributes and is not recommended.<br>**IMPORTANT: To retrieve the manager object associated with the user, you must add the `manager` attribute to the list, and to specify this mapping in a later step.** |

| Option | Description |
|---|---|
| **Label Attribute** | Enter a label attribute. For example: `memberof`.<br>This setting returns a list of groups this user is a member of. The union of all the label attributes forms the list of labels you can import. If the search filter contains both the label names and user names, the label attribute is not required. |
| **Label Prefix** | Enter the label prefix. For example: `ldap_`<br>The label prefix is a string that is added to the beginning of all the labels. |
| **Binary Attributes** | Enter the binary attributes. For example: `objectsid`.<br>Binary attributes indicates which attributes should be treated as binary for purposes of storage. |
| **Maximum Number of Rows** | Enter the maximum number of rows to retrieve. This limits the result set that is returned in the next step. |
| **Debug Output** | Select the check box to view the debug output. |

4. Click **Next**.

   **The** *Define mapping between User attributes and LDAP attributes* **page appears.**

5. In the drop-down list next each attribute, select the value to use for appliance User attributes during import. Values in the drop-down list are the values specified in the *Attributes to retrieve* field on the previous page.

**The following attribute mappings are required:**

| Option | Description |
|---|---|
| **Ldap Uid** | The identifier for the user. Recommended value: `objectguid`. |
| **User Name** | The name of the user. Recommended value: `name`. |
| **Email** | The email address for the user. Recommended value: `mail`. |
| **Manager** | The manager of the user. This mapping is mandatory only if you want to retrieve the manager information. Recommended value: `manager`.<br>**IMPORTANT: To retrieve the manager object associated with the user, you must also add the `manager` attribute to the *Attributes to retrieve* box.** |

**The following attribute mappings are not required, but they are recommended:**

| Option | Description |
|---|---|
| **Api Enabled** | Whether users are enabled to access the appliance using the KACE GO app. Access is enabled if the field contains a numerical value. Access is disabled if the field contains no value. Therefore, to enable access, select an attribute that returns a numerical value. To disable access, select **No Value**. |

| Option | Description |
|---|---|
| **Ams Id** | Not used. Recommended value: **No Value**. |

6. **Optional**: In the *Role* drop-down list, select the role for the imported users. See Add or edit User Roles.
7. **Optional**: In the *Labels* drop-down list, select the label to apply to imported users. See About labels.
8. In the *Search Results* section below the attribute mapping drop-down lists, verify that the list of users to import is correct, and the information listed for each user is what you expect. To refine your search, click the **Back** button and revise the search parameters and attributes.

   **For example, to change the number of** *Search Results***, change the** *Maximum Number of Rows* **on the** *Choose attributes to import* **page.**
9. Click **Next** to display the *Import Data into the appliance* page.
10. Review the tables of users to ensure that the data is valid and includes the data that you expect.

    **Only users with values for the required attributes,** *Ldap Uid*, *User Name*, *Email*, **and** *Manager* **are imported. Records that do not have these values are listed in the** *Users with invalid data* **section.**
11. Click **Import Now** to start the import.

The *Users* page appears, and the imported users appear on the list. The imported users can access the features of the Administrator Console, User Console based on the role to which they are assigned.

# Import user information according to a schedule

To keep user data current, schedule regular user data imports from your LDAP server.

1. Go to the Admin-level *Authentication Settings* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **Control Panel**.
   c. On the *Control Panel*, click **User Authentication** (Administrator Console only), or **System User Authentication** (System Administration Console only).
2. Select **LDAP Authentication**, then click the **Schedule** button next to the server name in the list of servers to schedule a user import:

   **The** *User Import: Schedule – Choose attributes to import* **page appears.**

   The following *Read Only Administrator Server Details* are displayed:

| Option | Description |
|---|---|
| **Server** | The IP address or the hostname of the LDAP server. If the IP address is not valid, the appliance waits to timeout, resulting in login delays during LDAP authentication.<br>**NOTE:** To connect through SSL, use an IP address or hostname. For example: ldaps://hostname. |
| **Port** | The LDAP port number, which is usually 389 (LDAP) or 636 (secure LDAP). |
| **Base DN** | The criteria used to search for accounts.<br>This criteria specifies a location or container in the LDAP or Active Directory structure, and the criteria should include all the users that you want to authenticate. Enter the most specific combination of OUs, DCs, or CNs that match your criteria, ranging from left (most specific) to right (most general). For example, this path leads to the container with users that you need to authenticate: |

| Option | Description |
|---|---|
| | `OU=end_users,DC=company,DC=com`.<br>**NOTE:** Use the LDAP Browser to specify the Search Base DN and Search Filter. Use the LDAP Browser. |
| **Advanced Search** | The search filter. For example:<br>`(&(sAMAccountName=KBOX_USERNAME)(memberOf=CN=financial,DC=example,DC=com))` |
| **Login** | The credentials of the account the appliance uses to log in to the LDAP server to read accounts. For example:<br>`LDAP Login:CN=service_account,CN=Users,`<br>`DC=company,DC=com`.<br>If user name and password are not provided, the tree lookup is not performed. Each LDAP Label can connect to a different LDAP or Active Directory server. |
| **Password** | The password of the account the appliance uses to log in to the LDAP server. |

3. Specify the LDAP attributes to import.

| Option | Description |
|---|---|
| **Attributes to retrieve** | Specify the LDAP attributes to retrieve. For example:<br>`sAMAccountName, objectguid, mail, memberof, displayname, sn, cn, userPrincipalName, name, description, manager`<br>The LDAP attributes specified in this field can be mapped to appliance User attributes on the next page. If this field is blank, the appliance retrieves all LDAP attributes. Leaving this field blank increases the time required to import attributes and is not recommended.<br>**IMPORTANT: To retrieve the manager object associated with the user, you must add the `manager` attribute to the list, and to specify this mapping in a later step.** |
| **Label Attribute** | Enter a label attribute. For example: `memberof`.<br>This setting returns a list of groups this user is a member of. The union of all the label attributes forms the list of labels you can import. If the search filter contains both the label names and user names, the label attribute is not required. |
| **Label Prefix** | Enter the label prefix. For example: `ldap_`<br>The label prefix is a string that is added to the beginning of all the labels. |
| **Binary Attributes** | Enter the binary attributes. For example: `objectsid`.<br>Binary attributes indicates which attributes should be treated as binary for purposes of storage. |
| **Maximum Number of Rows** | Enter the maximum number of rows to retrieve. This limits the result set that is returned in the next step. |

| Option | Description |
|---|---|
| **Debug Output** | Select the check box to view the debug output. |

4. In the *Email Recipients* section, click the **Edit** button to enter the recipient's email address  .
5. Select users in the *Recipients* drop-down list.
6. In the *Schedule* section, specify schedule options:

| Option | Description |
|---|---|
| **None** | Run in combination with an event rather than on a specific date or at a specific time. This option is useful if you want to patch servers manually, or perform patch actions that you do not want to run on a schedule. |
| **Every _ hours** | Run at a specified interval. |
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |
| **Run on the n**th **of every month/ specific month at HH:MM** | Run on the **n**th day every month, (for example, the first or the second) day of every month, or a specific month, at the specified time. |
| **Run on the nth weekday of every month/specific month at HH:MM** | Run on the specific weekday of every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>`* * * * *`<br>`\| \| \| \| +————————day of week (0-6)(Sun=0)`<br>`\| \| \| +————————month (1-12)`<br>`\| \| +————————day of month (1-31)`<br>`\| +————————hour (0-23)`<br>`+————————minute (0-59)`<br>Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (/)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3. |

| Option | Description |
|---|---|
| | Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |
| **View Task Schedule** | Click to view the task schedule. The *Task Schedule* dialog box displays a list of scheduled. Click a task to review the task details. For more information, see View task schedules. |

7. Click **Next** to display the *User Import: Schedule - Define mapping between User attributes and LDAP Attributes* page.
8. In the drop-down list next each attribute, select the value to use for appliance User attributes during import. Values in the drop-down list are the values specified in the *Attributes to retrieve* field on the previous page.

**The following attribute mappings are required:**

| Option | Description |
|---|---|
| **Ldap Uid** | The identifier for the user. Recommended value: `objectguid`. |
| **User Name** | The name of the user. Recommended value: `name`. |
| **Email** | The email address for the user. Recommended value: `mail`. |
| **Manager** | The manager of the user. This mapping is mandatory only if you want to retrieve the manager information. Recommended value: `manager`.<br>**IMPORTANT: To retrieve the manager object associated with the user, you must also add the `manager` attribute to the *Attributes to retrieve* box.** |

**The following attribute mappings are not required, but they are recommended:**

| Option | Description |
|---|---|
| **Api Enabled** | Whether users are enabled to access the appliance using the KACE GO app. Access is enabled if the field contains a numerical value. Access is disabled if the field contains no value. Therefore, to enable access, select an attribute that returns a numerical value. To disable access, select **No Value**. |
| **Ams Id** | Not used. Recommended value: **No Value**. |

9. **Optional**: In the *Role* drop-down list, select the role for the imported users. See Add or edit User Roles.
10. If you want the selected role to be a default role for new roles, select the **Make default** check box.
11. **Optional**: In the *Labels* drop-down list, select the label to apply to imported users. See About labels.
12. In the *Search Results* section below the attribute mapping drop-down lists, verify that the list of users to import is correct, and the information listed for each user is what you expect. To refine your search, click the **Back** button and revise the search parameters and attributes.

**For example, to change the number of** *Search Results*, **change the** *Maximum Number of Rows* **on the** *Choose attributes to import* **page.**

13. Click **Next** to display the *Import Data into the appliance* page.
14. Review the tables of users to ensure that the data is valid and includes the data that you expect.

    **Only users with values for the required attributes,** *Ldap Uid*, *User Name*, *Email*, **and** *Manager*, **are imported. Records that do not have these values are listed in the** *Users with invalid data* **section.**
15. Do one of the following:
    - **Click Back to change settings.**
    - **Click Import to save the schedule and import user information immediately. The import begins, and the schedule is set to run according to the options selected in** *Scheduling* **section.**
    - **Click Finish to save the schedule without importing user information. The schedule is set to run according to the options selected in the** *Scheduling* **section.**

    **User information is imported according to the specified schedule.**

# About single sign on (SSO)

Single sign on enables users who are logged on to the domain, or authenticated through a third-party, to access the appliance Administrator Console and User Console without having to re-enter their credentials on the appliance login page.

You can use Active Directory for single sign on.

Single sign on is available for:

- **One domain only**: If you have multiple domains, only one can be enabled for single sign on. This is true even if the Organization component is enabled on the appliance, and you have multiple organizations that are on different domains. Single sign on is a System-level configuration, and organizations cannot be configured independently for single sign on.
- **Microsoft Active Directory servers**: You can enable single sign on using Microsoft Active Directory servers with 2003 R2 or higher schema versions. Earlier schema versions cannot be used. If the Organization component is enabled on your appliance, the Active Directory single sign on method can be used with multiple organizations.

## Using external LDAP or Active Directory servers for single sign on

When using Active Directory for authentication for single sign on, the external LDAP or Active Directory server must have the same entries as the Active Directory server specified for single sign on. The appliance matches user credentials on the joined domain, and then it uses the external LDAP configuration to determine user roles and privileges.

To authenticate users by using local accounts on the appliance, you need to either import accounts from an LDAP or Active Directory server to the appliance, or manually create accounts on the appliance. See:

- Importing users from an LDAP server
- Managing System-level user accounts
- Managing organization user accounts

# Enabling and disabling single sign on

You can enable or disable single sign on in the appliance security settings.

## Enable single sign on

To enable single sign on, you need to configure the appliance Security Settings to establish a connection between an Active Directory server and the appliance.

- To configure single sign on for Active Directory, see Configure Active Directory as the single sign on method

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Security Settings** to display the *Security Settings* page.
3. In the *Single Sign On* section, select a single sign on method.

- Configure Active Directory as the single sign on method

## Disable single sign on

You can disable single sign on without removing the appliance from the domain.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Security Settings** to display the *Security Settings* page.
3. In the *Single Sign On* section, select **Disable**.

   **Single sign on is disabled. Users who are currently logged in to the Administrator Console or User Console remain logged in until their sessions end. The next time they attempt to access the Administrator Console or User Console, however, they are required to enter their credentials.**

# Using Active Directory for single sign on

When single sign on is configured to use Active Directory, authenticated users can access the Administrator Console or the User Console without having to enter login credentials.

To do so, users must type the hostname of the appliance in the browser address field. If users enter an IP address, they are directed to the appliance login page, instead of being signed on automatically, and they must enter their credentials to log in.

If you use Active Directory for single sign on, you must configure Microsoft Edge and Mozilla Firefox browsers to use the appropriate security settings.

# Configure Active Directory as the single sign on method

Active Directory single sign on enables users who are logged on to the domain to access the appliance Administrator Console and User Console without having to re-enter their logon credentials each time.

Before you connect the appliance to an Active Directory server, verify that:

- Network and DNS settings are configured to enable the appliance to access the Active Directory server. See Change appliance network settings.
- The time settings on the Active Directory server match the time settings on the appliance. For information on setting the time on the appliance, see Configure appliance date and time settings.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. In the *Single Sign On* section of the *Security Settings* page, select **Active Directory**, then provide the following information:

| Option | Description |
|---|---|
| **Domain** | The host name of the domain of your Active Directory® server, such as example.com. |
| **Username** | The user name of the administrator account on the Active Directory server. For example, username@example.com. |
| **Password** | The password of the administrator account on the Active Directory server. |
| **Computer Object Container** | The name of the computer object container of the administrator account on the Active Directory server. |
| **Computer Object Name** | The name of the computer object container of the administrator account on the Active Directory server. |
| **Service Account Container** | The name of the service account container of the administrator account on the Active Directory server. |

3. Click **Join**.

**The appliance performs the following tests, which require read-only permission, to determine whether the domain is configured correctly to allow the appliance to join the domain:**

- Check for supported operating system and correct operating system patches
- Check for sufficient disk space to install QAS
- Check that the hostname of the system is not 'localhost'
- Check if the name service is configured to use DNS
- Check resolv.conf for proper formatting of name service entries and that the host can be resolved
- Check for a name server that has the appropriate DNS SRV records for Active Directory
- Detect a writable domain controller with UDP port 389 open
- Detect Active Directory site if available
- Check if TCP port 464 is open for Kerberos kpasswd
- Check if UDP port 88 and TCP port 88 are open for Kerberos traffic
- Check if TCP port 389 is open for LDAP
- Check for a global catalog server and if TCP port 3268 is open for communication with global catalog servers
- Check for a valid time skew against Active Directory
- Check for the QAS application configuration in Active Directory
- Check if TCP port 445 is open for Microsoft CIFS traffic

These tests do not need write access and they do not check for permission to write to any directory. In addition, these tests do not verify username and password credentials. If the credentials are incorrect, the appliance might not be able to join the domain even if the tests are successful.

A message appears stating the results of the test. To view errors, if any, click **Logs**, then in the *Log* drop-down list, select **Server Errors**.

4. **Optional**: Select **Force Join** to join the server to ignore errors and join the domain.
5. Click **Save and Restart Services**.

When users are logged in to devices that are joined to the Active Directory domain, they can access the appliance User Console without having to re-enter their credentials. If users are on devices that are not joined to the Active Directory domain, the login window appears and they can log in using a local appliance user account. See Add or edit System-level user accounts.

**NOTE:** To use single sign on with Microsoft Edge and Firefox browsers, users must configure their browser settings to use the appropriate authentication. See Configuring browser settings for single sign on.

# Configuring browser settings for single sign on

To use Active Directory single sign on with Microsoft Edge™ and Firefox® browsers, users must configure their browser settings to use the appropriate authentication. The Chrome™ browser does not require any special configuration.

### Configure Microsoft Edge browser settings

To use Active Directory single sign on with the Microsoft Edge, you must configure the Windows security settings.

1. In the Windows Control Panel, click **Internet OptionsTools > Internet Options > Security**.
2. In the *Internet Properties* dialog box that appears, on the *Security* tab, select the appropriate security policy:
   - **If the appliance is available on the Internet select Trusted Sites.**
   - **If the appliance is not available on the Internet, select local intranet.**
3. Click **Custom level**, then scroll to the bottom of the list.
4. Select **Automatic logon with current username and password**. If this option is not selected, Microsoft Edge cannot automatically log in to the Administrator Console or User Console even if single sign on is enabled on the appliance.

### Configure Firefox browser settings

To use Active Directory single sign on with Firefox, you must configure the browser's authentication settings.

1. In the Firefox browser, type about:config in the address bar.
2. In the *Search* field type the following network.negotiate-auth.trusted-uris.
3. In the search results, double-click the name of the preference.
4. In the string value box, enter the URL of the appliance. For example, http://kace_sma.example.com, then click **OK**.

### Use Active Directory single sign on to access the Administrator Console or User Console

When Active Directory single sign on is enabled on the appliance, users who are logged in to the domain can access the Administrator Console or User Console without entering their credentials on the appliance login page.

Single sign on must be enabled through Active Directory. See Enable single sign on.

1. Log in to the domain.
2. In a web browser, type the hostname of the appliance in the browser address field. To identify the host name, see Change appliance network settings.

   **TIP:** If you enter the appliance IP address, you are directed to the appliance login page instead of being signed on automatically.

   **The Administrator Console or User Console appears, depending on user account privileges.**

## Unjoin the domain and disable Active Directory single sign on

You can remove the appliance from the Active Directory domain. Removing the appliance from the domain automatically disables single sign on as well.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Security Settings** to display the *Security Settings* page.
3. In the *Single Sign On* section, click **Unjoin Domain**.

**NOTE:** Users who are currently logged in to the User Console or Administrator Console remain logged in until their session ends. The next time they attempt to access the User Console or Administrator Console, however, they are required to enter their credentials.

# Configure SAML for single sign on

You can configure the appliance to authenticate users without providing their credentials on the *Welcome* page using a third-party authentication tool.

Security Assertion Markup Language (SAML) is an XML-based protocol that uses security tokens between identity and service providers. The security tokens contain assertion elements that provide information about the user's identity.

When SAML is enabled and configured on the appliance, and the user logs in using this single sign-on method, the appliance sends an authorization request to your Identity Provider (IdP). The identity provider then confirms the user's identity and sends an authentication response to the appliance. Next, the appliance logs the user in to the Administrator Console (or User Console) and establishes the user session. When a SAML user logs out of the appliance, they are logged out of their IdP account. If you want to continue to be logged into your IdP account after using the appliance, simply close the Administrator Console browser window without signing out. If a SAML user's session times out, and they are still logged into their IdP account, the appliance automatically starts a new session for that user.

If you have multiple organizations, you can configure SAML in each organization that uses this method of authentication, and keep the local login method for other organizations.

1. Ensure that your IdP has valid identity information for logging you in to the appliance.
2. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
3. Go the *SAML Settings* page:
    a. On the left navigation bar, click **Settings**, then click **SAML Configuration**.
    b. On the *SAML Settings* page, under *Security Assertion Markup Language (SAML)*, select the **Enable SAML Service Provider** check box.
4. If you want to allow users to only use SAML to access this appliance, select **Require SAML login**.

    **This option causes all local logins to the appliance to be disabled, with the exception of the local admin user and the KACE Support account (available only with an active Support tether).**
5. In the *Remote Identity Provider (IdP) Settings* section, specify your IdP metadata to authenticate users by completing one of the following steps.
    - **Recommended. If your IdP provides an URL to the XML page containing the IdP metadata (suggested option), click Get Metadata From IdP. In the *IdP Metadata URL* field that appears, type that URL, and click Import IdP Metadata.**
    - **To use your IdP metadata XML file, click Enter XML Metadata, and in the *IdP Metadata XML* field that appears, copy and paste the contents of the XML file. Then click Import IdP Metadata. The appliance parses the provided XML content and populates the settings required to establish a connection with the IdP.**

    **The *Remote Identity Provider (IdP) Settings* section refreshes, showing the details of your IdP configuration. The listed options specify the appliance page redirects during SAML authentication. For more information, visit https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=security.**

**NOTE:** To review this information anytime during your SAML configuration, click **View Metadata** in this section.

6. In the *IdP Attribute Mappings* section, select the option that you want to use to grant the SAML user access to the appliance.
   - **Use Local User Table: Relies on the user list stored locally on the appliance.**
   - **Use LDAP Lookup: Imports user information from an external LDAP server. For more information, see Using an LDAP server for user authentication.**
   - **Use SAML: Uses the values specified on this page to map to the fields used by your IdP to the appliance user records, such as name, email address, and so on. For example, if the IdP uses LDAP to authenticate users, you can set *UID* and *Login* to `objectGUID` and `cn`, respectively. For more information, see your IdP documentation.**
7. If you selected **Use SAML**, indicate if you want to create a new user on the appliance for authenticated SAML users that do not have accounts on the appliance. To do that, select **Create new SMA user if authenticated SAML user does not exist on SMA**.
8. If you selected **Use SAML**, specify the roles that you want to grant to the SAML-authenticated user. Under *Role Mapping*, specify the conditions that you want to check when granting the roles.

   **For example, you can grant the *Administrator* role to the members of an LDAP group whose name contains a specific text string (such as `admin`), set the Administrator role as follows:**

   *Administrator* `memberOf` *Contains* `admin`

   **The roles are listed in the order of priority. You can change the role priority by dragging and dropping them, as needed. If there are multiple matches, the appliance grants the role with the highest priority to the SAML user.**

   **Role mapping is optional. If no matches are found, the appliance assigns the default role. To specify the default role, click Default Role for Unmatched Users, and choose a role from the available options, as applicable: *Administrator*, *No Access*, *Read Only Administrator*, or *User Console Only*.**
9. **Optional**. To view the appliance-specific SAML settings on the appliance, in the *Local Service Provider (SP) Settings* section, click **View Metadata**, and review the options that appear.

   **These fields contain default values and in most cases you do not need to make any changes.**
10. Click **Save**.
11. Test your SAML configuration.
    a. Log out of the appliance.
    b. Ensure you are logged in to your IdP account.
    c. Open the Administrator Console or User Console Welcome page.
    d. Without specifying your user credentials, click **Login**.

    **TIP:** When SAML is enabled on the appliance, click **Local Sign On**, and specify your user credentials.

    **The Administrator Console or User Console page appears.**

# Example: Using Microsoft Active Directory in Azure as a SAML Identity Provider

When you use Active Directory in Azure as a SAML Identity Provider (IdP), some additional steps are required. This topic describes the process of configuring SAML with Active Directory as an IdP.

1. Ensure that your IdP has valid identity information for logging you in to the appliance.
2. Complete the following steps:

a. Enable SSL for the appliance. This step is required because Microsoft Azure can successfully communicate only with SSL clients. For instructions, see Configure security settings for the appliance.
b. Log in to https://portal.azure.com and select **Azure Active Directory**.
c. Under **App Registrations**, create a new registration, leaving the *Redirect URI* settings cleared.
d. In the newly created App Registration, on the *Endpoints* page, copy the contents of the *Federation metadata document* field.

3. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
4. Go the *SAML Settings* page:
   a. On the left navigation bar, click **Settings**, then click **SAML Configuration**.
   b. On the *SAML Settings* page, under *Security Assertion Markup Language (SAML)*, select the **Enable SAML Service Provider** check box.
5. In the *Remote Identity Provider (IdP) Settings* section, specify your IdP metadata to authenticate users by completing the following steps.
   a. Click **Get Metadata From IdP**.
   b. In the *IdP Metadata URL* field that appears, enter the contents from the *Federation metadata document* field that you recorded in 2.d, and click **Import IdP Metadata**.

   **The *Remote Identity Provider (IdP) Settings* section refreshes, showing the details of your IdP configuration. The listed options specify the appliance page redirects during SAML authentication. For more information, visit https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=security.**

   **NOTE:** To review this information anytime during your SAML configuration, click **View Metadata** in this section.
6. In the *Security Assertion Markup Language (SAML)* section, ensure the **IdP Does Not Support Passive Authentication** check box is selected.
7. In the *IdP Attribute Mappings* section, select the option that you want to use to grant the SAML user access to the appliance.
   - **Use Local User Table: Relies on the user list stored locally on the appliance.**
   - **Use LDAP Lookup: Imports user information from an external LDAP server. For more information, see Using an LDAP server for user authentication.**
   - **Select Use SAML, and set the following options:**
     - **UID**: http://schemas.microsoft.com/identity/claims/objectidentifier
     - **Login**: http://schemas.xmlsoap.org/ws/2005/05/identity/claims/name
     - **Name**: http://schemas.microsoft.com/identity/claims/displayname
     - **Primary Email**: http://schemas.xmlsoap.org/ws/2005/05/identity/claims/name
8. If you selected the **Use SAML** option, under *Role Mapping*, specify the following condition for the role that you want to grant to SAML-authenticated users (for example, the *Administrator* role):

   **`http://schemas.microsoft.com/ws/2008/06/identity/claims/groups`** *equals* **`<Object ID>`**

   **Where `<Object ID>` is the object ID of the group.**
9. **Optional**. To view the appliance-specific SAML settings on the appliance, in the *Local Service Provider (SP) Settings* section, click **View Metadata**, and review the options that appear.

   **These fields contain default values and in most cases you do not need to make any changes.**
10. Complete the following steps:
    a. In the *Local Service Provider (SP) Settings* section, click **View Metadata**
    b. In the Microsoft Azure Portal, locate the newly created App Registration.

c. On the App Registration page, click **Add a Redirect URI**.
d. In the *Redirect URIs* section, select **Web** and set it to the *SP Assertion Consumer Service (url)* value from the *SAML Settings* page, under *Local Service Provider (SP) Settings*.
e. In the *Advanced settings*, set the *Logout URL* field to the *SP SLO Endpoint (url)* value from the *Local Service Provider (SP) Settings* section.
f. In Azure, click **Expose an API**, and click **Set** next to *Application ID URI*. Set this field to the *SP Entity Identifier (uri)* value from the *Local Service Provider (SP) Settings* section.
g. In Azure, click **Manifest**, and in the editor that appears on the right, add or update the `"groupMembershipClaims"` attribute and set its value to `"SecurityGroup"` or `"All"`.

**For example:** `"groupMembershipClaims": "SecurityGroup",`

11. Click **Save**.
12. Test your SAML configuration.
    a. Log out of the appliance.
    b. Ensure you are logged in to your IdP account.
    c. Open the Administrator Console or User Console Welcome page.
    d. Without specifying your user credentials, click **Login**.

**TIP:** When SAML is enabled on the appliance, click **Local Sign On**, and specify your user credentials.

**The Administrator Console or User Console page appears.**

# Reviewing user sessions

The appliance keeps track of user sessions. You can review a list of the most recent sessions, or see all sessions for the appliance.

To allow the appliance to display the location associated with the logged-in user's public IP address, you must install a location database. See Install and configure the location database.

You can see all sessions on the *Recent Sessions* page. For a quick list of the latest sessions associated with your user account, use the *My Recent Sessions* pane. See View a list of user sessions.

## Install and configure the location database

User session details include the IP address of the currently logged-in user. This information is displayed on the *Recent Sessions* page. For public IP addresses you can also display the geographical location associated with a specific IP address, however this requires a location database to be installed on the appliance. You can install the MaxMind *Geolocation* database free of charge and display user locations for any public IP address.

MaxMind offers country and city databases. A city database is typically larger in size and takes longer to install. A country database provides only the name of the country associated with each public IP address, while a city database allows the appliance to display the city, state (if applicable), and the country.

You can periodically refresh the location database by installing an updated version. While it is possible to install multiple databases over time, the most recently installed database overwrites the contents of the previous version. For example, if a country database is already installed, and you install a city database on the appliance, the *Location* column on the *Recent Sessions* page reflects the information from the newly installed city database.

For complete information about MaxMind Geolocation databases, visit https://www.maxmind.com/.

**NOTE:** Locations cannot be displayed when a private IP address is used to access the appliance.

1. Download a location database from https://www.maxmind.com/.

**NOTE:** To download a database file from MaxMind, start by creating a user profile. You must download a file that uses the `MMDB` format, not a `CSV` file.

2. Do one of the following:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
3. On the *General Settings* page that appears, in the *Geolocation Lookup Database* section, point to the downloaded ZIP file.

   **To do that, under *MaxMind Geolocation Database*, click Choose file and navigate to the newly downloaded file.**
4. Click **Save**.

   **It may take a few minutes for the database installation to complete, depending on the type of database being installed. When the installation is complete, the *Database Type* and *Database Version* fields provide the relevant details.**

**NOTE:** A city database typically takes longer to install and update than a country database due to its file size.

Next, you can go to the *Recent Sessions* page and review the location data for the current user. See View a list of user sessions.

# View a list of user sessions

You can review user sessions on the appliance. Use the *My Recent Sessions* pane to see the latest sessions associated with your account. You can also review all sessions that are currently active on the appliance on the *Recent Sessions* page.

**In case the appliance detects multiple sessions for the current user, the icon displays a red exclamation point.**

1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
2. In the top-right corner, click the Recent Sessions icon.

   **NOTE:** If there are multiple active sessions associated with your user account, an exclamation mark appears on the Recent Sessions icon.
3. In the *My Recent Sessions* pane that appears, review the list of your latest user sessions.

   **Each entry identifies your browser, IP address, session duration, the date and time of the most recent activity, and any applicable actions.**

   **NOTE:** You can delete duplicated sessions by clicking the Delete icon in the *Actions* column, as needed.
4. To see all sessions that are currently active on the appliance, in the *My Recent Sessions* pane, click *View All Recent Sessions*.

   **On the *Recent Sessions* page that appears, each entry displays the user name, the browser used, the operating system, IP address, the session duration, the date and time of the last activity, and any applicable actions. For users with a public IP address, if you have a location database installed, it also shows their location. See Install and configure the location database.**

# Deploying the KACE Agent to managed devices

The KACE Agent is an application that can be installed on devices to enable inventory reporting and other device management features. KACE Agents installed on managed devices communicate with the appliance through an agent messaging protocol. Agents perform scheduled tasks, such as collecting inventory information from, and distributing software to, managed devices.

You can deploy the KACE Agent to managed devices using one of the following methods.

**TIP:** Only authenticated KACE Agents can establish a successful connection with the appliance. For more information, see Registering KACE Agent with the appliance.

- **Provisioning the KACE Agent**: You can use the Agent Provisioning Assistant to perform provisioning for devices with Windows, Mac OS X, and Linux operating systems. Within the Assistant, you can choose between using the appliance GPO Provisioning Tool for deploying the Agent to Windows devices, or using Onboard Provisioning for deploying the Agent to Windows, Mac OS X, or Linux devices. See Provisioning the KACE Agent.
- **Manually deploying the KACE Agent**: Use manual deployment is useful when automated Agent provisioning is not practical or when you want to deploy the KACE Agent using email, logon scripts, GPO (Group Policy Objects), or Active Directory. The appliance includes KACE Agent installers for different OS platforms. Each platforms offers one or more ways to deploy the KACE agent. To get started, visit the following sections and their sub-topics:
  - Manually deploying the KACE Agent on Windows devices
  - Manually deploying and upgrading the KACE Agent on Linux devices
  - Manually deploying and upgrading the KACE Agent on Mac devices

# Using Replication Shares

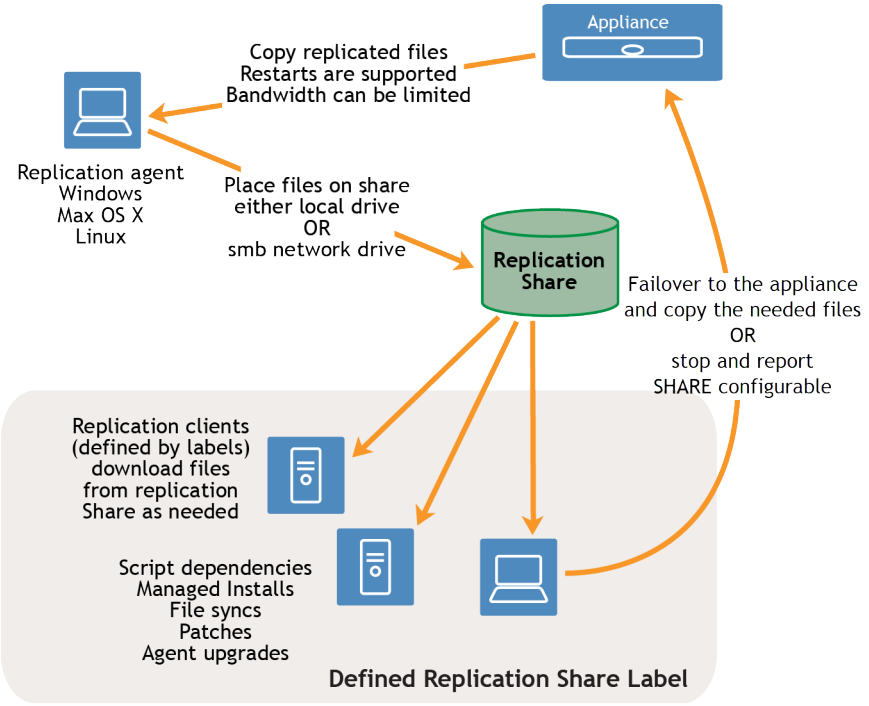
Replication Shares are devices that keep copies of files for distribution, and they are especially useful if your managed devices are deployed across multiple geographic locations.

For example, using a Replication Share, a device in New York could download files from another device at the same office, rather than downloading those files from a appliance in Los Angeles. A Replication Share is a full replication of all digital assets and is managed automatically by the appliance. Whenever a Replication Share is specified for a label, devices in that label go to the Replication Share to get files.

In addition, you can use Replication Shares to deploy of Managed Installations, patches, or Dell Updates where network bandwidth and speed are issues. Replication Shares are good alternatives to downloading directly from an appliance.

Replication Shares enable an appliance to replicate application installers, patches, upgrades, and script dependencies to a shared folder on a device. If any replication item is deleted from the appliance, it is marked for deletion in the Replication Share and deleted in the replication task cycle. The figure shows a Replication Share configuration and task flow.

**Figure 9. Replication Share configuration**




To create a Replication Share, identify one device at each remote location to act as a **Replication Device**. The appliance copies all the replication items to the Replication Device at the specified destination path. The replication process automatically restarts if it is stopped due to a network failure or replication schedule. If stopped, the replication process restarts at the point it was stopped.

**Sneaker net share**: You can create a folder and copy the contents of an existing replication folder to it. You can then specify this folder as the new replication folder in the appliance. The appliance determines whether the new folder has all the replication items present and replicates only the new ones, which conserves bandwidth. You can manually copy the contents of replication folder to a new folder. The replication folder created in a device follows following hierarchy:

```
\\machinename\foldername\repl2\replicationitems folder
```

The device name and folder name is user defined while `repl2` is automatically created by appliance. The replication items folder includes the folder for patches, kbots, upgrade files, and applications.

All the replication items are first listed in the replication queue and then copied one at a time to the destination path. Any new replication item is first listed in the replication queue and then copied after an interval of 10 minutes.

Replication items are copied in this order:

1. Script dependencies
2. Applications
3. Agent upgrades
4. Patches

# Create Replication Shares

You can create Replication Shares on managed devices.

To create a Replication Share you must:

- Have **write** permission on the destination path to write the software files.
- Install the KACE Agent on the Replication Share.
- Create a label for your devices before starting the process.

Replication Shares can be created only on devices that appear on the *Devices* list in Inventory. If the device you want to use is not on the *Devices* list, you need to create an inventory record for the device before you can use it as a Replication Share.

See Managing inventory information.

1. Go to the *Replication Schedule Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Distribution**, then click **Replication**.
    c. Select **Choose Action** > **New**.
2. In the *Configure* section, select the **Enabled** check box.
3. **Optional**: Select **Failover To Appliance** to use the appliance when the Replication Share is not available.

    **NOTE:** Enable **Failover To Appliance** only after testing the Replication Share.

4. In the *Device* drop-down list, select the device to use as a Replication Share.

    **The Replication Share can be created by two methods:**

    - **Locally**
    - **On a shared network drive**

5. Select the **Operating System** and **Locales** of the patches to replicate. The lists are populated based on the operating systems and locales selected in the patch subscription.
6. Select the **Include Application Patches**, **Include Windows Feature Updates**and **Include Dell Updates** check boxes to copy the patch and update files to the Replication Share.
7. Specify the *Destination Share* settings:

| Option | Description |
|---|---|
| **Path** | The path the Replication device uses for the Replication Share. Applications are copied from the appliance to this location. For a local drive, use local drive syntax, for example: `C:\`**kace_sma_share**<br>For a network drive, use UNC format, for example: `\\`**kaceRep**`\`**kace_sma_share**`\`<br>**NOTE:** **$** notation, for example `\\`**KaceRep**`\e$`, is not supported. |
| **Local Share** or **UNC** | Select whether to use a Local Share or UNC. |
| **Credentials** | The details of the service account required to connect to the device and run commands. Select existing credentials from the drop-down list, or select **Add new credential** to add credentials not already listed.<br>See Add and edit User/Password credentials. |

| Option | Description |
|---|---|
| **Label** | The label of the devices using the Replication Share. Verify that the selected label does not have KACE_ALT_LOCATION specified. KACE_ALT_LOCATION takes precedence over the Replication Share for downloading files to devices. |

8. Specify the *Download Share* settings:

| Option | Description |
|---|---|
| **Path** | The path used by devices in the replication label to copy items from the replication drive.<br>For example, a UNC path:<br>`\\fileservername\directory\kace_sma\`<br>Other devices need **read** permission to copy replication items from this shared folder. |
| **Credentials** | The details of the service account required to connect to the device and run commands. Select existing credentials from the drop-down list, or select **Add new credential** to add credentials not already listed.<br>See Add and edit User/Password credentials. |

9. Specify the following settings in the *Schedule* section:

| Option | Description |
|---|---|
| **High Bandwidth** | The maximum bandwidth to use for replication. If this field is blank, the maximum bandwidth available for replication is used. This field is specified in bytes per second. |
| **Low Bandwidth** | The restricted bandwidth to use for replication. If this field is blank, the maximum bandwidth available for replication is used. This field is specified in bytes per second. |
| **Schedule table** | The bandwidth used for each hour of the day (24-hour clock format) and each day of the week.<br>• To change the bandwidth selection, click in a square.<br>• To select hours (columns), click the hour number.<br>• To select days (rows), click the day of the week.<br>Bandwidth is color-coded:<br>• **White**: Replication is off<br>• **Light blue**: Replication is on with low bandwidth<br>• **Blue**: Replication is on with high bandwidth |
| **Copy Schedule From** | Select an existing Replication Schedule in the drop-down list to replicate items according to that schedule. |
| **Notes** | Any additional information you want to provide. |

10. Click **Save**.

    **The *Replication* page appears.**

11. **Optional**: After you have tested the Replication Share, return to 3 and enable **Failover To Appliance**.

**Related topics**

Add or edit manual labels

About patch management

# View Replication Share details

You can view details of devices used as Replication Shares.

1. Go to the *Replication* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Distribution**, then click **Replication**.

    **This page displays a list of the Replication Shares that are available on the appliance. For each Replication Share, a default view shows its *Status*, replication *Task*, associated *Device*, *Destination Path*, KACE *Agent Version*, *Label*, an indication if the Replication Share is *Enabled*, and the number of files remaining to be copied along with the total size of files remaining to be copied (in the *ToDo* column). The information appearing in the *ToDo* column allows you to review the state of replication process for each Replications Share in this list, instead of reviewing individual shares to find out if their replication process is complete.**
2. In the *Device* column, click the name of a Replication Share to display the *Replication Schedule Detail* page.

    **On this page you can:**

    - **View the Replication queue**: To view items that are queued for replication, click **Show Replication Queue** below the configuration information. This view is displayed by default when you access the page.
    - **View the Replication inventory**: To view items that have been replicated to the share, click **Show Share Inventory** below the configuration information.
    - **Delete the Replication queue**: To view replication items that are marked for deletion, click **Show Delete Queue** below the configuration information.

# Managing credentials

The appliance enables you to manage the usernames and passwords required for logging in to other systems, such as managed computers and servers, and the information required for Google or SNMP authentication, from a central location.

Credentials that have been added to the appliance's *Credentials Management* page are available for selection on drop-down lists in the *Inventory* (Discovery, Provisioning, and Agentless device management), *Distribution* (Managed Installations, File Synchronizations, and Replication), and *Scripting* (Configuration Policies and Security Policies) sections.

In addition, credentials that are updated on the *Credentials Management* page are automatically updated wherever they are used in the various appliance components. You do not need to independently update each item that uses the credentials.

However, the credentials you add to the appliance must match the credentials on the target systems. If you change the credentials on target systems, you must change them on the appliance's *Credentials Management* page as well.

If the Organization component is enabled on your appliance, you manage credentials for each organization separately.

**NOTE:** The Credentials Management drop-down list is not available on LDAP configuration pages, and the feature is not used to manage user credentials for accessing the appliance Administrator Console or User Console, which use single sign on and LDAP authentication. See About user accounts and user authentication.

# Tracking changes to Credentials Management settings

If History subscriptions are configured to retain information, you can view the details of the changes made to settings, assets, and objects. This information includes the date the item was created, changed, or deleted, and the user who performed the action, which can be useful during troubleshooting.

See About history settings.

# Add and edit Secret Key credentials

To streamline the management of Secret Key credentials used in Inventory, Distribution, and Scripting, add those credentials to the *Credentials Management* page. Secret Key credentials can be created for devices managed using the KACE Cloud Mobile Device Manager.

- You have the secret key from the KACE Cloud Mobile Device Manager.
- You have administrator privileges in the Administrator Console.

**After you add credentials, you can select them on configuration pages instead of entering the credentials manually each time. In addition, you can add credentials from any of the configuration pages that use them. Credentials added on configuration pages are automatically added to the *Credentials Management* page.**

1. Go to the *Credentials Management* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Settings**, then click **Credentials**.
2. Select **Choose Action** > **New**.
3. On the *Add Credential* form, specify credential properties:

    **NOTE:** You can also access this form from pages that use credentials, such as the *Discovery Schedule Detail* page. Credentials added on these pages are automatically added to the *Credentials Management* list.

| Option | Description |
|---|---|
| **Name** | A unique name for the credential. This name appears on the *Credentials Management* list and in the credential selection drop-down lists in component sections, such as Scripting. This name is used for identification in Administrator Console, and it is not part of the actual credential on the target device. |
| **Type** | The classification of the credential. Select **Secret Key** to specify credentials that contain secret keys from the KACE Cloud Mobile Device Manager. |
| **Secret** | The secret key of the KACE Cloud Mobile Device Manager environment. |

| Option | Description |
|---|---|
| **Show typing** | Show the characters in the *Password* field on the *Add Credential* form. This option is available only when you are adding credentials. If you are editing existing credentials, the password characters cannot be displayed. |
| **Notes** | Any additional information you want to provide about the credential. |

4. Click **Save**.

   **The credential appears on the *Credentials Management* list and it is available for selection in components that use credentials.**

# Add and edit User/Password credentials

To streamline the management of username and password credentials used in Inventory, Distribution, and Scripting, add those credentials to the *Credentials Management* page. User/Password credentials can be created for Mac, Windows, and Linux operating systems as well as VMware ESXi hosts and vCenter Servers.

- You have the usernames and passwords of the credentials you want to manage.
- You have administrator privileges in the Administrator Console.

**After you add credentials, you can select them on configuration pages instead of entering the credentials manually each time. In addition, you can add credentials from any of the configuration pages that use them. Credentials added on configuration pages are automatically added to the *Credentials Management* page.**

1. Go to the *Credentials Management* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **Credentials**.
2. Select **Choose Action** > **New**.
3. On the *Add Credential* form, specify credential properties:

   **NOTE:** You can also access this form from pages that use credentials, such as the *Discovery Schedule Detail* page. Credentials added on these pages are automatically added to the *Credentials Management* list.

| Option | Description |
|---|---|
| **Name** | A unique name for the credential. This name appears on the *Credentials Management* list and in the credential selection drop-down lists in component sections, such as Scripting. This name is used for identification in Administrator Console, and it is not part of the actual credential on the target device. |
| **Type** | The classification of the credential. Select **User/Password** to specify credentials that have usernames and passwords. |
| **User or Domain \User** | The username required for the credential.<br>**TIP:** The `Domain\User` format might be required for some Windows configurations. |
| **Password** | The password required for the credential. |

| Option | Description |
|---|---|
| **Show typing** | Show the characters in the *Password* field on the *Add Credential* form. This option is available only when you are adding credentials. If you are editing existing credentials, the password characters cannot be displayed. |
| **Targets** | The device types on which the credential can be used.<br>**TIP:** You can select multiple device types, or operating systems, if the specified credentials can be used for authentication on multiple operating systems. |
| **Notes** | Any additional information you want to provide about the credential. |

4. Click **Save**.

   **The credential appears on the *Credentials Management* list and it is available for selection in components that use credentials.**

# Add and edit LDAP User/Password credentials

To easily manage and password LDAP credentials, add those credentials to the *Credentials Management* page. LDAP User/Password credentials can be created for Mac, Windows, and Linux operating systems.

- You have the LDAP user names and passwords of the credentials you want to manage.
- You have administrator privileges in the Administrator Console.

**After you add credentials, you can select them on configuration pages instead of entering the credentials manually each time. In addition, you can add credentials from any of the configuration pages that use them. Credentials added on configuration pages are automatically added to the *Credentials Management* page.**

1. Go to the *Credentials Management* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **Credentials**.
2. Select **Choose Action** > **New**.
3. On the *Add Credential* form, specify credential properties:

   **NOTE:** You can also access this form from pages that use credentials, such as the *Discovery Schedule Detail* page. Credentials added on these pages are automatically added to the *Credentials Management* list.

| Option | Description |
|---|---|
| **Name** | A unique name for the credential. This name appears on the *Credentials Management* list and in the credential selection drop-down lists on the *LDAP Label Detail* page. This name is used for identification in Administrator Console, and it is not part of the actual credential on the target device. |
| **Type** | The classification of the credential. Select **LDAP User/Password** to specify LDAP credentials that include user names and passwords. |
| **User or Domain \User** | The user name required for the credential. |

| Option | Description |
|---|---|
| | **TIP:** The `Domain\User` format is sometimes required for some Windows configurations. |
| **Password** | The password required for the credential. |
| **Show typing** | Show the characters in the *Password* field on the *Add Credential* form. This option is available only when you are adding credentials. If you are editing existing credentials, the password characters cannot be displayed. |
| **Notes** | Any additional information you want to provide about the credential. |

4. Click **Save**.

   **The credential appears on the *Credentials Management* list and it is available for selection in components that use credentials.**

# Add and edit Google Workspace credentials

To streamline the management of Google Workspace credentials used in Inventory, Distribution, Scripting, and Service Desk, add the applicable credentials to the *Credentials Management* page.

The appliance can obtain access to a Google Workspace Domain using the Google APIs. The following appliance-managed components can be authenticated through Google API:

- **Google Workspace Device Discovery and Inventory**: This includes both Chromebooks and mobile devices that are managed by a Google Workspace Domain (formerly G Suite). This type of authentication requires the following:
  - You have a Google Workspace Domain with Chrome Device Management support.
  - You have a Google User admin account that is a member of the domain. The account must be assigned the Super User role.
  - You have a Google account that can be used as your developer account in this procedure. This account does not have to be the same as the Admin account, nor does it have to be a member of the business or education domain.
- **Service Desk Queue Inboud Email**: This includes email accounts that are part of a Google Workspace or a public Gmail account. This type of authentication requires the following:
  - You have a Gmail account.
  - The following applies to your Service Account:
    - The Gmail account belongs to a Google Workspace Domain.
    - You have a Google User admin account that is a member of the domain, The account must be assigned the Super Admin role.
  - You have a Google account that can be used as your developer account in this procedure. This account does not have to be the same as the admin account, nor does it have to be a member of the business or education domain.

For each of these component types, the appliance supports the following methods authentication by a Google API. The method you choose depends on the components using the Google Workspace credential and the preference or role of the appliance administrator.

- **Service Account authentication** consists of a Service Account Key that is associated with a unique Client ID. A Google Workspace Super Admin can use the Client ID to grant the Service Account Domain Wide Access to a resource.
  - **This is a preferred method for Chromebook and Mobile Device Discovery and Inventory.**
  - It requires a configuration step using the Google Workspace Console by a Super Admin.
  - It grants domain-wide access to a specific resource type. In the case of Service Desk Queue emails, this means the service account is granted access to any email inbox. It is up to the administrator to ensure that it is only used with the desired Service Desk email.
- **OAuth Client authentication** consists of a OAuth Client ID that is used along with a Client Secret to request and grant access to a particular Google resource using a browser-based workflow.
  - **This is a preferred method for Service Desk Queue Inboud Email integration.**
  - It requires that the browser used to configure the credential in the Administrator Console connects to the appliance using a host name that is considered public (no private domains).
  - It can be used with public Gmail accounts.

**Start by creating one or more Google Workspace Service Account or OAuth credentials, as applicable. After you add credentials, you can select them on configuration pages instead of entering them manually each time. In addition, you can add credentials from any of the configuration pages that use them. Credentials added on configuration pages are automatically added to the** *Credentials Management* **page. The appliance does not validate stored Google OAuth credentials as you enter them, but attempting to save any changes using invalid credentials result in an error.**

1. Create and configure a Google Cloud Platform project.
   a. Sign in to your developer account at https://console.cloud.google.com.
   b. Assign a new name and ID to the project.
   c. Enable the desired Admin SDK API and/or Gmail API, as applicable.
2. **Service Account credentials only.**
   a. While still logged in to the Google Cloud console, select *IAM & Admin*.
   b. Create a Service Account with a desired name and description.
   c. Add a Service Account Key and save the JSON key file.
   d. Record the OAuth 2 Client ID of the Service Account for later use.
3. **OAuth credentials only.**
   a. While still logged in to the Google Cloud console, select *APIs & Services*, and go to the *OAuth consent screen*.
   b. If the developer account is part of the same Google Workspace domain as the resources being accessed, select *Internal* otherwise choose *External*.
   c. Create an app and specify its name, Support email address, and Developer contact email address.
   d. Add the following scopes:
      - **Device Discovery and Inventory only:**
        - https://www.googleapis.com/auth/admin.directory.device.chromeos
        - https://www.googleapis.com/auth/admin.directory.device.mobile
        - https://www.googleapis.com/auth/admin.directory.user
      - **Service Desk Queue email only:**
        - https://www.googleapis.com/auth/gmail.modify

e. Create a credential and select OAuth Client ID.
f. Choose *Web Application* as the Application type.
g. Assign a name to the client.
h. Provide the following URI: `https://<appliance_hostname>/common/authorize.php`, where `appliance_hostname` is the host name of the appliance Administrator Console.
i. Record the Client ID and Client Secret for later use.

4. **Service Account credentials only (optional).** Delegate a domain-wide authority to a Service Account. This step requires Super Admin access to the Google Workspace Admin console.

**NOTE:** When authorizing the Gmail modify scope to a Service Account, access is granted to that service account for all mailboxes on the domain. Ensure that the Service Account Key credentials are protected accordingly.

a. Sign in to the Google Admin console at https://admin.google.com/.
b. Under **Security > Access and data control > API Controls > Manage Domain Wide Delegation**, create a new delegation and provide the Client ID of the Service Account that you created in 2.
c. Add the following scopes:

- **Device Discovery and Inventory only:**
  - https://www.googleapis.com/auth/admin.directory.device.chromeos
  - https://www.googleapis.com/auth/admin.directory.device.mobile
  - https://www.googleapis.com/auth/admin.directory.user
- **Service Desk Queue email only:**
  - https://www.googleapis.com/auth/gmail.modify

5. Go to the *Credentials Management* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **Credentials**.
6. Select **Choose Action > New**.
7. On the *Add Credential* form, specify credential properties:

| Option | Description |
|---|---|
| **Name** | A unique name for the credential. This name appears on the *Credentials Management* list and in the credential selection drop-down lists in component sections, such as Scripting. This name is used for identification in Administrator Console, and it is not part of the actual credential. |
| **Type** | The classification of the credential. Select **Google Workspace** or **GMail**, as applicable. |

8. **Service Account credentials only.** While still on the *Add Credential* form, specify the credential properties:

| Option | Description |
|---|---|
| **Service Account** | Select this option. |
| **Impersonation Account** | • **Device Discovery and Inventory only:** The email address of an administrator that has access to the devices in the Google Admin console.<br>• **Service Desk Queue email only:** The email address from which you can receive inbound email. |
| **Service Account Key** | Navigate to the JSON file obtained in 2. |
| **Notes** | Any additional information you want to provide about the credential. |

9. **OAuth credentials only.** While still on the *Add Credential* form, specify the credential properties:

| Option | Description |
|---|---|
| **OAuth** | Select this option. |
| **Client ID** | Your Google developer API Client ID obtained in 3. |
| **Client Secret** | Your Google developer API Client Secret obtained in 3. |
| **Show typing** | Show the characters in the *Client Secret* field on the *Add Credential* form. This option is available only when you are adding credentials. If you are editing existing credentials, the characters in the *Client Secret* field cannot be displayed. |
| **Authorize Credential** | Click, log in, and grant access to the desired Google account on the page that appears.<br>• **Device Discovery and Inventory only:** The account of an administrator that has access to the devices in the Google Admin console.<br>• **Service Desk Queue email only:** The email address from which you can receive inbound email. |
| **Notes** | Any additional information you want to provide about the credential. |

10. Click **Save**.

    **The credential is available for selection in components that use credentials.**

# Add and edit SNMP credentials

To streamline the management of SNMP credentials used in Inventory, Distribution, and Scripting, add those credentials to the *Credentials Management* page.

- You have the information required for SNMP authentication.
- You have administrator privileges in the Administrator Console

**After you add credentials, you can select them on configuration pages instead of entering them manually each time. In addition, you can add credentials from any of the configuration pages that use them. Credentials added on configuration pages are automatically added to the *Credentials Management* page.**

1. Go to the *Credentials Management* page:

a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Settings**, then click **Credentials**.

2. Select **Choose Action** > **New**.
3. On the *Add Credential* form, provide the following information:

| Option | Description |
|---|---|
| **Name** | A unique name for the credential. This name appears on the *Credentials Management* list and in the credential selection drop-down lists in component sections, such as Scripting. This name is used for identification in Administrator Console, and it is not part of the actual credential. |
| **Type** | The classification of the credential. Select **SNMP** to specify SNMP credentials. |

4. For SNMP v1 or v2c, provide the following information:

| Option | Description |
|---|---|
| **SNMP v1 or v2c** | SNMP credentials that do not use authentication or encryption. |
| **Community String** | For SNMP v1 or v2c, the community string to query. The default is **Public**. The Public String is required for SNMP v1 or v2c. |
| **Notes** | Any additional information you want to provide about the credential. |

5. For SNMP v3, provide the following information:

| Option | Description |
|---|---|
| **SNMP v3** | SNMP credentials that require authentication and encryption algorithms to increase security. |
| **Security Name** | For SNMP v3, the name of the USM (user-based security model) user account. This account, and any passwords required for authentication and encryption, must be set up on target devices. |
| **Security Level** | For SNMP v3, the level of security. Security levels include:<br>• **authPriv**: The highest level of SNMP v3 security, which uses both authentication and encryption. To use this level, you must specify all the SNMP V3 Authentication and Privacy settings.<br>• **authNoPriv**: The mid-range of SNMP v3 security, which uses authentication only. Communications are not encrypted. To use this level, you must specify the Authentication settings.<br>• **noAuthNoPriv**: The lowest level of SNMP v3 security. Communications are not encrypted. |
| **Authentication Password** | For SNMP v3, the password used to authenticate communications when **authPriv** or **authNoPriv** security levels are selected. This password is associated with the USM user and must be set up on target devices. |

| Option | Description |
|---|---|
| **Protocol** | For SNMP v3, the protocol used for communications. Protocols include:<br>• **SHA**: Secure hash algorithm, SHA-1.<br>• **MD5**: Message Digest 5. Faster than SHA, but considered to be less secure. |
| **Privacy Password** | For SNMP v3, the password used to authenticate communications when the **authPriv** security level is selected. This password is associated with the USM user and must be set up on target devices. |
| **Protocol** | For SNMP v3, the protocol used for the privacy password. Protocols include:<br>• **DES**: Data Encryption Standard. This algorithm has a 56-bit key size and is considered to be less secure than AES.<br>• **AES**: Advanced Encryption Standard. The appliance supports the 128-bit key size. |
| **Notes** | Any additional information you want to provide about the credential. |

6. Click **Save**.

   **The credential is available for selection in components that use credentials.**

# Add and edit Microsoft Office 365 OAuth credentials

To easily use Office 365 credentials used in Service Desk email communication, add them to the *Credentials Management* page.

- You have an Office 365 account, and have created a Microsoft Active Directory app in Microsoft Azure with a Client ID and Client Secret. For more information, visit https://docs.microsoft.com/en-us/azure/active-directory/develop/howto-create-service-principal-portal.
- You have administrator privileges in the Administrator Console.

After you add credentials, you can select them in configuration pages instead of entering them manually each time. In addition, you can add credentials from any of the configuration pages that use them. Credentials added on configuration pages are automatically added to the *Credentials Management* page. The appliance does not validate stored Office 365 credentials as you enter them, but attempting to save any changes using invalid credentials result in an error.

**NOTE:** This feature is only available when SSL (secure) access to the appliance is enabled. For more information, see Configure security settings for the appliance.

1. Go to the *Credentials Management* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **Credentials**.
2. Select **Choose Action** > **New**.
3. On the *Add Credential* form, specify credential properties:

| Option | Description |
|---|---|
| **Name** | A unique name for the credential. This name appears on the *Credentials Management* list and in the credential selection drop-down lists in component sections, such as Service Desk email settings. This name is used for identification in Administrator Console, and it is not part of the actual credential. |
| **Type** | The classification of the credential. Select **Office365 OAuth** to specify credentials for Office 365. |
| **Client ID** | Your Office 365 Client ID. |
| **Client Secret** | Your Office 365 Client Secret. |
| **Show typing** | Show the characters in the *Client Secret* field on the *Add Credential* form. This option is available only when you are adding credentials. If you are editing existing credentials, the characters in the *Client Secret* field cannot be displayed. |
| **Azure AD Tenant Type** | Select your Azure AD tenant type from the available options. The tenant type must match the one selected when registering your Azure AD application in the Azure AD admin portal.<br>• **Multitenant & Personal Microsoft Accounts - Default**: Use this option to grant access to the widest range of Microsoft identities and to enable multi-tenancy. All users with a work or school, or personal Microsoft account can access your application or API using this credential. It applies to schools and businesses that use Office 365 as well as personal accounts that are used to sign in to services like Xbox or Skype. This is the default setting.<br>• **Azure AD directory - Multitenant**: Use this option to grant access to business or educational users, and to enable multitenancy. All users with a work or school account from Microsoft can use your application or API. This includes schools and businesses that use Office 365.<br>• **Personal Microsoft Accounts only**: Use this option to grant access to personal accounts that are used to sign in to services like Xbox or Skype.<br>• **Organizational directory only (Single tenant)**: Use this option to grant access to the users associated with your organization. |
| **Authorize Credential** | Click, log in, and grant access to the desired Office 365 account on the page that appears. |
| **Notes** | Any additional information you want to provide about the credential. |

4. Click **Save**.

   **The credential is available for selection in components that use credentials.**

# View credential usage

You can view credential usage on the *Credentials Management* page.

- Credentials have been added to the *Credentials Management* page. See Managing credentials.
- You have administrator privileges in the Administrator Console.

1. Go to the *Credentials Management* page:

a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
b. On the left navigation bar, click **Settings**, then click **Credentials**.

**The *In Use* column shows the components using the credentials.**

2. To sort the list, select a **Type** from the *View By* drop-down list above the table.

# Create reports from the Credentials Management list

If history subscriptions are configured to retain credential information, you can generate reports that show when credentials were created, edited, and deleted.

- Credentials have been added to the appliance, and they appear on the *Credentials Management* page.
- History subscriptions are configured to retain credential information. See Configure object history.

When you create reports from the *Credentials Management* page, you can include information about the credentials, such as the name, type, creation date, and usage information. Authentication details, however, such as the password or client secret, are not included in reports.

**NOTE:** If the Organization component is enabled on your appliance, you create credential reports for each organization separately.

1. Go to the *Credentials Management* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **Credentials**.
2. Select **Choose Action > Create Report**.
3. On the *Report Detail* page, provide a name for the report.
4. Select additional report settings, then click **Save**. See Create reports from list pages.

   **The report appears on the Reports list.**
5. To generate the report, select a format in the *Generate Report* column.

# Export credentials information

You can export the list of credentials, or selected credentials, that appear on the *Credentials Management* page.

Credentials have been added to the appliance, and they appear on the *Credentials Management* page.

You can export information about the credentials, such as the name, type, the date the credential was last modified, and usage information. Authentication details, such as the password or Client Secret, cannot be exported.

**NOTE:** If the Organization component is enabled on your appliance, you export credential information for each organization separately.

1. Go to the *Credentials Management* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Settings**, then click **Credentials**.

2. Select **Choose Action** > **Export**, then select whether to export all credentials or only the selected credentials, and select the format for the exported information.
3. Open or save the exported file.

# Delete credentials

You can delete credentials provided that they are not being used in any components, such as Inventory, Distribution, or Scripting.

- Credentials have been removed from any components that are using them. See View credential usage.
- You have administrator privileges in the Administrator Console

1. Go to the *Credentials Management* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **Credentials**.
2. Select the check box next to the credentials you want to delete.

   **NOTE:** If any of the selected credentials are in use, an error message appears. You cannot delete groups of credentials if any of the selected credentials are in use.
3. Select **Choose Action** > **Delete**, then click **Yes** to confirm.

# Configuring assets

You can configure assets and Asset Types as needed.

# About the Asset Management component

The Asset Management component includes assets and Asset Types (templates). It enables you to manage assets added automatically through inventory and assets you add manually.

Default Asset Types include: Device, Cost Center, Department, License, Location, Software, and Vendor. You can create custom Asset Types as needed. See Customizing Asset Types.

Using the Asset Management component you can:

- **Manage items throughout their lifecycle**. Track software and other items from procurement to deployment, usage, and end of life. Or, track peripherals such as printers, network devices, and phones. See Identifying the assets to track.
- **Manage software License Compliance**. Track the licenses you own, as well as the number of copies of applications installed on devices. Options for managing License Compliance differ for items in the *Software Catalog* inventory and the *Software* page inventory. See Setting up License Compliance.
- **Track data**. Track purchase orders (POs) by entering each PO as an asset and linking it to the items purchased, received, and distributed. See Add License assets for Software page inventory.
- **Track physical assets**. Track physical assets, such as device hardware and software, as well as other physical assets, such as office furniture. You can track the use of these items as well as the status of their warranties. See Managing physical and logical assets.
- **Track logical assets**. Track logical assets, such as geographic locations, cost centers, departments, vendors, and so on. Logical assets are normally used as the basis for reporting. For example, logical assets answer questions such as “how many devices does this department have?” and “when do the licenses we bought from a software vendor expire?” See Managing physical and logical assets.
- **Create and track relationships between assets**. Create peer-to-peer and parent-child relationships between assets. These relationships enable you to track assets by PO (purchase order), location, department, project, and other criteria. See Establishing relationships between asset fields.

# Using the Asset Management Dashboard

The Asset Management Dashboard provides an overview of managed assets for the selected organization (if applicable), or the appliance.

If the Organization component is enabled on the appliance, and you are logged in to the Administrator Console (`http://`**appliance_hostname**`/admin`), the Asset Management Dashboard shows information for the selected organization. When you are logged in to the System Administration Console (`http://`**appliance_hostname**`/system`), the Asset Management Dashboard shows information for the appliance, including all organizations.

**TIP:** The appliance updates the summary widgets periodically. To update most of the widgets any time, click the **Refresh** button in the upper right of the page: . To update most individual widgets, hover over the widget, then click the **Refresh** button above the widget. Some widgets may require additional steps.

## About the Asset Management Dashboard widgets

Asset Management Dashboard widgets provide overviews of managed assets for the organization or appliance, as selected.

This section describes the widgets available on the *Asset Management Dashboard*. If the Organization component is enabled on your appliance, widgets show the information for the selected organization at the Admin level and for the appliance at the System level.

This dashboard provides a high-level overview of your asset usage. Use it to quickly review the state of your assets and look for any indicators that can improve your asset configuration. For example, you can focus on how your software licenses are used and identify which software titles need to have their license renewed.

| Widget | Description |
|---|---|
| Assets By Type | This widget shows a donut chart, where each section of the chart indicates the percentage of your assets by their asset type, such as device, software, location, license, and others. Hovering over each section of the chart displays the percentage of the assets of the selected type. |

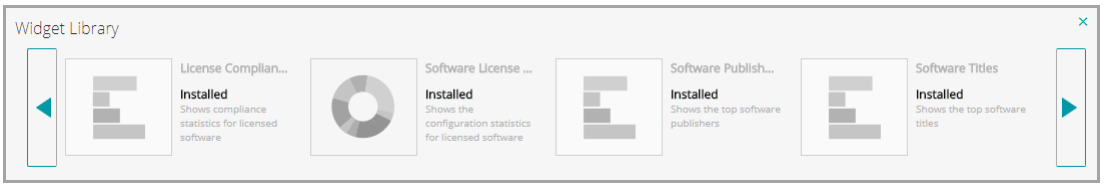
| Widget | Description |
|---|---|
| Assets By Status | This widget shows a donut chart, where each section of the chart indicates the percentage of your assets by their status, such as Active, Disposed, Missing, or other. Hovering over each section of the chart displays the percentage of the assets in the selected status. |
| Cost ($) of Unused Licenses By Product | This widget shows a bar chart, where each bar represents the cost of unused licenses for each product. You can use this information to reassign or cancel unused licenses, and to redirect your resource where they are most needed. |
| License Compliance | If you have created License assets for software, this widget shows the number of Agent-managed devices that have a particular licensed software installed, and the number of licenses available. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization.<br>License assets can be created for applications listed on the *Software* page and the *Software Catalog* page, and the license mode for applications must be *Unit License* or *Enterprise* for license information to appear on this widget. Applications with other license modes, such as *Shareware*, *Freeware*, or *Not Specified*, are not displayed on this widget.<br>This widget is for information only, and the appliance does not enforce license compliance. For example, the appliance does not prevent software from being installed on Agent-managed devices if a license is expired or otherwise out of compliance.<br>The following colors indicate threshold levels:<br>• **Red**: Usage is at or above the critical threshold setting.<br>• **Orange**: Usage is at or above the warning threshold setting but below the critical threshold setting.<br>• **Green**: Usage is below the warning threshold setting.<br>To change the threshold levels, see Configure appliance General Settings without the Organization component.<br>For information about managing License assets, see Managing inventory. |
| Software Titles | This widget displays the software titles defined in the Software Catalog, with the highest number of installations on managed devices. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| Software Publishers | This widget displays the publishers defined in the Software Catalog, with the highest number of software titles installed on managed devices. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| Assets by Location | This widget shows a donut chart, where each section of the chart indicates the percentage of your assets by their location. Hovering over each section of the chart displays the percentage of the assets in the selected location. |
| Software Installed But Not Used in 60 Days | This widget shows a bar chart, where each bar represents a software title and the corresponding number of instances of that product that have not been in use in the last 60 days. You can use this information to further investigate whether these titles are needed, to reassign or uninstall unused software, and to redirect your resource where they are most needed. |

| Widget | Description |
|---|---|
| Expiring Software License Maintenance | This widget shows a vertical bar chart, where each bar represents the number of software licenses that are about expire in the given time period. |
| Expired Software License Maintenance | This widget shows a donut chart representing the ration of expired and current licenses. Hovering over each section of the chart displays the percentage of the software licenses that are either expired or current, as selected. |
| Expiring Contracts | This widget shows a vertical bar chart, where each bar represents the number of contracts that are about expire in the given time period. |
| Expired Contracts | This widget shows a donut chart representing the ration of expired and current contracts. Hovering over each section of the chart displays the percentage of the contracts that are either expired or current, as selected. |
| Software License Configuration | If you set up License assets for software, and specify the license type, such as site, subscription, or unit, that information is displayed in this widget. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |

# Customize the Asset Management Dashboard

You can customize the Asset Management Dashboard to show or hide widgets as needed.

1. Go to the *Asset Management Dashboard*.
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Asset Management**, then click **Dashboard**.
2. Hover over the widget, then use any of the following buttons:
    - : Refresh the information in the widget.
    - : Display information about the widget.
    - : Hide the widget.
    - : Resize the widget.
    - : Drag the widget to a different position on the page.
3. Click the **Customize** button in the top-right corner of the page to view available widgets.




4. To show a widget that is currently hidden, click **Install**.

# About managing assets

Assets are the entities that contain information about the devices, software, licenses, and other items you want to manage. Assets are based on Asset Types, which are templates used to create assets.

## How asset information differs from inventory information

Asset and inventory information differ in the ways that the information is collected and managed.

The following table compares asset information and inventory information:

| Item | Asset Component | Inventory Component |
|---|---|---|
| **Where information appears** | In the *Assets* section. | In the *Inventory* section. |
| **The type of information managed** | Asset information includes details about devices, software, licenses, physical assets, logical assets, and the relationships between them. | Inventory information includes details about devices and the software, processes, startup programs, and services on managed devices. The Software Catalog provides additional information about applications that are categorized as *Discovered* or *Not Discovered*. |
| **How the information is managed** | Asset information is static and changes only when you import data or change it manually. Device assets are exceptions to this rule, because Device assets are updated whenever managed devices report inventory. For License assets, however, the number of installations or seats is updated when managed devices report data to the appliance. Asset history is stored on the appliance and displayed in the Administrator Console; it remains with the asset until the asset is deleted. | Inventory information is automatically generated and overwritten each time managed devices report data to the appliance. |
| **How licenses are tracked** | The Asset Management component enables you to manage software License Compliance as well as physical and logical assets. | On the *Software* page, inventory information includes the number of Software assets, but it does not show the number of licenses.<br>On the *Software Catalog* page, license information is displayed if License assets are associated with applications. |

## Identifying the assets to track

One of the first tasks in setting up Asset Management is identifying the assets to track.

Spreadsheets often contain asset details, such as purchasing data, vendor contact information, product keys, license details, and device information. These details are candidates for asset tracking.

You can import asset information into the Asset Management component to create assets that can be managed and tracked by the appliance. In addition, you can set up relationships among the imported assets to make the information more useful. For example, you can create License and Vendor assets, associate them with devices, and quickly identify devices related to a license or vendor. For information on importing asset information, see Importing license data in CSV files.

# View assets and search for asset information

You can view assets and search for asset information as needed.

1. Go to the *Assets* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Asset Management**, then click **Assets**.
2. To search across all Asset Types using the advanced search:
    a. In the *View By* drop-down list, select **All Items**.
    b. Click the **Advanced Search** tab above the list on the right to display the *Advanced Search* panel.
    c. Specify the search criteria.

        **For example, to search for all assets whose Vendor is Smith, specify the following criteria:**

    ```
    Vendor | contains | Smith
    ```

    d. Click **Search**.

        **Assets of any type, including Device, License, Software, or Vendor, that match the criteria appear.**
3. To search for an asset across all Asset Types using the simple search, in the **Search List** field, type full or partial contents of the field contained in the asset that you want to search for. For example, if you want to find an asset whose barcode contains zz, type it in the field, and press Enter.

    **Assets that match the criteria appear.**
4. To search a single Asset Type:
    a. In the *View By* drop-down list, select **Asset Type > Asset Type**.
    b. Click the **Advanced Search** tab above the list on the right to display the *Advanced Search* panel.
    c. Specify the search criteria.

        **For example, to search for License assets that are scheduled to expire within the next two months, select the License Asset Type in the *View By* drop-down list, then specify the following criteria:**

    ```
    Expiration Date | is within next | 2 months
    ```

    d. Click **Search**.

        **License assets whose expiration date is within the next two months appear.**
5. To create a custom view that uses the specified search criteria, click the **Custom View** tab above the list on the right, then save the view.

    **The custom view appears in the *View By* drop-down list. Custom views are user-specific. Users can access their own custom views, but they cannot access custom views created by other users.**

# Add barcodes to assets

You can view assets and search for asset information as needed.

Specify one or more barcode tags for the type of the asset for which you want to specify barcodes. For more information, see Add or customize Asset Types.

1. Go to the *Asset Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Asset Management**, then click **Assets**.
    c. Click the name of an asset.
2. Under *Barcodes*, click +, and provide the following information:

| Option | Description |
|---|---|
| **Barcode Data** | The barcode number. Barcode numbers are always unique, they cannot be shared between multiple assets. However, it is possible for an active asset to share a barcode with an archived asset. |
| **Barcode Name** | The barcode tag associated with this asset type. There can be only one barcode of the same type per asset. |
| **Barcode Format** | The barcode format. For example, UPC-A, Code 11, or UPC-E. |

**You can add as many barcodes as needed.**

3. Optional. To see additional information about each barcode tag, such as its first or last scanned date, in the *Barcodes* area, click **Show all columns**. To return to the previous view with fewer columns per barcode, click **Show less columns**.
4. Click **Save**.

# Change device owners

You can change asset and device owners as needed.

This topic describes the process of changing device owners using the Assets list. You can also change device owners using the *Asset Detail* or *Device Detail* page.

1. Go to the *Assets* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Asset Management**, then click **Assets**.
2. In the *View By* drop-down list, select **Asset Type > Device**.
3. In the *Assets* list, select one or more devices that you want to assign to a specific owner.
4. Select **Choose Action > Assign to**.
5. In the *Assign To* dialog box that appears, click *Unassigned*, and select a user account that you want to assign as an owner of the selected assets.

**The list that appears displays the full name, account name, and email address for each user.**

6. Click **Save**.

**The** *Assign To* **dialog box closes and the** *Assets* **list refreshes, showing the asset owner name in the** *Assignee Name* **column.**

7. Add more owner-related columns to the *Assets* list.
    a. In the *Assets* list, click ⚙.

b. Select any of the following options, as required, to view these columns in the *Assets* list: **Assignee Login**, **Assignee Email**, **Assignee Domain**, **Assignee Budget Code**, **Assignee Location**, **Assignee Role**, or **Assignee Locale**.

**The selected columns appear in the *Assets* list.**

8. If you changed the owner for a device, you can observe this change on the *Devices* list.
   a. On the left navigation bar, click **Inventory**, then click **Devices**.
   b. In the *Devices* list, observe the *Assignee Name* column of the row containing the device whose owner you changed.

   **The *Assignee Name* column displays the name of the device owner**

**TIP:** Alternatively, you can change the asset or device owner on the *Asset Detail* or *Device Detail* page.

# View and configure asset lifecycle settings

With the exception of locations, each asset type can have a status indicating its use or purpose, such as Active, Disposed, Expired, or others.

In order to configure applicable asset lifecycle settings, your user role must be granted a write-level *Asset Lifecycle* permission. To view asset lifecycle settings, a read-level permission is sufficient. For more information about user roles, see Managing Organization Roles and User Roles.

Use the *Asset Lifecycle Settings* page to view the list of existing asset status entries, and to add new ones, as required.

1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
2. Complete one of the following steps:
   - **On the left navigation bar, click Asset Management, then click Assets.**
   - **On the left navigation bar, click Asset Management, then click Contracts.**
   - **On the left navigation bar, click Asset Management, then click Licenses.**
3. On the list page that appears, click **Choose Action > Configure Lifecycle Settings**.

   **TIP:** You can quickly change an asset status by selecting the asset on the list page, clicking **Choose Action > Change Asset Status**, and selecting the appropriate status in the *Change Asset Status* dialog box. Access to this command requires a write-level *Assets*, *Contracts*, or *Licenses* permission, as applicable. For more information about user roles, see Managing Organization Roles and User Roles.

   **The *Asset Lifecycle Settings* page appears.**
4. On the *Asset Lifecycle Settings* page, under *Asset Status*, review the list of default asset statuses.

**The following default asset statuses are available:**

- **Active**: Any asset that is deployed, active, or in use.
- **Disposed**: An asset that is no longer available for use.
- **Expired**: A software license or contract asset that has expired.
- **In Stock**: A recently received asset.
- **Missing**: Any asset that cannot be located.
- **Repair**: An asset that is being repaired.
- **Reserved**: An asset that is set aside for a specific person or use.
- **Retired**: Any asset that reached its end-of-life state, or is no longer in use.
- **Stolen**: An asset that has been reported as stolen.

5. Add, delete, or edit a custom asset status.

   **TIP:** Default asset statuses cannot be modified or deleted.

   - To add a new asset status, click +, specify the *Name* and *Description* for the asset status, and click **Add**.
   - To delete a custom asset status, in the row containing the asset status, click .
   - To edit a custom asset status, in the row containing the asset status, click , and edit the *Name* and/or *Description* of the asset status, as applicable.

6. If you made any changes to the *Asset Lifecycle Settings* page, click **Save**. Otherwise, click **Cancel** to return to the previous page.

# Adding and customizing Asset Types and maintaining asset information

You can add or customize Asset Types as needed. You can also maintain real-time information on assets by scanning your network at regularly scheduled intervals.

In addition, you can add subtypes to your Asset Types. Asset Subtypes enable you to track asset properties, such as toner or ink levels of printers.

## About Asset Types

Asset Types are templates for creating assets. Asset Types contain the fields and other information that define assets.

Default Asset Types include: Device, Cost Center, Department, License, Contract, Location, Purchase, Software, and Vendor, and you can add custom Asset Types as needed.

In addition, you can add Asset Subtypes and custom fields for any Asset Type. This is especially useful for collecting additional information about non-computer Device assets, such as printers. See About Asset Subtypes, custom fields, and device detail preferences.

# Customizing Asset Types

You can rename fields, create fields, and delete fields in Asset Types as needed. Customizations to Asset Types are preserved during appliance updates.

## *About renaming fields and changing field types in Asset Types*

When you rename a field in an Asset Type, the field is renamed in all assets that are based on the Asset Type. Values for the renamed field are retained.

However, if you change the **Type** to a type that does not support the data already entered in a field, that data is lost. For example, you might have a field named *Model Number* that is of the *Type*, *Text*, and that contains the value A123. If you change the *Type* from *Text* to *Number*, the system cannot convert A123 to a valid number. The value for the *Model Number* field is set to 0.

## *About adding and deleting asset fields*

When you add a field to an Asset Type, the field is available to all assets of that type. Similarly, if you delete a custom asset field, that field, and any values entered in that field, are removed from all assets of that type.

For example, if you created a custom field named *BIOS Serial Number* in the Device Asset Type, that field would be available to all Device Asset Types. However, if you delete the *BIOS Serial Number* custom asset, that field, and any values entered in the field, are removed from all Device Asset Types.

If you delete an asset field, the asset association is removed from any assets that point to the deleted field.

## *Add or customize Asset Types*

You can have as many custom Asset Types as you need. In addition, you can create custom fields in any Asset Type. When you create a custom field in an Asset Type, that field becomes available to all assets that are based on that Asset Type.

If the Organization component is enabled on your appliance, you add and customize Asset Types for each organization separately.

1. Go to the *Asset Type Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Asset Management**, then click **Asset Types**.
    c. Display the *Asset Type Detail* page by doing one of the following:
    - Click the name of an Asset Type.
    - Select **Choose Action** > **New**.
2. In the *Name* field, add or change the name as needed.

    **TIP:** Additional options are available for Device and License Asset Types. See About customizing the Device Asset Type and Customize the License Asset Type.
3. **All asset types except Locations**. In the *Defaut Asset Status* field, enter a default asset status, or a custom one (if they exist).

**A default installation of the appliance includes the following asset statuses:**

- **Active**: Any asset that is deployed, active, or in use.
- **Disposed**: An asset that is no longer available for use.
- **Expired**: A software license or contract asset that has expired.
- **In Stock**: A recently received asset.
- **Missing**: Any asset that cannot be located.
- **Repair**: An asset that is being repaired.
- **Reserved**: An asset that is set aside for a specific person or use.
- **Retired**: Any asset that reached its end-of-life state, or is no longer in use.
- **Stolen**: An asset that has been reported as stolen.

4. If you want to allow users who do not have the Administrator role to delete assets of this type, select **Allow non-administrators to delete assets**. This option is turned off by default. Only administrators can configure this option. For other types of users, this field appears on the page, but it is disabled.

**For more information on user roles, see Add or edit User Roles.**

5. If you want assets of this type to display the asset location in the asset details, select **Show Location settings**. This option is turned off by default.
6. **Device assets only**. In the *Defaut Archive Asset Status* field, enter an asset status that you want to automatically assign to a device when it becomes archived.
7. If you want the instances of this asset type to use barcodes, specify one or more tags in the *Barcode Tags* area.

**Any assets of this type that you create will have the barcode tags available for configuration. For example, if you specify a Corporate Tag and a Dell Asset Tag, barcodes identified with these two tags will be available for selection in on the *Asset Detail* page, when you create or edit an asset of this asset type.**

**To add a barcode, click +, type the barcode name, and click Save.**

8. In the *Asset Fields* area, click +.

   **A new line appears.**
9. Provide the following information:

| Item | Description |
|---|---|
| **Name** | The name of the custom asset field, such as Asset Code, Purchase Date, or Building Address Line 1. This name appears on the form used to create assets of the selected Asset Type. |
| **Available Values** | The values that appear in fields that contain lists of values. This field is enabled when you select **Single Select** or **Multiple Select** from the *Type* drop-down list. If you select **Single Select** or **Multiple Select**, you must enter at least one value in this field. To use multiple values, separate each value with a comma. |
| **Default Values** | The value that appears in the field by default. If you select **Single Select** or **Multiple Select** from the *Type* drop-down list, you must type one of the values given in the *Available Values* field. |
| **Required** | Whether the field is mandatory or optional. If this check box is selected, users must enter a value in the field when creating assets of the selected type. |

| Item | Description |
|---|---|
| **Type** | The type of field. Field types include:<br>• **Attachment**: Enables users to add attachments to the asset.<br>• **Currency**: Used for monetary values.<br>• **Software Catalog**: Enables users to associate the asset with an application in the Software Catalog.<br>• **Date**: Used for calendar information.<br>• **Label**: Enables users to associate a label with the asset.<br>• **Link**: Used for Internet links. Links must be valid URLs, such as **http://quest.com**.<br>• **Multiple Select**: Displays a list where multiple values can be selected. The maximum length for each value is 255 characters.<br>• **Notes**: Used for additional information.<br>• **Number**: Used for numerical values expressed as whole numbers.<br>• **Parent**: Enables the asset to point to the same type of asset in a parent-child relationship. For example, you might allow Location types to have a Parent connection, allowing New York to point to a North America location. This can then be used in the reporting system to show all assets in North America.<br>• **Single Select**: Displays a value list where only a single value can be selected. The maximum length for each value is 255 characters.<br>• **Text**: Used for additional text. The maximum length is 255 characters.<br>• **Timestamp**: Used to add a day and time to the record.<br>• **User**: Used to associate user records with an asset.<br>• **Assets Asset Type**: Used to specify relationships among Asset Types. |
| **Multiselect** | Whether the asset field points to other assets. A check box is enabled when you select **Assets Asset Type** from the *Type* drop-down list. Select the check box to allow this custom field to point to multiple records.<br>For example, you might want a field to point to multiple devices that are approved for a particular license. In that case, you would select the check box. To create a single relationship field, such as a printer that is used by only one department, clear the check box.<br>**NOTE:** When you create an asset, this field is populated with the available assets of the specified Asset Type. The field is empty if there are no assets of the specified type. |
| **Section** | **License assets only**. The tab on which this field appears on the *License Detail* page: *General*, *Purchase*, *Maintenance*, *Related*, *Custom*, or *Notes*. For more information about the tabs appearing on the *License Detail* page, see Add or edit licenses. |
| **Device Section** | **Device assets only**. The location, on the *Device Detail* page, where the field is reported. For example, if you are creating a printer Asset Subtype, with a field named *Toner Level*, you might select *Hardware* because that field is related to printer hardware. However, you can choose any section in the drop-down list for any field. |

10. Click **Save** at the end of the row, then click **Save** at the bottom of the page.

**Optional**: Add Asset Subtypes for Asset Types. See Add Asset Subtypes and select Device Detail page preferences.

## About customizing the Device Asset Type

Almost all Device asset data, whether displayed in the *Assets* or *Inventory* sections, originates from the *Assets* section.

The only device inventory or asset information that comes from the *Inventory* section is data for the *Mapped Inventory Field* and the *Matching Asset Field*. The values for those fields are collected each time devices are inventoried. During the inventory process, the appliance determines whether devices already have mapped assets. If no asset is found, the appliance creates one.

The default data type for *Mapped Inventory Field* is **System Name**, and the default data type for *Matching Asset Field* is **Name**. However, if you re-image your systems, the information under the old system name is lost to the Asset Management component. To prevent this loss, consider using BIOS serial numbers, IP addresses, MAC addresses, or something similar for tracking.

You can import Device asset data or change it manually in the *Assets section* any time.

**CAUTION: If you change the default Asset Type, you lose the asset history prior to the change because the appliance automatically creates assets with the new information. Therefore, it is important to decide whether you want to change the default values as early as possible in the setup process.**

## Example: Add custom fields to the Device Asset Type

This example shows how to add fields to the Device Asset Type and select them in the *Mapped Inventory Field* and the *Matching Asset Field*.

1. Go to the *Asset Type Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Asset Management**, then click **Asset Types**.
   c. Click the **Device** Asset Type.
2. Click the **Add** button on the right side of the page: +.

   **A new line appears.**
3. Provide the following information:
   a. In the *Name* field, enter BIOS Serial Number.
   b. In the *Type* drop-down list, select **Text**.
4. Click **Save** at the end of the row, then add a row:
   a. Click the **Add** button: +.

      **A new line appears.**
   b. Provide the following information for the new line:

      **In the *Name* field, enter Serial Number.**

   In the *Type* drop-down list, select **Text**. Reserve the **Number** *Type* for fields on which you perform calculations. Using the **Number** *Type* might strip leading zeros in a serial number.
5. Click **Save** at the end of the row, then add a row:
   a. Click the **Add** button: +.

      **A new line appears.**
   b. Provide the following information for the new line:

**In the *Name* field, enter Purchase Date.**

In the *Type* drop-down list, select **Text**.

6. Click **Save** at the end of the row, then add a row:
   a. Click the **Add** button: +.

      **A new line appears.**

   b. Provide the following information for the new line:

      **In the *Name* field, enter Location.**

      In the *Type* drop-down list, select **Asset Location**.
7. Click **Save** at the end of the row.
8. In the *Mapped Inventory Field* drop-down list, change the value to **BIOS Serial Number**.
9. In the *Matching Asset Field*, select **Serial Number**.
10. Click **Save** at the bottom of the page.

## *Establishing relationships between asset fields*

You can edit Asset Types to establish relationships among assets and track them together.

These relationships can be:

- Peer-to-peer, such as printer and device.
- Parent-child, such as a cost center and the devices associated with it.

Example: Add fields to the Location Asset Type shows how to make a parent-child relationship with locations by adding a field to the Location Asset Type.

### Example: Add fields to the Location Asset Type

You can add fields to the Location Asset Type as needed.

1. Go to the *Asset Type Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Asset Management**, then click **Asset Types**.
   c. Click the **Location** Asset Type.
2. Click the **Add** button on the right side of the page: +.

   **A new line appears.**
3. In the *Name* field, enter Parent Location.
4. In the *Type* drop-down list, select **Parent**.
5. Click **Save** at the end of the row, then click **Save** at the bottom of the page.

When you open a Location asset, the *Parent Relationship* field is shown on the *Asset Detail* page.

### Add parent relationships to Location assets

Parent-child relationships can be useful when managing assets, such as Location assets.

Add *Parent Location* custom fields as described in Example: Add fields to the Location Asset Type.

When adding parent relationships, start with the highest level (parent level) in the relationship.

1. Go to the *Assets* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General

Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Asset Management**, then click **Assets**.

2. **Optional**: In the *View By* drop-down list, which appears above the table on the right, select **Asset Type > Location**.

   **The view is restricted to Location assets.**

3. If the highest level (parent level) Location asset does not exist, create it:
   a. Select **Choose Action > New > Location** to display the *Location Asset Detail* page.
   b. Enter the name for the new field. For example, Western Division.
   c. Leave the *Parent Location* **Unassigned**, then click **Save** to display the *Assets* page.

   **NOTE:** The *Parent Location* field is a user-created custom field.

4. If the second-level asset exists, select it. If the second-level asset does not exist, create it:
   a. Select **Choose Action > New > Location** to display the *Location Asset Detail* page.
   b. Enter the name for the new asset. For example, San Jose.
   c. For this example, select **Western Division** for the *Parent Location*. If you have many Location assets, enter the first characters in the *Filter* field to limit the choices available in the *Parent Location* field.
5. Click **Save**.
6. Create additional Location assets as needed.

   **For example, you could create Location assets for each building on a campus or each rack in a data center.**

### *Delete Asset Types*

You can delete Asset Types, provided that no assets are assigned to those types.

You have Asset Types that do not have any assets assigned to them.

1. Go to the *Asset Types* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Asset Management**, then click **Asset Types**.
2. Click the check box next to an Asset Type.
3. Select **Choose Action > Delete**, then click **Yes** to confirm.

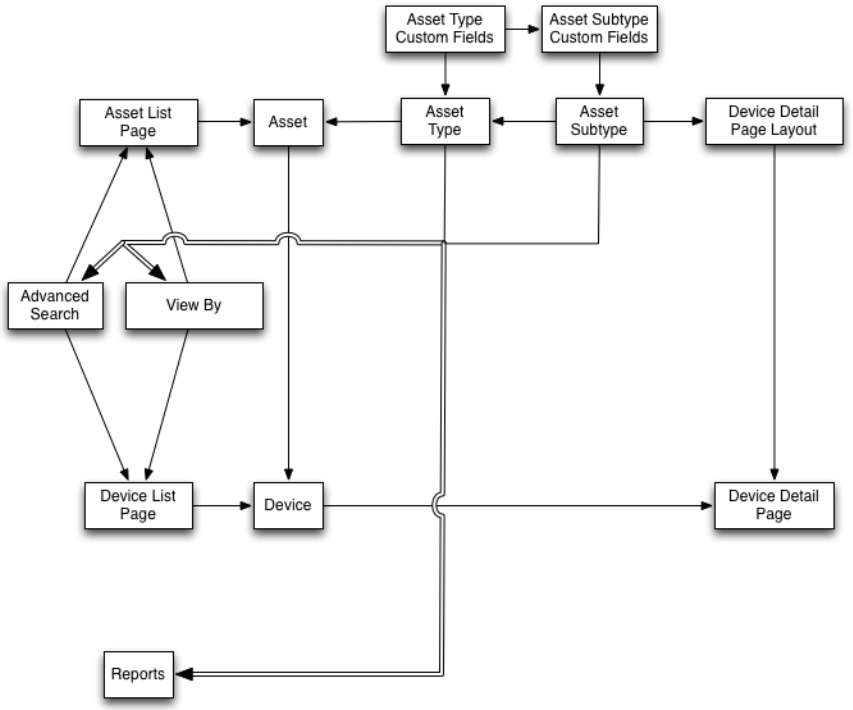
## About Asset Subtypes, custom fields, and device detail preferences

Asset Subtypes are subcategories of assets that you can add to any Asset Type, including custom Asset Types. This enables you to identify and manage subtypes of assets, such as Device assets that are computers, printers, or routers, and Software assets that run on Windows, Mac, or Linux systems in the appliance inventory.

Asset Subtypes inherit the fields from the Asset Type, and you can add custom fields to enable the appliance inventory process to collect relevant information about the Asset Subtype. For example, you could add the Asset Subtype **Printer** to the **Device** Asset Type. You could then add a custom field for the **Printer** subtype, such as *Toner*. The *Toner* field would then be available to Device Assets with the subtype *Printer*.

**NOTE:** To enable the appliance to populate Asset Subtype fields from Agentless devices, you must assign the appropriate Asset Subtype when the device is configured, you must obtain the appropriate object identifier (OID), and you must map that identifier to the subtype field on the *SNMP Inventory Configuration Detail* page. You cannot add or change SNMP device subtypes after they have been configured. See Obtain a list of object identifiers (OIDs) using the Administrator Console.

In addition, you can choose whether to show or hide the details that appear for each Device Asset Subtype on the *Device Detail* page. For example, you can hide information that is irrelevant to printers, such as *Installed Programs*, *Discovered Software*, and *Metered Software*, from the *Device Detail* page of assets with the subtype **Printer**.




## *Workflow for using Asset Subtypes with SNMP devices*

To use Asset Subtypes, you need to add them, and any custom fields you want to use, to your Asset Types. To populate the fields with data from SNMP (Simple Network Management Protocol) devices, you can also add object identifiers (OIDs) to the custom fields.

The workflow for using Asset Subtypes with SNMP devices includes these tasks:

1. Add a Device Asset Subtype to the Asset Type, and add custom fields to the subtype. See Add Asset Subtypes and select Device Detail page preferences.
2. Add assets that use the Asset Type and Asset Subtype. See Assign or change Device Asset Subtypes from the Devices page.

   **IMPORTANT: You must assign the appropriate Asset Subtype when the device is configured. You cannot add or change SNMP device subtypes after they have been configured.**
3. **Optional**: Populate the fields:
   - To enable the system to populate fields with data from SNMP devices, obtain the object identifiers (OIDs) to use for the custom fields, then add the field for Agentless devices on the *SNMP Inventory Configuration Detail* page, select the Asset Subtype, then add the OID information for the fields. See Obtain a list of object identifiers (OIDs) using the Administrator Console.
   - Manually update the fields as needed. See Update custom asset fields manually.

## *Add Asset Subtypes and select Device Detail page preferences*

You can add Asset Subtypes to any Asset Type, including custom Asset Types, and you can add custom fields for each Asset Subtype.

In addition, you can choose which fields to display on the *Device Detail* page, and the sections where you want those fields to appear. This enables you to customize the *Device Detail* page and emphasize the most important information.

**NOTE:** If the Organization component is enabled on your appliance, you manage Asset Subtypes for each organization separately.

1. Go to the *Asset Type Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Asset Management**, then click **Asset Types**.
   c. Display the *Asset Type Detail* page by doing one of the following:
   - Click the name of an Asset Type.
   - Select **Choose Action** > **New**.
2. In the *Subtypes* section, click **Add Subtype**.

   **NOTE:** In a default installation, Device Assets include two Asset Subtypes for printer devices: *Laser Printer: Color* and *Laser Printer: Monochrome*. Each of these subtypes provides a common set of fields that apply to most printers. The appliance also comes with a set of printer templates for typical SNMP-enabled printer models, based on these Asset Subtypes. You can edit these templates or add new ones, as needed. When you apply a printer template to a device, the data defined in the template, such as toner levels or descriptions, is collected for the printer in the next inventory cycle. For more information, see About printer templates.

   **The *Asset Subtype Detail* page appears. The *Inherited Fields* section shows fields that are available to the Asset Subtype because they have been added to the Asset Type.**
3. In the top section, provide the following information and choose whether to make the Asset Subtype the default:

| Option | Description |
|---|---|
| **Name** | The name of the Asset Subtype. This name appears in the list on the *Asset Type Detail* page. |
| **Default** | Whether to use the Asset Subtype as the default for new assets of the selected type. If you select this check box, new assets of the selected type are automatically assigned to this Asset Subtype. You can change this setting any time. |

4. In the *Subtype Fields* section, click the **Add** button in the heading row on the right side of the table: +.
5. Provide the following information:

| Item | Description |
|---|---|
| **Name** | The name of the Asset Subtype. This name identifies the Asset Subtype on the *Asset Detail* page. |
| **Available Values** | The values that appear in fields that contain lists of values. This field is enabled when you select **Single Select** or **Multiple Select** from the *Type* drop-down list. If you |

| Item | Description |
|---|---|
| | select **Single Select** or **Multiple Select**, you must enter at least one value in this field. To use multiple values, separate each value with a comma. |
| **Default Values** | The value that appears in the field by default. If you select **Single Select** or **Multiple Select** from the *Type* drop-down list, you must type one of the values given in the *Available Values* field. |
| **Required** | Whether the field is mandatory or optional. If this check box is selected, users must enter a value in the field when creating assets of the selected type. |
| **Type** | The type of field. Field types include:<br>• **Attachment**: Enables users to add attachments to the asset.<br>• **Currency**: Used for monetary values.<br>• **Software Catalog**: Enables users to associate the asset with an application in the Software Catalog.<br>• **Date**: Used for calendar information.<br>• **Label**: Enables users to associate a label with the asset.<br>• **Link**: Used for Internet links. Links must be valid URLs, such as **http://quest.com**.<br>• **Multiple Select**: Displays a list where multiple values can be selected. The maximum length for each value is 255 characters.<br>• **Notes**: Used for additional information.<br>• **Number**: Used for numerical values expressed as whole numbers.<br>• **Parent**: Enables the asset to point to the same type of asset in a parent-child relationship. For example, you might allow Location types to have a Parent connection, allowing New York to point to a North America location. This can then be used in the reporting system to show all assets in North America.<br>• **Single Select**: Displays a value list where only a single value can be selected. The maximum length for each value is 255 characters.<br>• **Text**: Used for additional text. The maximum length is 255 characters.<br>• **Timestamp**: Used to add a day and time to the record.<br>• **User**: Used to associate user records with an asset.<br>• **Assets Asset Type**: Used to specify relationships among Asset Types. |
| **Multiselect** | Whether the asset field points to other assets. A check box is enabled when you select **Assets Asset Type** from the *Type* drop-down list. Select the check box to allow this custom field to point to multiple records.<br>For example, you might want a field to point to multiple devices that are approved for a particular license. In that case, you would select the check box. To create a single relationship field, such as a printer that is used by only one department, clear the check box.<br>**NOTE:** When you create an asset, this field is populated with the available assets of the specified Asset Type. The field is empty if there are no assets of the specified type. |
| **Device Section** | The location, on the *Device Detail* page, where the field is reported. For example, if you are creating a printer Asset Subtype, with a field named *Toner Level*, you might |

| Item | Description |
|---|---|
| | select *Hardware* because that field is related to printer hardware. However, you can choose any section in the drop-down list for any field. |

6. Click **Save** at the end of the row.
7. For Device Asset Subtypes, choose the information you want to show or hide on the *Device Detail* page:
    a. Scroll down to *Subtype, Device Details: Show/Hide sections*.
    b. Select the check boxes next to the items you want to show.

        **For a printer subtype, you might want to show** *Inventory Information* **such as** *Hardware*, *Printers*, *Network Interfaces*, **and** *SNMP Data*.

    c. Clear the check boxes next to the items you want to hide.

        **For a printer subtype, you might want to hide the** *Software* **and** *Dell Command | Monitor* **sections because they are not relevant to printers.**
8. Click **Save** at the bottom of the page.

To enable the system to automatically populate custom fields with data on the *Device Detail* page, you must obtain the appropriate object identifiers and map the fields OIDs. See:

- Map Object Identifiers to fields in the inventory table
- Obtain a list of object identifiers (OIDs) using the Administrator Console

To manually update custom fields, go to the *Asset Detail* page. See Update custom asset fields manually.

## Edit Asset Subtypes

You can edit Asset Subtypes as needed. If the Organization component is enabled for your appliance, you edit Asset Subtypes for each organization separately.

1. Go to the *Asset Type Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Asset Management**, then click **Asset Types**.
    c. Click the name of an Asset Type to display the *Asset Type Detail* page.
2. In the *Subtypes* section click the **Edit** button next to the subtype you want to edit:  .

    **The** *Asset Subtype Detail* **page appears. For information on the options available to Asset Subtypes, see Add Asset Subtypes and select Device Detail page preferences.**
3. Click **Save** at the end of the row, then click **Save** at the bottom of the page.

## Set an Asset Subtype as the default

To automatically assign new assets to a subtype, you can mark an Asset Subtype as the default.

1. Go to the *Asset Type Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Asset Management**, then click **Asset Types**.

c. Display the *Asset Type Detail* page by doing one of the following:

- Click the name of an Asset Type.
- Select **Choose Action > New**.

2. In the *Subtypes* section click the **Edit** button next to the subtype you want to edit: .

   **The** *Asset Subtype Detail* **page appears.**
3. In the top section, select the check box next to *Default*.
4. Click **Save** at the end of the row, then click **Save** at the bottom of the page.

   **The Asset Subtype is marked as the default subtype for the Asset Type. New assets of the selected type are automatically assigned to this Asset Subtype.**

## *View subtypes available to Asset Types*

You can view the Asset Subtypes that are available to the Asset Types you manage. If the Organization component is enabled for your appliance, you view and manage Asset Subtypes for each organization separately.

- Go to the *Asset Type Detail* page:

  1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
  2. On the left navigation bar, click **Asset Management**, then click **Asset Types**.
  3. Display the *Asset Type Detail* page by doing one of the following:

  - Click the name of an Asset Type.
  - Select **Choose Action > New**.

  **The subtypes available to the Asset Type are listed in the** *Subtypes* **table.**

## *View Asset Subtypes on the Assets page*

You can use the *View By* menu to sort the *Assets* page by subtypes.

1. Go to the *Assets* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Asset Management**, then click **Assets**.

   **The** *Subtypes* **column shows the subtype assignments for assets. None indicates that the asset is not assigned to a subtype.**
2. To view the subtypes assigned to a specific Asset Type, go to the *View By* menu in the upper right and select an Asset Type.
3. To view a single subtype for an Asset Type, go to the *View By* menu, select an Asset Type, then select a subtype.

   **Fields related to the subtype, such as** *Ink Level* **for a** *Printer* **subtype, appear as columns on the** *Assets* **page.**

## *Assign or change Device Asset Subtypes from the Devices page*

If you have existing Device assets that are not assigned to subtypes, you can assign them to subtypes or change their subtype assignments, from the *Devices* page, provided that those devices are not SNMP (Simple Network Management Protocol) devices. Subtypes for SNMP devices must be assigned when the devices are initially configured.

You have existing device assets in appliance inventory and you have created subtypes for the Device Asset Type. See Add Asset Subtypes and select Device Detail page preferences.

**IMPORTANT: For SNMP devices, you must assign the appropriate Asset Subtype when the device is configured. You cannot add or change SNMP Asset Subtypes after they have been configured.**

1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
2. Select **Inventory** > **Devices** to display the *Devices* page.
3. To filter the list to show only those devices that are assigned to a subtype:
    a. Click the **Advanced Search** tab above the list on the right to display the *Advanced Search* panel.
    b. Specify the criteria required to find devices.
    c. Click **Search**.

    **TIP:** You can also use the *View By* drop-down list to identify devices that belong to a specific Asset Subtype.
4. Select the check boxes next to the devices you want to assign to a subtype. To select all devices, click the check box next to *Name* at the top of the table.
5. Select **Choose Action** > **Change Subtype to**.

    **The subtype is selected, and the change is reflected on the *Device Detail* page the next time inventory is reported for the device.**

## *Assign assets to subtypes or change subtype assignments from the Assets page*

If you have existing assets that are not assigned to Asset Subtypes, you can assign them to subtypes or change their subtypes, from the *Assets* page, provided that those devices are not SNMP (Simple Network Management Protocol) devices. Subtypes for SNMP devices must be assigned when devices are initially configured.

You have existing assets in appliance inventory and you have created subtypes for Asset Types. See Add Asset Subtypes and select Device Detail page preferences.

**IMPORTANT: For SNMP devices, you must assign the appropriate Asset Subtype when the device is configured. You cannot add or change SNMP Asset Subtypes after they have been configured.**

1. Go to the *Assets* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Asset Management**, then click **Assets**.
2. To filter the list to show only those assets that are assigned to a subtype:
    a. Click the **Advanced Search** tab above the list on the right to display the *Advanced Search* panel.
    b. Specify the criteria required to find the assets whose subtypes you want to assign or change.
    c. Click **Search**.

    **TIP:** You can also use the *View By* drop-down list to identify assets that belong to a specific Asset Subtype.
3. Select the check boxes next to the assets you want to assign to a subtype. To select all assets, click the check box next to *Name* at the top of the table.
4. Select **View By** > **Asset Type** > **Device**, and select one of the available entries in the list. For example, to display all device assets, select **All Device Subtypes**.
5. Select **Choose Action** > **Change Subtype to**.

    **The selected assets are assigned to the selected subtype.**

### *Update custom asset fields manually*

You can update custom asset fields manually as needed. This is useful when you have asset information that cannot be collected automatically, or supplemental information you want to track with an asset.

You have added custom Asset Subtypes or custom asset fields.

**TIP:** As an alternative to manually updating custom assets fields, you can import information from spreadsheets. See Importing license data in CSV files.

1. Go to the *Asset Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Asset Management**, then click **Assets**.
    c. Click the name of the asset you want to update.
2. Modify the custom asset fields as needed.
3. Click **Save**.

### *Delete Asset Subtypes*

You can delete Asset Subtypes provided that no assets are assigned to those subtypes.

You have Asset Subtypes that do not have any assets assigned to them.

1. Go to the *Asset Type Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Asset Management**, then click **Asset Types**.
    c. Click the name of an Asset Type to display the *Asset Type Detail* page:
2. In the *Subtypes* section click the **Delete** button next to the subtype you want to edit: .
3. In the dialog window, click **Yes**.

    **The Asset Subtype is deleted from the Asset Type, and any related fields are removed immediately.**

# Managing Software assets

You can customize the Software Asset Type, and add Software assets for applications in the *Software* page inventory as needed.

Software assets can be added for *Software* page inventory only. Software assets are not required for applications in the Software Catalog inventory.

## Customize the Software Asset Type

You can add, change, or delete the fields available to the Software Asset Type as needed. The Software Asset Type is the template that determines the fields available when you add Software assets.

If the Organization component is enabled on your appliance, you customize the Software Asset Type for each organization separately.

1. Go to the *Asset Type Detail* page:

a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
b. On the left navigation bar, click **Asset Management**, then click **Asset Types**.
c. In the **Name** column, click **Software**.

2. **Optional**: Modify fields or values on the *Asset Fields* table.
   a. Click the **Edit** button at the end of a row:  .
   b. Change the field information as needed, then click **Save** at the end of the row.
   c. To add a field, click the **Add** button in the table heading:  . Add field information, then click **Save** at the end of the row.
   d. To change the order of fields, click the **Reorder** button at the end of the row:  .
   e. To remove a field, click the **Delete** button:  .
3. Click **Save** at the bottom of the page.

# Adding Software assets

Software assets enable you to track information about applications in the *Software* page inventory. For example, after you add Software assets for applications, you can associate those assets with License assets to track license information.

You can create Software assets for applications that have been added to the appliance automatically or manually.

**NOTE:** Software assets are not required to set up License Compliance for applications in the *Software Catalog* inventory. See About License Compliance for Software Catalog applications.

If the Organization component is enabled on your appliance, you create Software assets for each organization separately.

## *Add Software assets on the Software list*

You can add Software assets for one or more applications at once by selecting applications on the *Software* list.

**Software assets can be added for *Software* list inventory only. Software assets are not required for applications in the Software Catalog inventory.**

1. Go to the *Software* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **Software**.
2. Select the check box next to one or more applications.
3. Select **Choose Action** > **Create Asset**.

The assets are created, and they appear on the *Assets* list.

## *Add Software assets in the Assets section*

You can create Software assets one-at-a-time in the *Assets* section.

**Software assets can be added for *Software* list inventory only. Software assets are not required for applications in the Software Catalog inventory.**

1. Go to the *Software Asset Detail* page:

a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
b. On the left navigation bar, click **Asset Management**, then click **Assets**.
c. Select **Choose Action > New > Software**.

2. Complete the asset fields as follows:

| Option | Description |
|---|---|
| **Subtype** | The asset subtype, if applicable. |
| **Asset Status** | The asset status, if applicable. You can select a default asset status, or a custom one (if they exist). A default installation of the appliance includes the following asset statuses:<br>• **Active**: Any asset that is deployed, active, or in use.<br>• **Disposed**: An asset that is no longer available for use.<br>• **Expired**: A software license or contract asset that has expired.<br>• **In Stock**: A recently received asset.<br>• **Missing**: Any asset that cannot be located.<br>• **Repair**: An asset that is being repaired.<br>• **Reserved**: An asset that is set aside for a specific person or use.<br>• **Retired**: Any asset that reached its end-of-life state, or is no longer in use.<br>• **Stolen**: An asset that has been reported as stolen.<br>For more information, see View and configure asset lifecycle settings. |
| **Location** | Select the location for this asset from the drop-down list. The values in this list contain all locations defined on the appliance. See Managing locations<br>**TIP:** Locations can be defined for all default asset types, including Cost Centers, Departments, Devices, Licenses, Software, and Vendors. |
| **Name** | The asset name. For example, Office Pro SW Asset. |
| **Software** | The name of the application to associate with the asset. To search for items, begin typing in the field. |
| **Software Label** | Select a label from the drop-down list. The list is empty unless you have created a Smart Label. You can type in the box to look for specific labels. |

| Option | Description |
|---|---|
| **Barcode Data** | Review or add barcodes that you want to associate with this asset. See Add barcodes to assets. |
| **Barcode Name** | |
| **Barcode Format** | |

a. In the *Name* field, enter a name for the asset. For example, Office Pro SW Asset.
b. **Optional**: In the *Software* field, select the name of the application to associate with the asset. To search for items, begin typing in the field.
c. **Optional**: In the *Software Label* field, select a label in the *Select label* drop-down list. The list is empty unless you have created a Smart Label. To filter the labels list, enter a few characters of the label name in the *Filter* field.

3. Click **Save**.

The new asset appears on the *Assets* list.

# Managing physical and logical assets

Physical assets include device hardware and software, as well as other physical assets, such as office furniture. Logical assets include locations, cost centers, and vendors.

The appliance Inventory component automatically provides the Asset Management component with information about physical assets, such as devices, that report software and hardware inventory to the appliance. For physical and logical assets that do not report inventory to the appliance, however, information is added and updated manually. See Update custom asset fields manually.

Managing logical assets enables you to:

- Identify and protect logical assets.
- Establish relationships between logical assets and use them in reports. For example, geographical relationships or the relationships of business entities.

You can also add custom logical assets, such as support contracts, to track additional metadata about those objects.

## Add physical Asset Types

You can add physical Asset Types as needed.

1. Go to the *Asset Type Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Asset Management**, then click **Asset Types**.
   c. Select **Choose Action** > **New**.
2. In the *Name* field, enter a descriptive name for the asset, such as Laptop.
3. In the *Defaut Asset Status* field, enter a default asset status, or a custom one (if they exist).

**A default installation of the appliance includes the following asset statuses:**

- **Active**: Any asset that is deployed, active, or in use.
- **Disposed**: An asset that is no longer available for use.
- **Expired**: A software license or contract asset that has expired.
- **In Stock**: A recently received asset.
- **Missing**: Any asset that cannot be located.
- **Repair**: An asset that is being repaired.
- **Reserved**: An asset that is set aside for a specific person or use.
- **Retired**: Any asset that reached its end-of-life state, or is no longer in use.
- **Stolen**: An asset that has been reported as stolen.

4. If you want to allow users who do not have the Administrator role to delete assets of this type, select **Allow non-administrators to delete assets**. This option is turned off by default. Only administrators can configure this option. For other types of users, this field appears on the page, but it is disabled.

**For more information on user roles, see Add or edit User Roles.**

5. If you want assets of this type to display the asset location in the asset details, select **Show Location settings**. This option is turned off by default.
6. Under *Barcodes*, click +, and provide the following information:

| Option | Description |
|---|---|
| **Barcode Data** | The barcode number. Barcode numbers are always unique, they cannot be shared between multiple assets. However, it is possible for an active asset to share a barcode with an archived asset. |
| **Barcode Name** | The barcode tag associated with this asset type. There can be only one barcode of the same type per asset. |
| **Barcode Format** | The barcode format. For example, UPC-A, Code 11, or UPC-E. |

**You can add as many barcodes as needed.**

7. Click the **Add** button on the right side of the page: +.

   **A new line appears.**
8. Provide the following information in the new line. For example:
   a. In the *Name* field, enter Brand.
   b. In the *Required* column, select the check box to make the field required.
   c. In the *Type* drop-down list, select **Single Select**.

      **The *Available Values* field is enabled.**

   d. Go back to the *Available Values* field and enter the brands you use. These will appear in the select list. Separate each brand with a comma.

      **For example: Apple, Dell, IBM. This ensures that brand names, such as IBM, are referred to consistently instead of using variations, such as IBM and International Business Machines.**
9. Click **Save** at the end of the row, then add a row:
   a. Click the **Add** button: +.
   b. Provide additional information in the new line.

For example:

- In the *Name* field, enter Serial Number.
- In the *Type* drop-down list, select **Text**.

10. Click **Save** at the end of the row, then add a row:
    a. Click the **Add** button: +.
    b. Provide additional information in the new line.

    **For example:**

    - In the *Name* field, enter Location.
    - In the *Type* drop-down list, select **Asset Location**.

11. Click **Save** at the end of the row, then add a row:
    a. Click the **Add** button: +.
    b. Provide additional information in the new line.

    **For example:**

    - In the *Name* field, enter Department, and in the *Type* drop-down list select **Asset Department**.
    - In the *Name* field, enter Cost Center, and in the *Type* drop-down list select **Asset Cost Center**.

12. Click **Save** at the end of the row, then add a row:
    a. Click the **Add** button: +.
    b. Provide additional information in the new line.

    **For example:**

    - In the *Name* field, enter Warranty Expiration.
    - In the *Type* drop-down list, select **Date**. The format is **yyyy-mm-dd**. The supported range is 1000-01-01 to 9999-12-31.

13. Click **Save** at the end of the row, then click **Save** at the bottom of the page.

# Archive device Assets

You can archive device Assets as needed.

Appliance administrators can archive device Assets that are no longer in use. When you archive a device Asset, that device is no longer included in the node license count for the appliance. Devices marked for archiving are archived after a pre-defined number of days, as specified in the General Settings. The default period is three days. This allows administrators to revert the device from being marked from archiving, if needed.

For more information about changing the length of time during which device Assets are marked for archiving, see Configure Admin-level or organization-specific General Settings

Once a device is archived, its record is deleted, and it can no longer be reverted to the previous active state. You can review the device details for an archived device Asset, if required.

1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
2. On the left navigation bar, click **Assets**.
3. Complete one of the following steps:
   - **On the *Assets* list, select a device Asset. Select Choose Action > Archive.**
   - **On the *Assets* list, click the name of a device Asset. On the *Asset Detail* page that appears, click Archive.**
4. In the *Archive Asset* dialog box that appears, in the *Archive Reason* field, type the reason for this action, and click **Save**.

   **The *Archive Asset* dialog box closes, and the *Assets* list refreshes, indicating that the device Asset is in the Pending Archive state (  ). When the Pending Archive period expires, the appliance archives the device Asset, and it enters the Archived state (  ).**
5. If you want to remove a device Asset from the Pending Archive state:
   a. On the *Assets* list, click the name of a device Asset that is in the Pending Archive state.
   b. On the *Asset Detail* page that appears, click **Undo Pending Archive**.

   **The *Asset Detail* page closes, and the *Assets* list refreshes, indicating that the device Asset is no longer in the Pending Archive state.**
6. If you want to review the device details for an archived device Asset, on the *Assets* list, in the *Name* column, click the device name enclosed in brackets.

   **The *Device Details* page appears. This page contains a subset of the information typically shown for a non-archived device Asset. For more information about the fields appearing on this page, see Groups and sections of items in device details.**

# Maintaining and using manual asset information

For assets that do not report inventory to the appliance automatically, you can manually add asset information. This is useful for logical assets such as locations, cost centers, and vendors, and physical assets, such as office furniture and equipment. Asset information that is imported or added manually must be updated manually when that information changes.

There are two ways to keep manual asset information up to date:

- Manage the information in spreadsheets and re-import them to the appliance periodically.
- Maintain the information manually in the Asset Management component.

Whichever method you choose, use it consistently to ensure that data remains current.

### Creating an asset administrator role

You can create an asset administrator role to permit other users to update assets in the appliance.

For information on creating roles, see Setting up roles for user accounts.

### Scheduling regular imports

To maintain asset information efficiently, you can continue updating source spreadsheets. Each time you import, the Asset Management component determines whether to import or update records based on what was designated as the primary key (PK) when the asset was created:

- If the primary key matches an existing record, the Asset Management component compares the data and updates the existing record.
- If there is no matching primary key in the row, a new record is generated.

See Importing license data in CSV files.

**TIP:** Before importing new data, consider running a report to export the current data. That way you can return to the original data if there is anything wrong with the structure of the new data.

### Using asset data in reports

You can export data from the Asset Management component in standard reports.

Some standard reports are:

- **Unapproved Software Installation**: Software found on devices where no license has been approved.
- **Software Compliance Simple**: License counts, such as those found on the *Assets* list.
- **Software License Compliance Complete**: A list of software and devices that are impacted by each license.

In addition, you can create your own reports. See About reports.

# Managing locations

A location entity represents a physical site that contains one or more of your assets.

You can add, move, or delete location entities, as needed.

## Manage locations

Locations represents physical sites containing one or more of your assets. They are based on location types.

You can add, move, or delete location entities, or export location details into a file, as needed.

1. Go to the *Locations* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Asset Management**, then click **Locations**.
2. To add a location, select **Choose Action** > **New**.

    **See Add or edit locations for more information.**
3. To delete a location:
    a. Select the row containing the location that you want to delete.
    b. Select **Choose Action** > **Delete**.
    c. **Optional**. In the *Delete location* dialog box that appears, specify the replacement location to which you want to move all the assets associated with the location you are about to delete.
    d. Click **Confirm**.

**NOTE:** Deleting a parent location does not remove its child locations from the system.

4. To move a location:
    a. Select the row containing the location that you want to move.
    b. Select **Choose Action** > **Move**.
    c. In the *Move location* dialog box that appears, specify the parent location to which you want to move the location.
    d. Click **Confirm**.

    **The** *Locations* **list refreshes, no longer showing the newly moved locations. To view child locations associated with the specific parent, in the row containing the parent location, click ▸ on the right of the location name.**
5. In the *Name* field, add or change the name as needed.

    **TIP:** Additional options are available for Device and License Asset Types. See About customizing the Device Asset Type and Customize the License Asset Type.
6. To export one or more locations to a file:
    a. Select the rows containing the locations that you want to export.
    b. Select **Choose Action** > **Export**, and then choose the appropriate option.

    **For example, to export all locations to a CSV file, select them in the list, and then select Choose ActionExportExport All To CSV Format.**

    **You can import location information from a file using the** *Import Assets* **wizard. For more information, see Importing asset data using CSV files.**

# Add or edit locations

The *Location Detail* page shows the details of the selected location.

Location information is static and changes only when you import data or change it manually.

1. Go to the *Location Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Asset Management**, then click **Locations**.
    c. Display the *Location Detail* page by doing one of the following:

    - Click the name of a location.
    - Select **Choose Action** > **New**.
2. Provide the following information about the location: **Subtype**, **Name** (required), **Description**, **Web site**, **Address**, **Locale**, and **Phone Number**.
3. When you are editing an en existing location, to associate it with a device, in the *Assigned Devices* section, click +, select a device, and click **Add**.

    **The selected device appears in the list below.**
4. When you are editing an en existing location, to associate it with an asset, in the *Assigned Assets* section, click +, select an asset, and click **Add**.

    **The selected asset appears in the list below.**
5. Click **Save**.

# Customize location fields

You can rename, create, and delete fields on the *Location Detail* page, as needed.

1. Go to the *Location Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Asset Management**, then click **Locations**.
    c. Display the *Location Detail* page by doing one of the following:
    - Click the name of a location.
    - Select **Choose Action** > **New**.
2. Specify location subtypes, if needed.
    a. In the *Subtypes* section, click **Add Subtype**.

    **The** *Location Asset Subtype Detail* **page appears. The** *Inherited Fields* **section shows fields that are available to the Asset Subtype because they have been added to the Asset Type.**

    b. On the *Location Asset Subtype Detail* page that appears, review, and edit the following options, as needed:

| Options | Description |
|---|---|
| **Name** | The name of the Location Subtype. This name appears in the list on the *Location Detail* page. |
| **Default** | Indicates whether to use the Location Subtype as the default for new locations. If you select this check box, new locations are automatically assigned to this Asset Subtype. You can change this setting any time. |
| **Inherited Fields** | This section displays the default location fields. You cannot make any changes to this section. |
| **Subtype Fields** | Add any fields that are specific to this Subtype, as needed. To add a field, click +, and specify the required information. |

    c. Click **Save**.
3. If you want the locations to use barcodes, specify one or more tags in the *Barcode Tags* area.

    **Any locations that you create going forward will have the barcode tags available for configuration. For example, if you specify a Corporate Tag and a Dell Location Tag, barcodes identified with these two tags will be available for selection in on the** *Location Detail* **page, when you create or edit a location.**

    **To add a barcode, click +, type the barcode name, and click Save.**
4. Specify additional location fields, as needed.
    a. To add a field, in the *Asset Fields* area, click +.
    b. Provide the following information for each new field:

| Option | Description |
|---|---|
| **Name** | The field name. |

| Option | Description |
|---|---|
| **Available Values** | The values that appear in fields that contain lists of values. This field is enabled when you select **Single Select** or **Multiple Select** from the *Type* drop-down list. If you select **Single Select** or **Multiple Select**, you must enter at least one value in this field. To use multiple values, separate each value with a comma. |
| **Required** | Indicates whether the field is mandatory or optional. If this check box is selected, users must enter a value in the field when creating assets of the selected type. |
| **Type** | The type of field. Field types include:<br>• **Attachment**: Enables users to add attachments to the asset.<br>• **Currency**: Used for monetary values.<br>• **Software Catalog**: Enables users to associate the asset with an application in the Software Catalog.<br>• **Date**: Used for calendar information.<br>• **Label**: Enables users to associate a label with the asset.<br>• **Link**: Used for Internet links. Links must be valid URLs, such as **http://quest.com**.<br>• **Multiple Select**: Displays a list where multiple values can be selected. The maximum length for each value is 255 characters.<br>• **Notes**: Used for additional information.<br>• **Number**: Used for numerical values expressed as whole numbers.<br>• **Parent**: Enables the asset to point to the same type of asset in a parent-child relationship. For example, you might allow Location types to have a Parent connection, allowing New York to point to a North America location. This can then be used in the reporting system to show all assets in North America.<br>• **Publisher**: Allows you to select from the current list of publishers available in the Software Catalog.<br>• **Single Select**: Displays a value list where only a single value can be selected. The maximum length for each value is 255 characters.<br>• **Text**: Used for additional text. The maximum length is 255 characters.<br>• **Timestamp**: Used to add a day and time to the record.<br>• **User**: Used to associate user records with an asset.<br>• **Assets Asset Type**: Used to specify relationships among Asset Types. |

c. Click **Save**.

5. Click **Save**.

# Managing contracts

A contract is a form of purchase agreement between the vendor and the end user, that describes the usage terms. Contracts can be associated with software and hardware items your business uses, and also for physical items such as office furniture or coffee machines.

You can add, edit, or delete contracts, as needed.

# Manage contracts

Contracts represent purchase or service agreements for hardware and software items your business uses, and also for any physical products or services, such as office chairs or coffee suppliers.

You can add, edit, or delete contracts, or export contract details into a file, as needed.

1. Go to the *Contracts* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Asset Management**, then click **Contracts**.
2. To add a contract, select **Choose Action > New**.

    **See Add or edit contracts for more information.**
3. To delete a contract:
    a. Select the row containing the contract that you want to delete.
    b. Select **Choose Action > Delete**.
4. To export one or more contract entries to a file:
    a. Select the rows containing the contracts that you want to export.
    b. Select **Choose Action > Export**, and then choose the appropriate option.

        **For example, to export all contracts to a CSV file, select them in the list, and then select Choose Action > Export > Export All To CSV Format.**

    **You can import contract information from a file using the *Import Assets* wizard. For more information, see Importing asset data using CSV files.**

# Add or edit contracts

The *Contract Detail* page shows the details of the selected contract.

Use this page to add or edit contracts, as needed.

1. Go to the *Contract Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Asset Management**, then click **Contracts**.
    c. Display the *Contract Detail* page by doing one of the following:

    - Click the name of a contract.
    - Select **Choose Action > New > Contract-Hardware**.
    - Select **Choose Action > New > Contract-Software**.
    - Select **Choose Action > New > Contract-Other**.
2. Provide general information about the contract.

    **Contracts are a form of asset types, and apart from the *Name* field which is always required, the collection of the fields available with each contract type can be changed to suit your needs. For more information about Asset Types, see About Asset Types**

    **The following fields typically appear on a contract record:**

| Option | Description |
|---|---|
| **Subtype** | The subtype assignment for this contract asset, if applicable. *None* indicates that the asset is not assigned to a subtype.<br>You can specify the contract subtypes in the applicable contract Asset Subtype (**Contract-Software**, **Contract-Hardware**, or **Contract-Other**). For more information about asset subtypes, see About Asset Subtypes, custom fields, and device detail preferences. |
| **Asset Status** | The contract status, if applicable. You can select a default asset status, or a custom one (if they exist). A default installation of the appliance includes the following asset statuses:<br>• **Active**: Any asset that is deployed, active, or in use.<br>• **Disposed**: An asset that is no longer available for use.<br>• **Expired**: A software license or contract asset that has expired.<br>• **In Stock**: A recently received asset.<br>• **Missing**: Any asset that cannot be located.<br>• **Repair**: An asset that is being repaired.<br>• **Reserved**: An asset that is set aside for a specific person or use.<br>• **Retired**: Any asset that reached its end-of-life state, or is no longer in use.<br>• **Stolen**: An asset that has been reported as stolen.<br>For more information, see View and configure asset lifecycle settings. |
| **Location** | The location of this asset. |
| **Name** | The name of the contract. |
| **Contract Number** | The contract number. |
| **Contract Description** | Additional information about the contract. |
| **Contract Start Date** | The date when the contract is activated. |
| **Contract End Date** | The date when the contract ends. |
| **Anniversary** | **Software and hardware contracts only**. An indicator of when the contract is up for renewal. |
| **Publisher** | **Software and hardware contracts only**. The contract publisher. |
| **Publisher Program** | **Software contracts only**. The entries available for selection are populated from the Software Catalog, depending on what you set in the *Publisher* field. When you select a Publisher, the entries available for selection in this field are populated with the program entries associated with the selected Publisher, that exist in your Software Catalog. |
| **Vendor** | The name of the vendor associated with the contract. You can select from the available vendor entries. |

| Option | Description |
|---|---|
| **Vendor Agreement Number** | The number of the vendor agreement associated with the contract. |
| **Manufacturer** | **Hardware contracts only**. The manufacturer of the device associated with this contract. |
| **Hardware Type** | **Hardware contracts only**. The type of the hardware device associated with this contract, such as laptop or server. |
| **Hardware Series** | **Hardware contracts only**. The series of the hardware device associated with this contract. |
| **Hardware Model** | **Hardware contracts only**. The model number of the hardware device associated with this contract. |
| **Purchase Order Number** | The number of the purchase order associated with the contract. |
| **Purchase Order Date** | The date of the purchase order associated with the contract. |
| **Linked Contract** | Another contract that is associated with this contract entry. |
| **Contact Name** | The contact name associated with the contract. |
| **Contact Email** | The contact email address associated with the contract. |
| **Contact Phone** | The contact phone number associated with the contract. |
| **Notes** | Additional information about this contract. |
| **Attachment 1**, **Attachment 2** | Any file attachments associated with the contract. |

3. **Optional**. Add one or more barcodes to the contract, as needed.
   a. Under *Barcodes*, click +, and provide the following information:

| Option | Description |
|---|---|
| **Barcode Data** | The barcode number. Barcode numbers are always unique, they cannot be shared between multiple assets. However, it is possible for an active asset to share a barcode with an archived asset. |
| **Barcode Name** | The barcode tag associated with this asset type. There can be only one barcode of the same type per asset. |
| **Barcode Format** | The barcode format. For example, UPC-A, Code 11, or UPC-E. |

4. Review the information in the *Service Desk* section. If you are editing an existing contract associated with one or more Service Desk tickets, they are listed in this section.
5. Review the information in the *Related Assets* section. If you are editing an existing contract associated with one or more licenses, they are listed in this section.
6. Click **Save**.

# Managing licenses

A license agreement allows you to use a logical or physical asset, such as software or hardware.

You can add, edit, or delete licenses, as needed, and associate them with your physical or logical assets.

## Manage licenses

Licenses allow you to use your logical or physical assets, such as software or hardware that your business uses.

You can add, edit, or delete licenses, or export license details into a file, as needed.

1. Go to the *Licenses* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Asset Management**, then click **Licenses**.
2. To add a license, select **Choose Action > New**.

    **See Add or edit licenses for more information.**
3. To delete a license:
    a. Select the row containing the license that you want to delete.
    b. Select **Choose Action > Delete**.
4. To export one or more license entries to a file:
    a. Select the rows containing the licenses that you want to export.
    b. Select **Choose Action > Export**, and then choose the appropriate option.

        **For example, to export all licenses to a CSV file, select them in the list, and then select Choose Action > Export > Export All To CSV Format.**

    **You can import license information from a file using the *Import Assets* wizard. For more information, see Importing asset data using CSV files.**

## Add or edit licenses

The *License Detail* page shows the details of the selected license.

Use this page to add or edit licenses, as needed. Licenses are a form of asset types, and apart from the license name which is always required, the collection of the fields available with a license record can be changed to suit your needs. For more information about Asset Types, seeAbout Asset Types.

1. Go to the *License Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Asset Management**, then click **Licenses**.
    c. Display the *License Detail* page by doing one of the following:

    - Click the name of a license.
    - Select **Choose Action > New**.
2. On the *License Asset Detail* page, on the *General* tab, provide the following information:

| Option | Description |
|---|---|
| **Subtype** | The Asset Subtype to associate with the license. See About Asset Subtypes, custom fields, and device detail preferences. |
| **Asset Status** | The license status, if applicable. You can select a default asset status, or a custom one (if they exist). A default installation of the appliance includes the following asset statuses:<br>• **Active**: Any asset that is deployed, active, or in use.<br>• **Disposed**: An asset that is no longer available for use.<br>• **Expired**: A software license or contract asset that has expired.<br>• **In Stock**: A recently received asset.<br>• **Missing**: Any asset that cannot be located.<br>• **Repair**: An asset that is being repaired.<br>• **Reserved**: An asset that is set aside for a specific person or use.<br>• **Retired**: Any asset that reached its end-of-life state, or is no longer in use.<br>• **Stolen**: An asset that has been reported as stolen.<br>For more information, see View and configure asset lifecycle settings. |
| **Location** | The name of the location where the asset is located. See Managing locations. |
| **Name** | The name of the license, such as **Office Professional PO #1234**. This is the name that you use to find the asset. If you plan to have multiple licenses associated with an application, provide the purchase order number or purchase date in the fields below to differentiate the licenses. |
| **License Count** | The number of installations or seats the license allows. For example, 50. |
| **Applies to Cataloged Software** | Applications in the Software Catalog inventory to which the license applies. You can associate License assets with multiple applications in the Software Catalog if necessary. However, it is not necessary to associate a License asset with multiple versions of the same application because the appliance does this automatically to support upgrades and downgrades. You can simply associate the current version with the License asset when you add the license information.<br>In addition, if you assign applications from different publishers, such as Microsoft Office and Adobe Acrobat, to the same License asset, the total number of seats specified in the License asset is assigned to each application. For example, if the License asset has 100 seats, both Microsoft Office and Adobe Acrobat are assigned 100 seats. |
| **Applies to Software** | Leave this field blank. A software license cannot be associated with applications from the *Software Catalog* inventory and the *Software* page inventory at the same time. For more information on how to create license assets for cataloged software, see Add License assets for Software page inventory. |
| **License Mode** | The mode of the License asset. For applications that require licenses, and to display license usage information on the *License Compliance* page, select either *Enterprise* or *Unit License*.<br>**NOTE:** Most modes, including *Not Specified*, *Client License*, *Subscription*, *Shareware*, *Freeware*, *OpenSource*, *No Licensing*, and *Site License*, are not used for License Compliance. |

| Option | Description |
|---|---|
| | The license mode is used in these sections of the Administrator Console:<br>• The *License Compliance* list. See View License Compliance information for Software Catalog applications.<br>• The License Compliance chart that is displayed on the *Dashboard*. Values that are marked as ignored on the *Asset Detail* page are shown with a usage level of 100 percent. See About Dashboard widgets. |

3. Click **Next**.
4. On the *License Asset Detail* page, on the *Purchase* tab, provide the following information:

| Option | Description |
|---|---|
| **Contract** | The contract asset associated with the license. |
| **Applies to Cataloged Software** | Applications in the Software Catalog inventory to which the license applies. You can associate License assets with multiple applications in the Software Catalog if necessary. However, it is not necessary to associate a License asset with multiple versions of the same application because the appliance does this automatically to support upgrades and downgrades. You can simply associate the current version with the License asset when you add the license information.<br>In addition, if you assign applications from different publishers, such as Microsoft Office and Adobe Acrobat, to the same License asset, the total number of seats specified in the License asset is assigned to each application. For example, if the License asset has 100 seats, both Microsoft Office and Adobe Acrobat are assigned 100 seats. |
| **Product Key** | The product key associated with the license. You can modify and edit the default information, which can be captured for a License Asset Type. |
| **Unit Cost** | The unit cost associated with the license. You can modify and edit the default information, which can be captured for a License Asset Type. |
| **Vendor** | The name of the Vendor asset you want to associate with the application. the *Vendor* drop-down list is empty unless you have added a Vendor asset. To search for a vendor, begin typing in the list.<br>**NOTE:** Assigning multiple vendors to a single software License asset is not recommended because it can result in inaccurate License Compliance information. |
| **Purchase Order Number** | The purchase order number associated with the license. |
| **Purchase Date** | The date the purchase was made. Click in the field, then select a date on the calendar. |
| **Purchase** | Select one or more purchase records associated with this license. See Managing purchase records. |

5. Click **Next**.
6. On the *License Asset Detail* page, on the *Maintenance* tab, provide the following information:

| Option | Description |
|---|---|
| **Includes Upgrade Rights** | Indicates if the license includes upgrade rights. Upgrade rights refer to the ability to upgrade to a newer version of the licensed software, when such versions become |

| Option | Description |
|---|---|
| | available. For more information, see About license upgrades. Select one of the following options:<br>• **Yes**: Upgrade rights are calculated by comparing the number of existing licenses for the selected software with the counts of available licenses for newer versions of the same software.<br>• **Yes - Select from list**: Choose one or more software versions for which you want to grant upgrade rights. Under *Upgrade Software list*, click **Select cataloged software to add**. The list that appears is populated with higher versions of the selected software to which the license can be upgraded. When you click an entry in the list, your selection appears in the *Upgrade Software list* box. You can add one or more versions, as needed. To delete an item from the list, select it in the *Upgrade Software list* box, and click **Remove**.<br>• **No**: If you do not want to grant upgrade rights to the selected software, select this option. |
| **Includes Maintenance** | Whether the license entitles users to upgrade the installed version of the application. See About License Compliance for Software Catalog applications. |
| **Expiration Date** | If the license includes maintenance, the expiration date of the maintenance period.<br>The appliance License Compliance feature leverages Software Catalog information, such as application release dates. If new application versions are released during the maintenance period, they are automatically covered by this License asset. |
| **Includes Downgrade Rights** | Indicates if the license includes downgrade rights. Downgrade rights refer to the ability to apply licenses for newer software versions to older versions of the same software. For more information, see About license downgrades. Select one of the following options:<br>• **Yes**: Downgrade rights are calculated by comparing the number of existing licenses for the selected software with the counts of available licenses for older versions of the same software.<br>• **Yes - Select from list**: Choose one or more software versions for which you want to grant downgrade rights. Under *Downgrade Software list*, click **Select cataloged software to add**. The list that appears is populated with lower versions of the selected software to which the license can be downgraded. When you click an entry in the list, your selection appears in the *Downgrade Software list* box. You can add one or more versions, as needed. To delete an item from the list, select it in the *Downgrade Software list* box, and click **Remove**.<br>• **No**: If you do not want to grant downgrade rights to the selected software, select this option. |

7. Click **Next**.
8. On the *License Asset Detail* page, on the *Related* tab, provide the following information:

| Option | Description |
|---|---|
| **Department** | The business group or department that owns the application. |
| **Cost Center** | The cost center associated with the department that owns the application. |
| **Approved for Device** | The devices that are approved to use the license. This information is used in License Compliance reporting. For example, if devices have the application installed, but are not on the list of approved devices, the devices are listed in the report titled, |

| Option | Description |
|---|---|
| | *Unapproved Software Installation*. However, the appliance does not enforce license compliance. For example, the appliance does not prevent applications from being installed on managed devices if a license is expired or otherwise out of compliance. |
| **Barcodes** | Add or edit barcodes associated with this license, as required. For more information, see Add barcodes to assets. |

9. Click **Next**.
10. On the *License Asset Detail* page, on the *Custom* tab, provide additional custom data. You can modify the License Asset Type to include as many additional fields as necessary to meet your business objectives. For more information, see Add or customize Asset Types.
11. Click **Next**.
12. On the *License Asset Detail* page, on the *Notes* tab, provide the following information:

| Option | Description |
|---|---|
| **Notes** | Any additional information you want to provide. |
| **License Text** | Any supplemental information about the license, such as a license number. |

13. Click **Save**.

# Managing purchase records

Purchase records document the acquisition of any physical and software products for your organization. Your administrators can keep track of individual purchase records and associate them with related license agreements. A license agreement for a specific asset can be associated with one or more purchase record. For example, your organization may have one license agreement for Adobe Acrobat, and multiple purchase record for that software license, one for each group in the organization.

You can add, edit, or delete purchase records, as needed, and associate them with applicable license agreements.

## Manage purchase records

Your administrators can keep track of individual purchase records used to acquire physical and software products for your organization.

You can add, edit, or delete purchase records, or export purchase record details into a file, as needed.

1. Go to the *Purchases* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Asset Management**, then click **Purchases**.
2. To add a purchase record, select **Choose Action > New**.

    **See Add or edit purchase records for more information.**
3. To delete a purchase record:
    a. Select the row containing the purchase record that you want to delete.
    b. Select **Choose Action > Delete**.
4. To export one or more purchase records to a file:

a. Select the rows containing the purchase records that you want to export.
b. Select **Choose Action > Export**, and then choose the appropriate option.

**For example, to export all purchase record to a CSV file, select them in the list, and then select Choose Action > Export > Export All To CSV Format.**

# Add or edit purchase records

The *Purchase Detail* page shows the details of the selected purchase record.

Use this page to add or edit purchase records, as needed. Licenses are a form of asset types, and apart from the purchase record name and unit quantity which are always required, the collection of the fields available with a license record can be changed to suit your needs. For more information about Asset Types, seeAbout Asset Types.

1. Go to the *License Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Asset Management**, then click **Purchases**.
   c. Display the *Purchase Detail* page by doing one of the following:
   - Click the name of a purchase record.
   - Select **Choose Action > New**.
2. On the *Purchase Detail* page, provide the following information:

| Option | Description |
|---|---|
| **Subtype** | The Asset Subtype to associate with the purchase record. You can create purchase records for *Hardware* or *Software* items. See About Asset Subtypes, custom fields, and device detail preferences. |
| **Asset Status** | The purchase record status, if applicable. You can select a default asset status, or a custom one (if they exist). A default installation of the appliance includes the following asset statuses:<br>• **Active**: Any asset that is deployed, active, or in use.<br>• **Disposed**: An asset that is no longer available for use.<br>• **Expired**: A software license or contract asset that has expired.<br>• **In Stock**: A recently received asset.<br>• **Missing**: Any asset that cannot be located.<br>• **Repair**: An asset that is being repaired.<br>• **Reserved**: An asset that is set aside for a specific person or use.<br>• **Retired**: Any asset that reached its end-of-life state, or is no longer in use.<br>• **Stolen**: An asset that has been reported as stolen.<br>For more information, see View and configure asset lifecycle settings. |
| **Location** | The name of the location where the asset obtained with this purchase is located. See Managing locations. |

| Option | Description |
|---|---|
| **Name** | The name of the purchase record, such as **Office Professional PO #1234**. This is the name that you use to associate this purchase order with a license agreement, as applicable. |
| **Description** | The description of the purchase order. |
| **Purchase Order Number** | The number of the purchase order issued by your organization. |
| **Purchase Order Date** | The date on which your organization issued the purchase order. |
| **Quantity** | The number of units purchased. |
| **Unit Cost** | The cost of an individual unit purchased. |
| **Vendor** | The name of the vendor that the unit is purchased from. |
| **Vendor Order Number** | The number of the purchase order issued by the vendor. |
| **Vendor Order Date** | The date on which the vendor issued the purchase order. |
| **Proof of Purchase** | An image containing the photo of the purchase record. |
| **Notes** | Any additional information you want to provide. |
| **Software Title** | **Software only**. The name of the purchased software. |
| **Publisher** | **Software only**. The publisher of the purchased software. |
| **Contract** | **Software only**. The contract associated with the software purchase. |
| **Product Key** | **Software only**. The product key of the purchased software. |
| **Maintenance Expiration Date** | **Software only**. The date on which the maintenance for the purchased software ends. |
| **Proof of Maintenance** | **Software only**. An image containing the photo of the maintenance agreement. |
| **Manufacturer** | **Hardware only**. The manufacturer of the purchased hardware item. |
| **Model** | **Hardware only**. The model name of the purchased hardware item. |
| **Specifications** | **Hardware only**. Any specifications for the purchased hardware item, as applicable. |
| **Serial Number** | **Hardware only**. The serial number of the purchased hardware item. |

| Option | Description |
|---|---|
| **Contract** | **Hardware only**. The contract associated with the purchased hardware item. |
| **Warranty Start Date** | **Hardware only**. The date on which manufacturer's warranty for purchased hardware item starts. |
| **Warranty End Date** | **Hardware only**. The date on which manufacturer's warranty for purchased hardware item ends. |
| **Support End Date** | **Hardware only**. The date on which the support for the purchased hardware item ends. |
| **Barcodes** | Add or edit barcodes associated the items acquired with this purchase order, as required. For more information, see Add barcodes to assets. |

# Setting up License Compliance

To track License Compliance information for applications, you need to create License assets. License assets can be associated either with applications in the Software Catalog inventory or the *Software* page inventory. License assets cannot be associated with both inventory types at the same time.

The options for tracking licenses, and the requirements for setting up License Compliance, differ for Software Catalog inventory and for *Software* page inventory.

## About License Compliance for Software Catalog applications

The appliance enables you to view License Compliance information for applications in the Software Catalog inventory. This information appears on the *License Compliance* page and in the License Compliance Dashboard widget.

After you configure License assets for applications in the Software Catalog inventory, you can view the number of seats installed on Agent-managed devices, the number of seats available, the type of licenses applied, and, if metering is enabled for the application, usage information. In addition, the appliance leverages information in the Software Catalog to automatically apply the correct licenses to application versions that are classified as upgraded or downgraded.

To set up License Compliance for applications in the Software Catalog inventory:

- (Optional) Customize the License Asset Type to meet your information management requirements. See Customize the License Asset Type.
- (Optional) Enable metering for Software Catalog applications. When metering is enabled, the License Compliance page shows whether applications have or have not been used in the past 30, 60, and 90 days. See About software metering.
- Create License assets and associate them with applications in the Software Catalog inventory. See Add License assets for Software Catalog inventory.
- (Optional) Set the threshold levels for License Compliance used on the Dashboard widget. The default *Warning Threshold* is 90. The default *Critical Threshold* is 100. See Customize license usage warning thresholds.

## About license upgrades

Application maintenance plans often enable users to upgrade to newer versions of applications when those versions become available, and the *License Compliance* page shows the number of installations that are considered to be upgrades.

To track upgrades, the appliance uses the information in the Software Catalog and the license details to determine whether to associate new versions of applications with existing licenses. For example, if a License asset was created for the 1.0 version of an application, and the maintenance plan entitles users to upgrade, the 2.0 version of the application is automatically covered by the License asset when it is released. In this example, the License asset must be configured as follows:

- The *Includes Maintenance* field must be set to *Yes*.
- The *Maintenance Expiration Date* must be later than the version 2.0 GA (General Availability) date in the Software Catalog.
- The *License Mode* must be *Enterprise* or *Unit License*.
- The *Include Upgrade Rights* must be set to *Yes* or *Yes - Select from list*.

For more information about these settings, see Add License assets for Software Catalog inventory.

## About license downgrades

Vendors often allow users to apply licenses for newer versions of applications to older versions, and these types of installations are referred to as downgrades. The *License Compliance* page shows the number of installations that are considered to be downgrades.

License seats are first allocated to installations of the latest version of the application. If additional seats are available, and if the vendor allows downgrades, the seats are automatically allocated to installations that are considered downgrades.

Licenses for upgrades are always allocated before licenses for downgrades.

# Customize the License Asset Type

You can add, change, or delete the fields available to the License Asset Type as needed. The License Asset Type is the template that determines the fields available when you add License assets.

If the Organization component is enabled on your appliance, you customize the License Asset Type for each organization separately.

1. Go to the *Asset Types* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Asset Management**, then click **Asset Types**.
2. In the *Name* column, click **License** to display the *Asset Type Detail* page.
3. In the *Defaut Asset Status* field, enter a default asset status, or a custom one (if they exist).

**A default installation of the appliance includes the following asset statuses:**

- **Active**: Any asset that is deployed, active, or in use.
- **Disposed**: An asset that is no longer available for use.
- **Expired**: A software license or contract asset that has expired.
- **In Stock**: A recently received asset.
- **Missing**: Any asset that cannot be located.
- **Repair**: An asset that is being repaired.
- **Reserved**: An asset that is set aside for a specific person or use.
- **Retired**: Any asset that reached its end-of-life state, or is no longer in use.
- **Stolen**: An asset that has been reported as stolen.

4. In the *Name* field, type the name of the Asset Type.

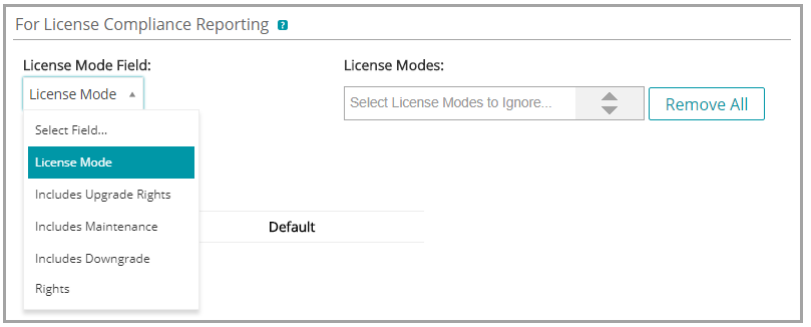
   **The default for this type of asset is *License*.**

5. **Optional**: In the *For License Compliance Reporting* section, select the fields to use for License Compliance.

   **Information from the selected *License Mode* field appears on the Dashboard *License Compliance* widget.**

6. Do one of the following:

   - **In the *License Mode Field* drop-down list, keep the default as Select Field. This makes all of the values in the *License Mode Field* available for License Compliance. If you have more than one single-select or multiple-select field on the *Asset Fields* list, the first field that appears on the list, and all of its values, is used in the License Compliance widget.**
   - **In the *License Mode Field* drop-down list, select a field, such as License Mode, to be used for License Compliance. By default, this drop-down list contains a single field, but you can add fields as needed. If you select a field, such as License Mode as shown in the following illustration, only the selected field is used for License Compliance.**

     In addition, when you select a field, you can choose the values, if any, you want to ignore in the License Compliance chart. Values that are ignored are listed at 100 percent usage and displayed in gray.
     By default *License Mode* is the only single- or multiple-select field available, so it is the only field listed. If you add single- or multiple-select fields on the *Asset Fields* table, they appear in this list as well, and they appear on the *Asset Detail* page when you add a License asset. However, only the selected field, or the first field on the *Asset Fields* list, is used in the *License Compliance* widget.

7. **Optional**: Modify the *License Mode* field or values on the *Asset Fields* table.
   a. Click the **Edit** button at the end of a row: .
   b. Change the field information as needed, then click **Save** at the end of the row.

c. To add a field, click the **Add** button in the table heading:  . Add field information, then click **Save** at the end of the row.

d. To change the order of fields, drag the **Reorder** button:  .

e. To remove a field, click **Delete** button:  .

8. Click **Save** at the bottom of the page.

**Related topics**

View License Compliance and Configuration information.

# Add License assets for Software Catalog inventory

You can add License assets for applications in the Software Catalog inventory. Adding License assets enables you to view license compliance information on the *License Compliance* list and on the License Compliance *Dashboard* widget.

Software Catalog applications must be classified as *Discovered*, *Not Discovered*, or *Locally Cataloged*. You cannot add License assets for applications classified as *Uncataloged*.

When you associate License assets with applications, you can also view license information on the *Software Catalog Detail* page. If the Organization component is enabled on your appliance, you manage license information for each organization separately.

**TIP:** To add License assets for multiple applications at once, you can import the information from spreadsheets or CSV files. See Example: Import license data from prepared spreadsheets.

1. Go to the *Software Catalog* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **Software Catalog**.
2. Click the name of an application to display the *Software Catalog Detail* page.
3. Near the bottom of the page, click **Add New License** to display the *License Asset Detail* page.
4. On the *License Asset Detail* page, on the *General* tab, provide the following information:

| Option | Description |
|---|---|
| **Subtype** | The Asset Subtype to associate with the license. See About Asset Subtypes, custom fields, and device detail preferences. |

| Option | Description |
|---|---|
| **Asset Status** | The license status, if applicable. You can select a default asset status, or a custom one (if they exist). A default installation of the appliance includes the following asset statuses:<br>• **Active**: Any asset that is deployed, active, or in use.<br>• **Disposed**: An asset that is no longer available for use.<br>• **Expired**: A software license or contract asset that has expired.<br>• **In Stock**: A recently received asset.<br>• **Missing**: Any asset that cannot be located.<br>• **Repair**: An asset that is being repaired.<br>• **Reserved**: An asset that is set aside for a specific person or use.<br>• **Retired**: Any asset that reached its end-of-life state, or is no longer in use.<br>• **Stolen**: An asset that has been reported as stolen.<br>For more information, see View and configure asset lifecycle settings. |
| **Location** | The name of the location where the asset is located. See Managing locations. |
| **Name** | The name of the license, such as **Office Professional PO #1234**. This is the name that you use to find the asset. If you plan to have multiple licenses associated with an application, provide the purchase order number or purchase date in the fields below to differentiate the licenses. |
| **License Count** | The number of installations or seats the license allows. For example, 50. |
| **Applies to Cataloged Software** | Applications in the Software Catalog inventory to which the license applies. You can associate License assets with multiple applications in the Software Catalog if necessary. However, it is not necessary to associate a License asset with multiple versions of the same application because the appliance does this automatically to support upgrades and downgrades. You can simply associate the current version with the License asset when you add the license information.<br>In addition, if you assign applications from different publishers, such as Microsoft Office and Adobe Acrobat, to the same License asset, the total number of seats specified in the License asset is assigned to each application. For example, if the License asset has 100 seats, both Microsoft Office and Adobe Acrobat are assigned 100 seats. |
| **Applies to Software** | Leave this field blank. A software license cannot be associated with applications from the *Software Catalog* inventory and the *Software* page inventory at the same time. For more information on how to create license assets for cataloged software, see Add License assets for Software page inventory. |
| **License Mode** | The mode of the License asset. For applications that require licenses, and to display license usage information on the *License Compliance* page, select either *Enterprise* or *Unit License*.<br>**NOTE:** Most modes, including *Not Specified*, *Client License*, *Subscription*, *Shareware*, *Freeware*, *OpenSource*, *No Licensing*, and *Site License*, are not used for License Compliance. |

| Option | Description |
|---|---|
| | The license mode is used in these sections of the Administrator Console:<br>• The *License Compliance* list. See View License Compliance information for Software Catalog applications.<br>• The License Compliance chart that is displayed on the *Dashboard*. Values that are marked as ignored on the *Asset Detail* page are shown with a usage level of 100 percent. See About Dashboard widgets. |

5. Click **Next**.
6. On the *License Asset Detail* page, on the *Purchase* tab, provide the following information:

| Option | Description |
|---|---|
| **Contract** | The contract asset associated with the license. |
| **Applies to Cataloged Software** | Applications in the Software Catalog inventory to which the license applies. You can associate License assets with multiple applications in the Software Catalog if necessary. However, it is not necessary to associate a License asset with multiple versions of the same application because the appliance does this automatically to support upgrades and downgrades. You can simply associate the current version with the License asset when you add the license information.<br>In addition, if you assign applications from different publishers, such as Microsoft Office and Adobe Acrobat, to the same License asset, the total number of seats specified in the License asset is assigned to each application. For example, if the License asset has 100 seats, both Microsoft Office and Adobe Acrobat are assigned 100 seats. |
| **Product Key** | The product key associated with the license. You can modify and edit the default information, which can be captured for a License Asset Type. |
| **Unit Cost** | The unit cost associated with the license. You can modify and edit the default information, which can be captured for a License Asset Type. |
| **Vendor** | The name of the Vendor asset you want to associate with the application. the *Vendor* drop-down list is empty unless you have added a Vendor asset. To search for a vendor, begin typing in the list.<br>**NOTE:** Assigning multiple vendors to a single software License asset is not recommended because it can result in inaccurate License Compliance information. |
| **Purchase Order Number** | The purchase order number associated with the license. |
| **Purchase Date** | The date the purchase was made. Click in the field, then select a date on the calendar. |
| **Purchase** | Select one or more purchase records associated with this license. See Managing purchase records. |

7. Click **Next**.
8. On the *License Asset Detail* page, on the *Maintenance* tab, provide the following information:

| Option | Description |
|---|---|
| **Includes Upgrade Rights** | Indicates if the license includes upgrade rights. Upgrade rights refer to the ability to upgrade to a newer version of the licensed software, when such versions become |

| Option | Description |
|---|---|
| | available. For more information, see About license upgrades. Select one of the following options:<br>• **Yes**: Upgrade rights are calculated by comparing the number of existing licenses for the selected software with the counts of available licenses for newer versions of the same software.<br>• **Yes - Select from list**: Choose one or more software versions for which you want to grant upgrade rights. Under *Upgrade Software list*, click **Select cataloged software to add**. The list that appears is populated with higher versions of the selected software to which the license can be upgraded. When you click an entry in the list, your selection appears in the *Upgrade Software list* box. You can add one or more versions, as needed. To delete an item from the list, select it in the *Upgrade Software list* box, and click **Remove**.<br>• **No**: If you do not want to grant upgrade rights to the selected software, select this option. |
| **Includes Maintenance** | Whether the license entitles users to upgrade the installed version of the application. See About License Compliance for Software Catalog applications. |
| **Expiration Date** | If the license includes maintenance, the expiration date of the maintenance period.<br>The appliance License Compliance feature leverages Software Catalog information, such as application release dates. If new application versions are released during the maintenance period, they are automatically covered by this License asset. |
| **Includes Downgrade Rights** | Indicates if the license includes downgrade rights. Downgrade rights refer to the ability to apply licenses for newer software versions to older versions of the same software. For more information, see About license downgrades. Select one of the following options:<br>• **Yes**: Downgrade rights are calculated by comparing the number of existing licenses for the selected software with the counts of available licenses for older versions of the same software.<br>• **Yes - Select from list**: Choose one or more software versions for which you want to grant downgrade rights. Under *Downgrade Software list*, click **Select cataloged software to add**. The list that appears is populated with lower versions of the selected software to which the license can be downgraded. When you click an entry in the list, your selection appears in the *Downgrade Software list* box. You can add one or more versions, as needed. To delete an item from the list, select it in the *Downgrade Software list* box, and click **Remove**.<br>• **No**: If you do not want to grant downgrade rights to the selected software, select this option. |

9. Click **Next**.
10. On the *License Asset Detail* page, on the *Related* tab, provide the following information:

| Option | Description |
|---|---|
| **Department** | The business group or department that owns the application. |
| **Cost Center** | The cost center associated with the department that owns the application. |
| **Approved for Device** | The devices that are approved to use the license. This information is used in License Compliance reporting. For example, if devices have the application installed, but are not on the list of approved devices, the devices are listed in the report titled, |

| Option | Description |
|---|---|
| | *Unapproved Software Installation*. However, the appliance does not enforce license compliance. For example, the appliance does not prevent applications from being installed on managed devices if a license is expired or otherwise out of compliance. |
| **Barcodes** | Add or edit barcodes associated with this license, as required. For more information, see Add barcodes to assets. |

11. Click **Next**.
12. On the *License Asset Detail* page, on the *Custom* tab, provide additional custom data. You can modify the License Asset Type to include as many additional fields as necessary to meet your business objectives. For more information, see Add or customize Asset Types.
13. Click **Next**.
14. On the *License Asset Detail* page, on the *Notes* tab, provide the following information:

| Option | Description |
|---|---|
| **Notes** | Any additional information you want to provide. |
| **License Text** | Any supplemental information about the license, such as a license number. |

15. Click **Save**.

    **The new License asset appears on the *Licenses* page. The *License Count* number does not change until you update the asset. However, the number in the *Installed* column changes when managed devices that have the software installed check in to the appliance. This enables you to track the number of licenses that have been purchased and installed.**

Perform the following optional tasks:

- Enable metering for Software Catalog inventory. When metering is enabled, the *License Compliance* page shows whether applications have or have not been used in the past 90 days. See About software metering.
- Set license usage warning thresholds. These thresholds are used by the License Compliance Dashboard widget to identify license compliance issues.

# Add License assets for Software page inventory

You can create License assets to track information for applications that require licenses.

Before you create License assets, you should have information such as the number of installations, or seats, allowed by the license, the product key, the purchase order number, and any other information you want to manage in the License asset.

**NOTE:** To create License assets for applications in the *Software* page inventory, you first must create Software assets for those applications. You do not need to create Software assets for applications in the *Software Catalog* page inventory.

If the Organization component is enabled on your appliance, you can create License assets for each organization separately.

**TIP:** You can customize License Asset Types to meet your needs. See Customize the License Asset Type.

1. Go to the *License Asset Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General

Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. Do one of the following:

- On the left navigation bar, click **Licenses**. Select **Choose Action** > **New**.
- On the left navigation bar, click **Inventory**, then click **Software Catalog**. Click the name of an application. On the *Software Catalog Detail* page, click **Add New License**.

2. On the *License Asset Detail* page, on the *General* tab, provide the following information:

| Option | Description |
|---|---|
| **Subtype** | The Asset Subtype to associate with the license. See About Asset Subtypes, custom fields, and device detail preferences. |
| **Asset Status** | The license status, if applicable. You can select a default asset status, or a custom one (if they exist). A default installation of the appliance includes the following asset statuses:<br>• **Active**: Any asset that is deployed, active, or in use.<br>• **Disposed**: An asset that is no longer available for use.<br>• **Expired**: A software license or contract asset that has expired.<br>• **In Stock**: A recently received asset.<br>• **Missing**: Any asset that cannot be located.<br>• **Repair**: An asset that is being repaired.<br>• **Reserved**: An asset that is set aside for a specific person or use.<br>• **Retired**: Any asset that reached its end-of-life state, or is no longer in use.<br>• **Stolen**: An asset that has been reported as stolen.<br>For more information, see View and configure asset lifecycle settings. |
| **Location** | The name of the location where the asset is located. See Managing locations. |
| **Name** | The name of the license, such as **Office Professional PO #1234**. This is the name that you use to find the asset. If you plan to have multiple licenses associated with an application, provide the purchase order number or purchase date in the fields below to differentiate the licenses. |
| **License Count** | The number of installations or seats the license allows. For example, 50. |
| **Applies to Cataloged Software** | Applications in the Software Catalog inventory to which the license applies. You can associate License assets with multiple applications in the Software Catalog if necessary. However, it is not necessary to associate a License asset with multiple versions of the same application because the appliance does this automatically to support upgrades and downgrades. You can simply associate the current version with the License asset when you add the license information.<br>In addition, if you assign applications from different publishers, such as Microsoft Office and Adobe Acrobat, to the same License asset, the total number of seats specified in the License asset is assigned to each application. For example, if the License asset has 100 seats, both Microsoft Office and Adobe Acrobat are assigned 100 seats. |
| **Applies to Software** | Leave this field blank. A software license cannot be associated with applications from the *Software Catalog* inventory and the *Software* page inventory at the same time. |

| Option | Description |
|---|---|
| | For more information on how to create license assets for cataloged software, see Add License assets for Software page inventory. |
| **License Mode** | The mode of the License asset. For applications that require licenses, and to display license usage information on the *License Compliance* page, select either *Enterprise* or *Unit License*.<br>**NOTE:** Most modes, including *Not Specified*, *Client License*, *Subscription*, *Shareware*, *Freeware*, *OpenSource*, *No Licensing*, and *Site License*, are not used for License Compliance.<br>The license mode is used in these sections of the Administrator Console:<br>• The *License Compliance* list. See View License Compliance information for Software Catalog applications.<br>• The License Compliance chart that is displayed on the *Dashboard*. Values that are marked as ignored on the *Asset Detail* page are shown with a usage level of 100 percent. See About Dashboard widgets. |

3. Click **Next**.
4. On the *License Asset Detail* page, on the *Purchase* tab, provide the following information:

| Option | Description |
|---|---|
| **Contract** | The contract asset associated with the license. |
| **Applies to Cataloged Software** | Applications in the Software Catalog inventory to which the license applies. You can associate License assets with multiple applications in the Software Catalog if necessary. However, it is not necessary to associate a License asset with multiple versions of the same application because the appliance does this automatically to support upgrades and downgrades. You can simply associate the current version with the License asset when you add the license information.<br>In addition, if you assign applications from different publishers, such as Microsoft Office and Adobe Acrobat, to the same License asset, the total number of seats specified in the License asset is assigned to each application. For example, if the License asset has 100 seats, both Microsoft Office and Adobe Acrobat are assigned 100 seats. |
| **Product Key** | The product key associated with the license. You can modify and edit the default information, which can be captured for a License Asset Type. |
| **Unit Cost** | The unit cost associated with the license. You can modify and edit the default information, which can be captured for a License Asset Type. |
| **Vendor** | The name of the Vendor asset you want to associate with the application. the *Vendor* drop-down list is empty unless you have added a Vendor asset. To search for a vendor, begin typing in the list.<br>**NOTE:** Assigning multiple vendors to a single software License asset is not recommended because it can result in inaccurate License Compliance information. |
| **Purchase Order Number** | The purchase order number associated with the license. |
| **Purchase Date** | The date the purchase was made. Click in the field, then select a date on the calendar. |

| Option | Description |
|---|---|
| **Purchase** | Select one or more purchase records associated with this license. See Managing purchase records. |

5. Click **Next**.
6. On the *License Asset Detail* page, on the *Maintenance* tab, provide the following information:

| Option | Description |
|---|---|
| **Includes Upgrade Rights** | Indicates if the license includes upgrade rights. Upgrade rights refer to the ability to upgrade to a newer version of the licensed software, when such versions become available. For more information, see About license upgrades. Select one of the following options:<br>• **Yes**: Upgrade rights are calculated by comparing the number of existing licenses for the selected software with the counts of available licenses for newer versions of the same software.<br>• **Yes - Select from list**: Choose one or more software versions for which you want to grant upgrade rights. Under *Upgrade Software list*, click **Select cataloged software to add**. The list that appears is populated with higher versions of the selected software to which the license can be upgraded. When you click an entry in the list, your selection appears in the *Upgrade Software list* box. You can add one or more versions, as needed. To delete an item from the list, select it in the *Upgrade Software list* box, and click **Remove**.<br>• **No**: If you do not want to grant upgrade rights to the selected software, select this option. |
| **Includes Maintenance** | Whether the license entitles users to upgrade the installed version of the application. See About License Compliance for Software Catalog applications. |
| **Expiration Date** | If the license includes maintenance, the expiration date of the maintenance period.<br>The appliance License Compliance feature leverages Software Catalog information, such as application release dates. If new application versions are released during the maintenance period, they are automatically covered by this License asset. |
| **Includes Downgrade Rights** | Indicates if the license includes downgrade rights. Downgrade rights refer to the ability to apply licenses for newer software versions to older versions of the same software. For more information, see About license downgrades. Select one of the following options:<br>• **Yes**: Downgrade rights are calculated by comparing the number of existing licenses for the selected software with the counts of available licenses for older versions of the same software.<br>• **Yes - Select from list**: Choose one or more software versions for which you want to grant downgrade rights. Under *Downgrade Software list*, click **Select cataloged software to add**. The list that appears is populated with lower versions of the selected software to which the license can be downgraded. When you click an entry in the list, your selection appears in the *Downgrade Software list* box. You can add one or more versions, as needed. To delete an item from the list, select it in the *Downgrade Software list* box, and click **Remove**.<br>• **No**: If you do not want to grant downgrade rights to the selected software, select this option. |

7. Click **Next**.
8. On the *License Asset Detail* page, on the *Related* tab, provide the following information:

| Option | Description |
|---|---|
| **Department** | The business group or department that owns the application. |
| **Cost Center** | The cost center associated with the department that owns the application. |
| **Approved for Device** | The devices that are approved to use the license. This information is used in License Compliance reporting. For example, if devices have the application installed, but are not on the list of approved devices, the devices are listed in the report titled, *Unapproved Software Installation*. However, the appliance does not enforce license compliance. For example, the appliance does not prevent applications from being installed on managed devices if a license is expired or otherwise out of compliance. |
| **Barcodes** | Add or edit barcodes associated with this license, as required. For more information, see Add barcodes to assets. |

9. Click **Next**.
10. On the *License Asset Detail* page, on the *Custom* tab, provide additional custom data. You can modify the License Asset Type to include as many additional fields as necessary to meet your business objectives. For more information, see Add or customize Asset Types.
11. Click **Next**.
12. On the *License Asset Detail* page, on the *Notes* tab, provide the following information:

| Option | Description |
|---|---|
| **Notes** | Any additional information you want to provide. |
| **License Text** | Any supplemental information about the license, such as a license number. |

13. Click **Save**.

The new license asset appears on the *Licenses* page. The *License Count* number does not change until you update the asset. However, the number in the *Installed* column changes when managed devices that have the software installed check in to the appliance. This enables you to track the number of licenses that have been purchased and installed.

**Related topics**

Customize the License Asset Type

View License Compliance and Configuration information

About reports

# Importing license data in CSV files

If your license data is in a spreadsheet, you can export it to CSV (comma-separated value) format, then import it into the appliance. Or, you can use a text editor to create a CSV file that contains the data, then import that file.

If the CSV file contains new assets for Asset Types that you have defined, the new assets are added.

## How asset information is handled during import

When asset information is imported, the appliance compares the new information to existing information to determine how the new information should be handled.

Depending on whether the information is new, existing, or duplicated, the appliance performs the following actions:

- **Creates the asset**: If the Primary Key value does not match an existing value, the asset is created.
- **Updates the asset**: If the Primary Key value matches an existing value, the asset information is updated.
- **Flags the asset as a duplicate**: If multiple records for the Asset Type match the value of the CSV field chosen as the Primary Key, OR if multiple records match the associated asset, the asset is flagged as a duplicate. Duplicate records are not imported.

# Importing asset data using CSV files

You can import asset data, such as software license data, using CSV (comma separated value) files.

## *Prepare asset data before importing*

Verify that asset data is appropriate and formatted properly before importing it.

1. Define the basic fields for your assets. If you use product names, make sure they are useful and help to identify the asset. See Adding Software assets.
2. Add header rows to your data. In the Asset Management component, columns without headers are referred to by their column number, so using column header rows can make it easier to identify data.
3. Verify that all columns map to equivalent *Asset Fields* in the Asset Type.

   **Asset Types include default fields, such as** *Asset Name*, *Purchase Order Number*, **and** *Vendor*, **but you can add custom asset fields if necessary. See About adding and deleting asset fields.**

   **TIP:** To view default fields go to the *Asset Detail* page. See Customizing Asset Types.

4. Decide what field or fields to use for the primary key (PK) for the imported assets.

   **Primary Keys are the fields, or combinations of fields, used as unique identifiers for assets being imported. When assets are imported, the appliance uses Primary Keys to determine whether to update an existing record or create a record. You can select one field, or a combination of fields, as the PK.**

5. Save the spreadsheet as a CSV file, in a location you can access from the Administrator Console.

## *Example: Import license data from prepared spreadsheets*

You can import license data from prepared CSV files.

**This example describes how to import License assets for Software Catalog inventory, either as a one-time import, or a scheduled import using a file from a network share. The example shows only the fields that are required for License asset import. You can add additional files, such as unit cost, publisher, product keys, and so on to meet your information management needs.**

If you want to assign the imported assets to an Asset Subtype, add the subtype before you import the assets. See Add Asset Subtypes and select Device Detail page preferences.

1. Create a file in a spreadsheet program such as Excel.
2. Add the following columns and rows. The first row is a header column:

| Asset Name | License Count | License Mode | Includes Maintenance | Applies to Software Catalog |
|---|---|---|---|---|
| Software Title 1 | 100 | Enterprise | Yes | Software Title 1 |
| Software Title 2 | 150 | Enterprise | Yes | Software Title 2 |

| | | | | |
|---|---|---|---|---|
| Software Title 3 | 200 | Enterprise | Yes | Software Title 3 |
| Software Title 4 | 500 | Enterprise | Yes | Software Title 4 |

3. Save the file in CSV format.

   **The values in each column are separated by commas. For example:** `Software Title 1,100,Enterprise,Yes,Software Title 1`

4. Go to the *Upload File* page in the *Import Assets* section:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Asset Management**, then click **Import Assets**.

   - If one or more asset import operations are scheduled, the Import Assets list page appears, listing the import operations. To import assets from an CSV file, click **Choose Action > New** to start the *Import Assets* wizard.
   - If there are no scheduled asset imports on the appliance, the *Import Assets* wizard appears.

5. In the *Import Assets* wizard, select one of the following options:

| Option | Description |
|---|---|
| **Upload an Asset Import CSV file** | Select this option to complete a one-time asset import from a CSV file. Then, click **Browse** or **Choose File**, then select the CSV file. |

| Option | Description |
|---|---|
| **Schedule an Asset Import** | Select this option to perform multiple asset import from a CSV file located on a network drive, at selected time intervals. Then, provide the following information:<br>• **Select Asset Import File Transfer Protocol**:<br>◦ **Samba**: Select this option to access the file using the Samba protocol, and provide the following information:<br>▪ **Enter the UNC path to the Samba share**: Type the directory path to the CSV file.<br>◦ **FTP**: Select this option to access the file on an FTP server, and provide the following information:<br>▪ **Enter the FTP Server hostname or IP address**: Type the host name or IP address of the FTP server.<br>▪ **Enter the FTP sub-directory if one exists**: Type the directory path to the CSV file on the FTP server.<br>◦ **Secure FTP**: Select this option to access the file on a secure FTP server, and provide the following information:<br>▪ **Enter the Secure FTP Server hostname or IP address**: Type the host name or IP address of the secure FTP server.<br>▪ **Enter the SFTP full path**: Type the directory path to the CSV file on the secure FTP server.<br>• **Asset Import CSV file name**: Type the name of the CSV file that you want to import.<br>• **Credentials**: Select the credential that you want to use to access the specified network resource. Any credentials that are defined in the appliance appear in the list. For more information, see Managing credentials. |

6. If the CSV file contains a header row, as it does in this example, select the *File Header Row* check box, then click **Next**.
7. **Scheduled asset imports only**. On the *Asset Import Selection Schedule* page that appears, create a schedule for importing the CSV file.
    a. In the *Asset Import Schedule Name* field, type the name that you want to assign to this schedule.
    b. Select **Enable Asset Schedule**.
    c. In the *Schedule* section, specify the import schedule, as required.

| Option | Description |
|---|---|
| **None** | Run in combination with an event rather than on a specific date or at a specific time. |
| **Every n hours** | Run at a specified interval. |
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |

| Option | Description |
|---|---|
| **Run on the nth of every month/ specific month at HH:MM** | Run on the same day every month, or a specific month, at the specified time. |
| **Run on the nth weekday of every month/specific month at HH:MM** | Run on the specific weekday of every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>`* * * * *`<br>`\| \| \| \| +————————day of week (0-6)(Sun=0)`<br>`\| \| \| +————————month (1-12)`<br>`\| \| +————————day of month (1-31)`<br>`\| +————————hour (0-23)`<br>`+————————minute (0-59)`<br>Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (*/*)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3.<br>Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |

8. On the*Asset Type Selection* page that appears, complete the following steps:
   a. In the *Asset Type* drop-down list, select **License**.
   b. In the *Asset Subtype* drop-down list, select **Productivity**.

> **NOTE:** In this example, the Asset Subtype, *Productivity*, has been added to the License Asset Type. The *Subtype* drop-down list is empty if you have not added subtypes for the License Asset Type. During import, all assets are assigned to the selected subtype.

   c. Click **Next**.

**The *Mapping* page appears.**

9. In the *CSV Fields* drop-down list, select the fields that correspond to the appliance *Required Standard Fields* and *Required Asset Fields*. The mapping of these fields depends on the contents of your CSV file and the Asset Type. For the example in this section, use the following values:
   - *Asset Name*=**Name**
   - *Location*=**Location**
   - *Asset Status*=**Asset Status**

     **NOTE:** If you do not specify this mapping, the default status that is associated with the selected Asset Type is assigned to each imported asset entry.
   - *License Count*=**License Count**
   - *Applies to Cataloged Software*=**Software Catalog**
   - *License Mode*=**Mode**

**NOTE:** You cannot import Asset Assignee values unless the imported Asset is a Device.

10. Select the **PK** check box next to the *Asset Name* field.

**NOTE:** Primary Keys are the fields, or combinations of fields, used as unique identifiers for assets being imported. When assets are imported, the appliance uses Primary Keys to determine whether to update an existing record or create a record. You can select one field, or a combination of fields, as the PK.

11. If the assets you are importing use barcodes, in the *Barcode Fields* area, indicate how you want to import the barcodes.

| Option | Description |
|---|---|
| **Update asset barcodes with selected** | Check if the barcodes supplied in this area already exist, and if they do, update them. If they do not exist, they are created for the specified assets. |
| **Replace all asset barcodes with selected** | Replace the existing barcodes with the specified barcodes. |
| **Barcode Data** | The field in the CSV file that contains the barcode. There can be only one barcode of the same type per asset. |
| **Barcode Name** | The field in the CSV file that contains the barcode tag. Barcode numbers are always unique, they cannot be shared between multiple assets. However, it is possible for an active asset to share a barcode with an archived asset. |
| **Barcode Format** | The field in the CSV file that contains the barcode format. For example, UPC-A, Code 11, or UPC-E. |

12. Click **Preview** to verify the data on the *Confirmation* page.
13. **One-time imports only**. Complete the following steps.
    a. Click **Import** to complete the import process.

       **The *Result for Asset Import* page appears.**

b. Click **Done** to return to the *Assets* page.

14. **Scheduled imports only**. Complete one of the following steps:
    - Click **Save** to save your newly created scheduled import. The *Import Assets* list page appears, showing the scheduled import entry in the list.
    - Click **Run Now** to import assets from the CSV file, and to save your scheduled import settings.

    **The *Import Assets* list page appears.**

When the import is complete, the assets appear in the *Assets* list. If the titles of the software matched titles in the Software Catalog inventory, the assets are associated with the inventory items and you can view them on the *Software Catalog Detail* page for the items.

# Managing License Compliance

You can track the number of software licenses that have been purchased, the number in use on managed devices, and the number that are available. This type of tracking helps you to ensure that your company complies with software license requirements.

For example, if you have 100 licenses for the Adobe® Creative Suite, you might want to know how many of those licenses are actually being used on managed devices. In addition, you might want to know when 80 or 90 percent of those licenses are in use so that you can increase license capacity if necessary. You can customize license usage warning thresholds to track license compliance.

## View License Compliance information for Software Catalog applications

To ensure that your organization has the correct licenses for installed software, you can view License Compliance information on the *License Compliance* list and on the License Compliance Dashboard widget. The *License Compliance* list shows all the software license information you have added through License assets, as well as information from the Software Catalog about applications that require licenses.

- The Agent-managed devices in your inventory have software applications that are available in the Software Catalog.
- You have specified the number of seats available to installed Software Catalog applications as License assets, and you have specified the license mode. See Add License assets for Software page inventory.
- You have established warning thresholds for license usage in the appliance or organization general settings. See Configure Admin-level or organization-specific General Settings.

1. To view complete license compliance information, go to the *License Compliance* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Asset Management**, then click **License Compliance**.

    **NOTE:** Information on the *License Compliance* list is updated every day after the appliance daily backup is complete. If the list is empty, either there are no applications in the Software Catalog inventory, or the information on the page has not been updated. In addition, if all the variances show negative numbers, which indicates that there are more installations than license seats, verify that you have added License assets for the applications. See Add License assets for Software Catalog inventory.
2. To force the appliance to update License Compliance information, click *Update Now* above the list on the left. Depending on the number of applications in inventory, this process might take a few minutes.

**TIP:** When you click **Update Now**, the appliance updates the data for each of the items on the list. However, when you click the **Refresh** button above the list on the right, the appliance simply redisplays the information already collected. It does not obtain new license usage information.

**Information on the *License Compliance* page includes:**

| Column name | Description |
|---|---|
| **Name** | The name of the application. |
| **Publisher** | The name of the application publisher. |
| **Installed** | The number of application installations on Agent-managed devices. |
| **Licensed** | The number of seats remaining under the license. |
| **Variance** | The difference, if any, between the number of license seats available and the number of application installations. A negative number indicates that the application has been installed on more devices than the license allows, and therefore it is out of compliance. |
| **Used Last 90 Days**<br>**Used Last 60 Days**<br>**Used Last 30 Days** | The number of application installations that have been launched in the previous 90, 60, or 30 days. A dash in this column indicates that metering is not enabled for the application.<br>**NOTE:** To obtain accurate usage information, metering must be enabled for the application and for the devices on which the application is installed. See Enabling and configuring metering for devices and applications. |
| **Not Used Last 90 Days**<br>**Not Used Last 60 Days**<br>**Not Used Last 30 Days** | The number of application installations that have not been launched in the previous 90, 60, or 30 days. A dash in this column indicates that metering is not enabled for the application.<br>**NOTE:** To obtain accurate usage information, metering must be enabled for the application and for the devices on which the application is installed. See Enabling and configuring metering for devices and applications. |
| **Coverage** | The license type. License types include:<br>• **Upgrade**: The installed application has been upgraded from an earlier version (requires a maintenance agreement).<br>• **Downgrade**: The installed application is using a license for a later version (requires downgrade rights).<br>• **Original**: The installed application is using a license that matches its version number.<br>• **None**: The application is installed without a license. |
| **Platform** | The operating system on which the application runs. |
| **Edition** | The name of the edition related to the application, such as Professional Edition or Standard Edition. |

3. To sort the list, click **View By**, then select a view.

**You can view applications by Product, such as Microsoft Office, or by Product and Edition, such as Microsoft Office Professional and Office Standard. For example, if you wanted to see all editions of**

**Microsoft Office applications under one heading, you could select Product in the *View By* drop-down list. The *Licensed* column shows the number of seats available to all applications in the Microsoft Office group. To show Microsoft Office applications by edition, select Product and Edition in the *View By* drop-down list. The *Licensed* column shows the number of seats available to each edition of Microsoft Office.**

**TIP:** When a group, such as Office, is collapsed to show only the top-level item, a warning icon is displayed to the left of the *Name* column if any item in the group has a negative variance or is using more seats than the license allows: ⚠.

4. To view the License Compliance widget, click **Home** on the left navigation bar to go to the Admin-level *Dashboard* page.

   **TIP:** If the License Compliance widget is not visible, click **Customize** in the upper right to install it. See Customize Dashboard pages.

5. To view or change information about the number of seats available under a license, go to the detail page for the *License* asset. See View assets and search for asset information.

# Reclaim unused software licenses

Appliance administrators can set a policy that allows cataloged software to be uninstalled based on how frequently specific software applications are used on user devices in order to acquire underutilized software and re-use it where needed.

You have an option to reclaim licenses for a specific software application that is not used in the last 30, 60, or 90 days, or all associated licenses.

1. Navigate to the *License Compliance* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Asset Management**, then click **License Compliance**.
2. In the **Name** column, expand the name of the application, and select a version of the software license that you want to reclaim, as required.

   **NOTE:** You can only reclaim licenses for a single software version at a time. Selecting multiple versions results in an error.

3. To reclaim licenses for the software version, choose **Choose Action > Reclaim Sofware**, and select one of the following options, as required:

   - **Not Used Last 30 Days**
   - **Not Used Last 60 Days**
   - **Not Used Last 90 Days**
   - **All**

   **The *Managed Installation Detail* page appears, allowing you to create a process that removes the installation of the selected software item from the associated end user devices .**

4. Create a new Managed Installation, as required. For more information, see the following sections, as applicable:
   - Create Managed Installations for Windows devices
   - Create Managed Installations for Mac OS X devices
   - Create Managed Installations for RPM files

# Update software License Compliance information manually

You can manually update software License Compliance information any time. If you have a large number of applications, however, the process of updating the information might take several minutes.

The Agent-managed devices in your inventory have software applications that are available in the Software Catalog.

Software License Compliance information is updated automatically every day after the appliance daily backup process runs. Manually updating License Compliance information enables you to get the latest information available.

**NOTE:** If you have not added License assets for applications in inventory, the *License Compliance* page shows the number of seats available to applications as 0, and the variance is the number of software installations.

1. Go to the *License Compliance* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Asset Management**, then click **License Compliance**.
2. Click **Update Now** above the list.

    **The appliance checks for the latest license usage information and the list is updated.**

**TIP:** Clicking the **Refresh** button above the list on the right simply redisplays the information already collected. It does not obtain new license usage information.

# Customize license usage warning thresholds

You can customize license usage warning thresholds to specify the license usage percentage that is considered to be at warning or critical levels.

License compliance information appears on the appliance Dashboard. If the Organization component is enabled on your appliance, you customize license usage warning thresholds for each organization separately.

1. Go to Admin-level *General Settings* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Settings**, then click **Control Panel**.
    c. On the *Control Panel*, click **General Settings**.
2. Scroll down to the *License Usage Warning Configurations* section.
3. In the *Warning Threshold* and *Critical Threshold* fields, enter new values.

    **The default** *Warning Threshold* **is 90. The default** *Critical Threshold* **is 100.**

4. To save, click **Save and Restart Services**.

    **Threshold limits are set. If you have created License assets, License Compliance information appears on the** *Dashboard* **page of the Administrator Console.**

**Related topics**

Add License assets for Software page inventory

View License Compliance and Configuration information

# View License Compliance and Configuration information

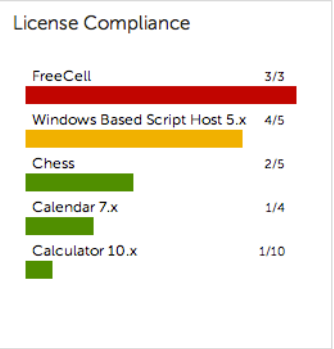
If you have set up License assets for applications, you can view License Compliance and Configuration information for those applications.

Information is available for License assets associated with applications listed under the *Software* tab and applications listed under the *Software Catalog* tab. See Setting up License Compliance.

If you have multiple organizations, you view license information for each organization separately.

1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
2. Click **Home**.

   **Software compliance information appears in the** *License Compliance* **widget.**

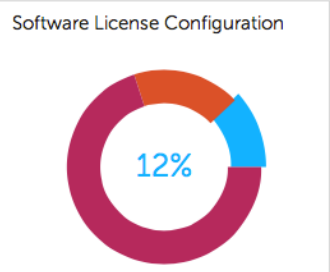



**NOTE:** The appliance updates the data in the *License Compliance* widget every eight hours. Clicking the **Refresh** button, however, does not update the data; it simply redisplays the data that has already been collected.

The following colors indicate the usage level:

| Color | Description |
|---|---|
| **Red** | Usage is at or above the critical threshold setting. |
| **Orange** | Usage is at or above the warning threshold setting but below the critical threshold setting. |
| **Green** | Usage is below the warning threshold setting. |

The *Software License Configuration* widget displays the percentage of software licenses that are categorized as unit licenses, site licenses, and other license modes.




Optional: View additional information on the *License Compliance* page. See View License Compliance information for Software Catalog applications.

# Setting up Service Desk

Setting up Service Desk entails setting up roles for Service Desk staff, and configuring ticket and email settings.

# Setting up roles for user accounts

Service Desk uses permission-based roles to control access to Service Desk features and information. These roles can be assigned to users automatically when they log in. You can use the default roles, or create roles as needed.

## About default roles

Default roles are available for standard user account types such as administrator, end-user, and limited-access.

The following roles are available by default. For more information about managing Organizational roles, see Managing Organization Roles and User Roles.

| Role | Description |
|---|---|
| **Organization Roles** | Organization Roles are supersets of permissions that are assigned to organizations, and they define the permissions that are available to organization users. For example, if an organization is assigned an Organization Role that has the *Distribution* tab hidden, users in that organization, including the Admin user, cannot access the *Distribution* tab.<br>**NOTE:** Organization Roles are available only on appliances with the Organization component enabled. |
| **Default Role** | The Default Role in the Organization Roles section has Write and Read permission for all tabs. You can create additional Organization Roles, but you cannot edit or delete the Default Role. |
| **User Roles** | Roles assigned to users to control their access to the Administrator Console and User Console. If the Organization component is enabled on your appliance, the permissions available to these roles depends on the Organization Role assigned to the organization. |
| **Administrator** | The most powerful user role on the appliance. By default, users with the **Administrator** role have permission to see or change information and settings. This includes promoting or demoting other users by changing their roles. The |

| Role | Description |
|---|---|
| | **Administrator** role cannot be altered or deleted. Assign this role only to trusted administrators.<br>Staff members assigned the **Administrator** role have permission to manage and modify Service Desk tickets from the *Tickets* tab in the Administrator Console, though they might not be able to own tickets themselves.<br>Users with the **Administrator** role can also use the security, scripting, and distribution features to resolve Service Desk tickets, then document the issues in the Knowledge Base.<br>The **Administrator** role primarily interacts with the appliance through the Administrator Console. |
| **No Access** | Users with this role cannot log on to the Administrator Console or User Console. |
| **Read Only Administrator** | This role has the ability to view but not change any information or settings in the appliance. This role is useful for oversight personnel, such as supervisors.<br>This role primarily interacts with the appliance through the Administrator Console. |
| **User Console Only** | This role is for appliance users. By default, this role has permission to create, view, and modify Service Desk tickets.<br>This role interacts with the appliance exclusively through the User Console. |

# Create a Service Desk staff role

You can create a Service Desk staff role to establish permissions for users who work on Service Desk settings and components.

By default, users with the **Administrator** role have permission to change all Service Desk components, including creating and removing users. In addition, you can create a more limited Service Desk role for your organization. Users with this role have permission to work on tickets, add items that can be downloaded from the User Console, add articles to the Knowledge Base, and manage announcements that appear on the User Console home page. However, they do not manage users, run reports, or change appliance settings. This guide refers to this group as **Service Desk Admin**.

If the Organization component is enabled on your appliance, you can create separate Service Desk Admin roles for each organization.

1. Go to the *Role Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Settings**, then click **Roles**.
    c. Select **Choose Action** > **New**.
2. In the *Name* field, provide name, such as Service Desk Admin.
3. In the *Description* field, provide a brief description of the role, such as Used for Service Desk Administrators.

    **This appears on the *Roles* list.**
4. Click the **[Expand All]** link next to Administrator Console *Permissions* to display the permissions settings for all categories.
5. Select these custom permissions for the new role:

| Category | Item | Permission level |
|---|---|---|
| **Home** | **All** | All Read |
| **Inventory** | **Devices** | WRITE |
| | **Software** | WRITE |
| | **Software Catalog** | WRITE |
| | **License Compliance** | HIDE |
| | **Processes** | HIDE |
| | **Startup Programs** | HIDE |
| | **Services** | HIDE |
| | **Discovery Schedules** | HIDE |
| | **Discovery Results** | HIDE |
| | **SNMP Inventory Configurations** | HIDE |
| **Monitoring** | **Devices** | READ |
| | **Alerts** | WRITE |
| | **Profiles** | HIDE |
| | **Maintenance Windows** | HIDE |
| | **Log Enablement Packages** | HIDE |
| **Assets** | **All** | HIDE |
| **Distribution** | **All** | HIDE |
| **Scripting** | **All** | HIDE |
| **Security** | **All** | HIDE |
| **Service Desk** | **Tickets** | WRITE |
| | **User Downloads** | WRITE |
| | **Knowledge Base** | WRITE |
| | **Announcements** | WRITE |

| Category | Item | Permission level |
|---|---|---|
| | **Archive** | READ |
| | **Configuration** | READ |
| **Reporting** | **All** | All Hide |
| **Settings** | **All** | All Hide |
| User Console | **All** | All Read |

6. Click **Save**.

The *Roles* page shows the new role. When a user who is assigned to this role logs in, the appliance component bar shows the available features.

# Assign user roles

After you import or create user accounts, you can assign user roles to those accounts.

**NOTE:** User accounts can be imported from an LDAP server. See Importing users from an LDAP server.

1. Go to the *Users* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **Users**.
2. Assign the **Administrator** role to your Service Desk administrators:
   a. Select the check box next to one or more users.
   b. Select **Choose Action** > **Apply Role** > **Administrator**.

   **By default, Administrator users have owner/submitter permissions.**
3. Assign the **Service Desk Staff** role to your team users:
   a. Select the check box next to one or more users.
   b. Select **Choose Action** > **Apply Role** > **Service Desk Staff**.
4. Assign the **All Ticket Owners** label to your Service Desk team members:
   a. Select the check box next to one or more users.
   b. Select **Choose Action** > **Apply Label** > **All Ticket Owners**.

   **The label is applied, and it appears next to the username.**
5. Create a label named **User**, then apply the **User** label and role to users.

**Related topics**

Define custom ticket fields

Create a Service Desk staff role

Add an All Ticket Owners label

# Apply labels and roles to Service Desk staff

You can apply labels and roles to Service Desk staff members to manage their permissions.

For instructions on creating labels and roles, see Setting up roles for user accounts and Setting up labels for user accounts.

1. Add a user to the **DefaultTicketOwners@mydomain.com** alias.
2. Go to the *User Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Settings**, then click **Users**.
    c. Display the *User Detail* page by doing one of the following:
    - Click the name of a user.
    - Select **Choose Action** > **New**.
3. In the *Assign To Label* field, click **Edit**.
4. In the label window, drag the **All Ticket Owners** label to the *Assign To* field, then click **Save**.

    **NOTE:** If the label does not exist, you need to create it.
5. In the *Role* field, select the **Service Desk Staff** role.
6. Click **Save**.

The user has permission to own, modify, fix, and close tickets. The user automatically receives email when a ticket is created.

**Related topics**

Add an All Ticket Owners label

Create a Service Desk staff role

# Create the DefaultTicketOwners account

If you want your Service Desk staff to receive email notifications when new tickets are created, you can create a DefaultTicketOwners user account.

You can then configure the *Ticket Detail* page to use that account as described in Configuring ticket settings.

To learn about email notifications, see About email notifications.

1. Go to the *User Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Settings**, then click **Users**.
    c. Select **Choose Action** > **New**.
2. At minimum, provide the following details:

| Field | Description |
|---|---|
| **Login** | DefaultTicketOwners |
| **Name** | DefaultTicketOwners |
| **Email** | DefaultTicketOwners@**mydomain.com** |

| Field | Description |
|---|---|
| **Password** | Enter a password |
| **Confirm Password** | Enter the password again |
| **Role** | No Access |
| **Assign to Label** | All Ticket Owners |

3. Click **Save**.
4. To assign this new user as the default ticket owner, choose the **DefaultTicketOwners** as described in Configuring ticket settings.

**NOTE:** The first default owner always remains the default owner of a ticket. For example, if you move an existing ticket to another category with a different default owner, the default owner of the ticket does not change.

# Configuring email settings

You can set up an email notification strategy for a queue. If you have multiple queues, you can configure email settings for each queue separately.

An email notification strategy is described in the System requirements.

By default, Service Desk automatically sends an email to alert your staff if a ticket remains in a particular state too long. In addition, a ticket with a priority of **High** is escalated if it is not modified or closed within 30 minutes. To change the escalation times and the list of tickets to which they apply, see Customize the Ticket Detail page.

In general, the appliance should never be configured to email itself. For example, if a queue's email address is `helpdesk@example.com`, the `helpdesk@example.com` email address should not be a valid selection for the *Category CC* list or any of the settings where email addresses can be specified.

The following email notification strategy is used by most Quest KACE customers to prevent their staff from being inundated with unnecessary notifications:

- When a ticket is created, all Service Desk staff receive email notification. To learn about email notification caveats, see About email notifications.
- After a Service Desk staff member takes ownership of a ticket, the remaining staff does not receive email about the ticket unless it is escalated, although they can search for it.
- The ticket submitter and owner are notified by email each time their ticket's *State* or *Status* changes.
- The ticket owner is notified of any changes to the ticket.
- If a ticket is escalated, the ticket owner, and anyone else in the *Category CC* list, is notified.

## About email notifications

When Service Desk tickets are created or changed, the appliance sends email notifications based on the ticket submission method, Email on Events settings, and actions taken.

The following rules are applied to email notifications:

- When tickets are submitted or modified through the Administrator Console or User Console, the ticket submitter does not receive an email confirmation, unless *New Ticket Via Portal*l is selected for the *Submitter* in the *Email on Events* section on the *Service Desk Queue Email Settings* page (for more information about queue-specific email settings, see Configure email triggers). Other users associated with the ticket, such as the **Owner**, **Approver**, **CC List**, and **Category CC**, receive email notifications as

specified in the *Email on Events* section of the *Queue Detail* page. See Configuring email triggers and email templates for complete details.

- When tickets are created through email, the ticket submitter receives an email confirmation. However, when a ticket is modified by email, the submitter does not receive a confirmation.
- Change notification email messages are intentionally delayed when tickets are changed. This delay is designed to reduce the number of email notifications sent when changes are made. For example, a ticket owner might add a comment and save the ticket, then make a second, immediate change to the ticket. Only one change notification is sent.

  **NOTE:** Email messages are prepended with: +++++ Please reply above this line to add a comment ++++.
- When managed devices or user accounts are deleted from inventory, email notifications for any Service Desk tickets related to those devices are suppressed to avoid unnecessary notifications.

# About Ticket Rules

If the standard email behavior does not meet your needs, you can use Ticket Rules to change the behavior.

For more information about Ticket Rules, see Using Ticket Rules.

Many of the more complex Ticket Rules, such as modifying the behavior of email notifications, are published on the Quest Support site, https://support.quest.com/contact-support.

# About POP3 email accounts

You can configure the appliance to receive email from POP3 servers.

To do so, you need to:

- Enable and configure an external SMTP server in the appliance network settings. See Use an external SMTP server or Secure SMTP server.
- **Optional**. Configure Service Desk email preferences. See Configure email preferences.
- Configure SMTP server and POP3 settings in Service Desk ticket queues. See Configure queue-specific email settings.

If you do not use a POP3 email server, you can use the KACE SMA's built-in SMTP server to accept incoming email messages from your internal email server.

**IMPORTANT: The appliance POP3 email server must pass authentication information and the email text itself as clear text.**

# Create and configure POP3 email accounts

You can create and configure POP3 email accounts for use by the Service Desk users and staff.

The two accounts are:

- **Support@mydomain.com**. This email address is used to:
  - Receive all new tickets when they are created.
  - Allow users and Service Desk staff to automatically create and modify tickets.
  - Serve as the email address to which your users can reply.

The email delivered to this address is not read, but Service Desk staff is notified of the ticket changes resulting from the email.

- **DefaultTicketOwners@mydomain.com**. This email alias is used to:
  - Allow Service Desk staff to communicate with each other.
  - Allow the appliance to send automated email notification about new and open tickets.

1. Create Support@**mydomain**.com as a valid email address on your POP3 email server.
2. Configure DefaultTicketOwners@**mydomain**.com as the Service Desk staff email alias, and add all of your Service Desk staff email addresses to it. This is the general-purpose email alias that your Service Desk staff uses to communicate with each other.
3. If you want to use an external SMTP server used by the appliance, configure it on the *Network Settings* page in the System Administration Console. See Change appliance network settings.

   **TIP:** If you want to use POP3 for Service Desk ticket emails, you can configure the POP3 settings on the queue level.

4. **Optional**. Configure Service Desk email preferences. See Configure email preferences.
5. If you want to use different SMTP or POP3 settings for each queue, you can specify them on the queue level. See Configure queue-specific email settings.

# Configure email preferences

You can create and configure preferences for the email sent to and from the Service Desk users and staff.

By default, the Service Desk is configured to use an internal SMTP server for sending ticket-related emails. You have an option to use an external SMTP server, however, you must configure it in the appliance network settings. For more information, see Change appliance network settings.

1. Go to the *Service Desk Email Preferences* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
   c. On the **Configuration** panel, in the *Email Configuration* section, click **Configure Service Desk Email Preferences**.
2. On the *Service Desk Email Preferences* page that appears, in the *Outbound Email* section, select the *Include "Reply above this line" text on outbound email communications* check box.

   **It is recommended to use this feature to prevent the entire email chain from being added to each comment.**

3. Specify the text that you want to detect in the email subject. When the Service Desk receives a ticket-related email with the specified subject, it will stop processing that email.
   a. In the *Inbound Email* section, in the *Ignore emails with following text in the subject* field, type the words that you want to detect. You can specify multiple entries, using a semi-colon as a separator. For example: Out of Office;Mail Delivery Failure.
4. Configure the thresholds for all inbound email notifications during a specific period. When these levels are reached, the Service Desk will stop sending email notifications.

   **NOTE:** When the overall threshold is reached, notifications will pause for all tickets. If a per-ticket threshold is reached, notifications will be paused only for the affected ticket. When the number of email updates in the given period becomes lower than the configured threshold, the notifications will resume.

| Option | Description |
|---|---|
| **Total Emails** | The maximum number of all emails the Service Desk receives and responds with email notifications. The default value is 100 emails. |
| **Received within the interval of x minutes** | The time interval in minutes during which the specified number of emails are received. The default value is one minute.<br>To disable this restriction, you can set to a high number such as 99999. |

5. Configure the thresholds for inbound email notifications per ticket, during a specific period. When these levels are reached, the Service Desk will stop sending email notifications.

| Option | Description |
|---|---|
| **Total Emails per Ticket** | The maximum number of all emails the Service Desk receives for each ticket, and responds with email notifications. The default value is 5 emails per ticket. |
| **Received within the interval of x minutes** | Specify the time interval in minutes during which the specified number of emails for each ticket are received. The default value is one minute. To disable this restriction, set this option to a high number such as 99999. |

6. Click **Save**.

Next, you can configure POP3 email accounts for specific Service Desk queues. For more information, see Configure queue-specific email settings.

# Configuring email triggers and email templates

You can set up triggers that automatically send email from the appliance and use templates to set the content of those email messages.

The *Email on Events* section determines which actions trigger an email to the various appliance users. Email templates determine the content of the messages.

### Timing of email messages

The following email events trigger the appliance to send email immediately:

- **Comment**: The system sends email notifications for comments when users add comments and click **Submit** on the ticket form. When users add comments and click **Save** on the ticket form, however, only the *Any Change* notification is sent.
- **Ticket Closed**: If the Satisfaction Survey is enabled, an email that describes the Satisfaction Survey is sent immediately when tickets are closed.

The following email events trigger the appliance to send email every few minutes to prevent email overload:

- Any Change
- Owner Change
- Status Change
- Approval Change
- Resolution Change
- Escalation
- SLA Violation
- New Ticket Via Email

## Configure email triggers

You can configure email triggers for a queue. If you have multiple queues, you can configure the email triggers for each queue separately.

1. Go to the Service Desk *Queue Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
    c. On the **Configuration** panel, click **Queues**.
    d. Display the *Queue Detail* page by doing one of the following:
    - Click the name of a queue.
    - Select **Choose Action** > **New**.
2. On the *Queue Detail* page, under *Email Address*, click **Configure Queue Email Settings** link to display the *Service Desk Queue Email Settings* page.
3. On the *Service Desk Queue Email Settings* page, in the *Email on Events* section, select the options for sending email when the specified events occur. Each column represents a type of Service Desk user (role) and each row represents a ticket event.

| Service Desk user (role) | Description |
|---|---|
| **Owner** | The person who is expected to resolve the ticket. |
| **Submitter** | The person whose issue is being resolved. |
| **Approver** | The person who can approve or reject the ticket for processing. |
| **Ticket CC** | One or more email addresses that are stored in the *CC* field of the ticket. |
| **Category CC** | One or more email addresses that are stored in the *CC List* of the *Category Value* of the ticket. See Configure CC lists for ticket categories. |
| **Queue Owners** | One or more owners of the ticket queue, as specified by the *Owner* label. This only applies to the *New Ticket Via Email* and *New Ticket via Portal* events. |

When a ticket event occurs, email is sent to the selected roles or users. For example, if you select the **Any Change** box in the *Owner* column, email is sent to the ticket owner whenever the ticket is changed. For the *Comment* and *Ticket Closed* triggers, email is sent immediately. For other ticket changes, however, email is sent every few minutes to prevent email overload.

**NOTE:** If users have the KACE GO mobile app installed on their smart phone or tablet, the system sends push notifications for the selected Service Desk ticket events.

| Option | Description |
|---|---|
| **Any Change** | Any information on the ticket is changed. |
| **Owner Change** | The ticket's *Owner* field is changed. |

| Option | Description |
|---|---|
| **Status Change** | The ticket's *Status* field is changed. |
| **Comment** | Information, attachments, or screen shots are added to the ticket's *Comments* section. The system sends email notifications for comments when users add comments and click **Submit** on the ticket form. When users add comments and click **Save** on the ticket form, however, only the *Any Change* notification is sent. |
| **Approval Change** | The ticket's approval status has changed. |
| **Resolution Change** | The ticket's resolution has changed. |
| **Escalation** | The ticket has not been updated to a stalled or closed status within the escalation time defined by the ticket priority. |
| **SLA Violation** | The ticket has not been resolved by its due date. |
| **Ticket Closed** | The ticket's *Status* field is changed to **Closed**. This event is used to present a Satisfaction Survey to submitters. See Using the Satisfaction Survey. |
| **New Ticket Via Email** | A user sends an email message to the Service Desk and a ticket is created. |
| **New Ticket Via Portal** | A ticket is created through the User Console. |

4. Click **Save**.

**Related topics**

Configuring Mobile Device Access

## *Configure email templates*

You can configure the email templates that Service Desk uses to generate email messages for a queue. If you have multiple queues, you customize the email templates for each queue separately.

1. Go to the Service Desk *Queue Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
    c. On the **Configuration** panel, click **Queues**.

d. Display the *Queue Detail* page by doing one of the following:

- Click the name of a queue.
- Select **Choose Action > New**.

2. On the *Queue Detail* page, under *Email Address*, click **Configure Queue Email Settings** link to display the *Service Desk Queue Email Settings* page.
3. On the *Service Desk Queue Email Settings* page, complete one of the following steps.
   - **To edit all email templates, click Customize All Emails.**
   - **To edit a specific email template, in the *Events* area, in the row containing the email template you want to edit, in the *Customize Email* column, click .**
4. On the page that appears, change one or more of the selected email templates, as required.

**NOTE:** If the default text for any of the templates is changed, the email messages will not be translated into different languages.

The following email template are available:

| Ticket-related template | Description | Default recipients |
|---|---|---|
| **Ticket Escalated** | Used to send periodic notifications according to the Escalation Time configured for the ticket priority in the queue. For example, if tickets with the priority of **High** have an Escalation Time of 30 minutes, this email is sent every 30 minutes for High priority tickets until the ticket priority changes or until the ticket is closed. | Owners, the ticket CC list, and ticket Category CC list |
| **Ticket Created from Email** | Used to acknowledge that a ticket has been created through email. | Owners, Submitters |
| **Ticket Created from Portal** | Used to acknowledge that a ticket has been created through the User Portal. | Owners, submitters |
| **Ticket Modified** | Used to notify recipients when ticket information is changed or added. | Owners and the ticket CC list |
| **Comment Submitted** | Used to notify recipients that comments are added to tickets. | Owners, submitters, approvers, the ticket CC list, and the ticket Category CC list |
| **Ticket Closed** | Used to present a Satisfaction Survey to submitters when tickets are closed. See Using the Satisfaction Survey. | Submitters |
| **Email Ticket Manually** | Used to for messages that are forwarded using the *Email Ticket* action on *Ticket Detail* pages.<br>**TIP:** If you use HTML/Markdown, the $ticket_fields_visible token must be enclosed in the `<pre>` tag to prevent formatting, such as line breaks, from being discarded. For example:<br>`<pre>$ticket_fields_visible</pre>` | Manually entered by the sender |

| Ticket-related template | Description | Default recipients |
|---|---|---|
| **SLA Violated** | Used to notify recipients that a ticket has remained open past the due date calculated using the SLA (Service Level Agreement) settings and the ticket priority. | None. Configurable on the *Queue Detail* page |

| Error-related template | Description | Recipients |
|---|---|---|
| **Error Creating Ticket from Email** | Used to notify senders that the ticket could not be created for reasons other than **unknown email address**. | Submitters |
| **Unknown Email Address Response** | Used to notify senders that the ticket could not be created because the submitter's email address is unknown. | Submitters |

**Table 6. Tokens used in all email templates**

| Token | Description |
|---|---|
| $helpdesk_email | The email address associated with the Service Desk queue. This address is configured on the *Queue Detail* page. |
| $helpdesk_name | The name of the Service Desk queue. This name is configured on the Queue Detail page. |
| $userui_url | A link to the User Console. Access to the User Console requires login credentials. |

**Table 7. Tokens used in ticket-related email templates**

| Token | Description |
|---|---|
| $change_desc | A formatted representation of the changes that were made the last time the ticket was saved, including both field changes and comments. |
| $last_attachment | The most recent attachment added to the ticket. |
| $last_comment | The most recent comment added to the ticket. |
| $mobile_ticket_url | A link to the ticket KACE GO mobile app. When displayed in an email on an Android or iOS mobile device, this links opens the associated ticket in the KACE GO mobile app. |
| $process_description | The process description. It can include important pre-requisites that the users need to complete before proceeding to create a ticket based on a process template. |
| $process_name | The name of the process template. |
| $process_status | The status of the process template such as Approval Required, Approval Timed Out, Approval Received, Approval Rejected, Process Cancelled, and Process Complete. |

| Token | Description |
|---|---|
| $process_type | The type of the process. In a default installation, only the *Service Desk* process type is included. You can create new process types, as required. For example, you can create a process type for accessing a specific application, or a group of applications. For more information, see Define process types. |
| $summary | The current summary of the ticket. |
| $ticket_approver_email | The email address of the ticket approver. Having this address is especially useful for *Comments* email notifications. |
| $ticket_approver_name | The name of the ticket approver.<br>**NOTE:** The approver name and contact information is derived from the USER record associated with the fields on the ticket. |
| $ticket_approver_phone_home | Contact information for the ticket approver. |
| $ticket_approver_phone_mobile | Contact information for the ticket approver. |
| $ticket_approver_phone_pager | Contact information for the ticket approver. |
| $ticket_approver_phone_work | Contact information for the ticket approver. |
| $ticket_custom_X_label<br>$ticket_custom_X_value | The label and value used for a custom field, where **X** represents the index number of the custom field.<br>For example, if a queue has a ticket field labeled, *CUSTOM_5*, and that field is configured with the label *Location Name*, the system replaces `$ticket_custom_5_label` with the text, `Location Name`. The token, `$ticket_custom_5_value` is replaced with the ticket value that was saved for the *Location Name* field, such as, *Topeka* or *Albuquerque*.<br>By default, all ticket queues are configured with 15 custom fields, but this number can be increased as needed.<br>**NOTE:** Each queue can have different custom fields and different email template configurations. |
| $ticket_due_date | The due date as saved on the ticket. Administrators can override automatic due dates with manual due dates if necessary. |
| $ticket_escalation_minutes | The time, in minutes, between periodic notifications. This time is determined by the Escalation Time configured for the ticket priority in the queue. For example, if tickets with the priority of **High** have an Escalation Time of 30 minutes, this email is sent every 30 minutes for High priority tickets until the ticket priority changes or until the ticket is closed. This token is typically used in the Ticket Escalated email template, to inform recipients of the frequency of email notifications. |
| $ticket_fields_visible | Include all the ticket fields that are visible for the user who is forwarding the ticket by email. |

| Token | Description |
|---|---|
| | **TIP:** If you use HTML/Markdown, the $ticket_fields_visible token must be enclosed in the `<pre>` tag to prevent formatting, such as line breaks, from being discarded. For example:<br>`<pre>$ticket_fields_visible</pre>` |
| $ticket_history | The complete history of the ticket.<br>**NOTE:** For some tickets, the history information can become very detailed and too large to send through email. If the complete history is not needed, use `$ticket_history_X` to limit the number of records to include. |
| $ticket_history_X | A specified number of records in the ticket history. `X` indicates the number of records to include, beginning with the most recent. |
| $ticket_id | A unique identifier assigned to the ticket, also called the ticket number. Using this identifier is the primary method for users to identify tickets. |
| $ticket_number | A formatted version of the ticket ID. This version begins with `TICK` followed by a minimum of five digits. For example, a ticket with ID `4321` is displayed as `TICK:04321`. This format is especially useful in email Subject lines to make sure that email replies link to the correct tickets. |
| $ticket_owner_email | The email address of the Service Desk administrator assigned to the ticket. |
| $ticket_owner_name | The name of the Service Desk administrator assigned to the ticket.<br>**NOTE:** The owner name and contact information is derived from the USER record associated with the fields on the ticket. |
| $ticket_owner_phone_home | Contact information for the Service Desk administrator assigned to the ticket. |
| $ticket_owner_phone_mobile | Contact information for the Service Desk administrator assigned to the ticket. |
| $ticket_owner_phone_pager | Contact information for the Service Desk administrator assigned to the ticket. |
| $ticket_owner_phone_work | Contact information for the Service Desk administrator assigned to the ticket. |
| $ticket_priority | The priority assigned to the ticket. Default values include High, Medium, and Low. |
| $ticket_resolution | Information about what was done to resolve the ticket as described in the ticket's *Resolution* field. |

| Token | Description |
|---|---|
| $ticket_status | The status of the ticket. Defaults include New, Opened, Closed, Need More Info, Reopened, Waiting Overdue, Waiting on Customer, and Waiting on Third Party. |
| $ticket_submitter_email | The email address of the submitter. |
| $ticket_submitter_name | The name of the submitter.<br>**NOTE:** The submitter name and contact information is derived from the USER record associated with the fields on the ticket. |
| $ticket_submitter_phone_home | Contact information for the submitter. |
| $ticket_submitter_phone_mobile | Contact information for the submitter. |
| $ticket_submitter_phone_pager | Contact information for the submitter. |
| $ticket_submitter_phone_work | Contact information for the submitter. |
| $ticket_title | The title of the ticket as it appears on the *Ticket Detail* page. |
| $ticket_url | A link to the ticket in the User Console. Access to the User Console requires login credentials. |
| $ticket_http_url | A link to the ticket in the User Console. This format is used for backward compatibility on older systems. Access to the User Console requires login credentials. |
| $ticket_https_url | A secure link to the ticket in the User Console. Use this token if SSL is enabled on your appliance. This ensures that links sent through email work correctly. |
| $userui_url | A link to the home page of the User Console. Access to the User Console requires login credentials. |

**Table 8. Tokens used in merged ticket email templates**

| Token | Description |
|---|---|
| $ticket_merged_number | The number of the merged ticket. |
| $ticket_merged_title | The title of the merged ticket as it appears on the *Ticket Detail* page. |
| $ticket_merged_changer_name | The name of the user who merged the tickets. |
| $ticket_merged_url | A link to the merged ticket in the User Console. Access to the User Console requires login credentials. |

**Table 9. Tokens used in error-related email templates**

| Token | Description |
|---|---|
| $error_text | Used to identify a problem processing the submitted tokens. This error appears when:<br>• The system does not recognize a variable<br>• A variable is recognized, but the user does not have permission to change the field<br>• The variable attempts to change the approval status of the ticket but the user is not the approver |
| $quoted_mail | The content of the original email message. |
| $subject | The subject of the original email message. |

**NOTE:** Tokens that are invalid are ignored and they are not replaced in email messages. For example, if you add an unknown token such as `$today`, it is ignored, and it appears in the email message as `$today`.

5. **Optional**: For each email template, create HTML-based content instead of using plain text.
   a. Select **Send as HTML** to use a HTML-based email instead of plain text.

      **An HTML editor appears, with a full range of text editing options for formatting your content, such as buttons for bold text, hyperlinks, lists, or text color.**

   b. Use the controls in the editor to format the template content. For example:

   - To apply bold text to a text string, select it in the editor, and click B.
   - To add images, click , and provide the URL to the image file, a local file path, or simply drop the image into the indicated area.
     - You can also copy and paste screen shots directly into the text field.
     - Any images you include this way are added as file attachments to the ticket. They are also included in email communication, as applicable.
     - Deleting an image from the text field does not remove the associated file attachment. You can manage file attachments in the *Attachments* section of the ticket page. For more information, see Add or delete screen shots and attachments from Service Desk tickets.
   - To add external links, click .
   - To embed externally hosted videos, click .

   c. To quickly add a token, click $, and from the list that appears, select the applicable token.

      **See step 4 for more information about each token.**

6. For each template, indicate how you want to handle email file attachments.
   - To allow Service Desk to send file attachments, select **Include attachments**. Then, indicate which attachments you want to send:
     - **Most recent change (if applicable)**: Include only the file attachments that are added with the most recent ticket update.
     - **Last uploaded**: Include the last uploaded file attachments.
     - **All**: Include all file attachments.
   - **To prevent Service Desk from sending file attachments with ticket-related email, clear the Include attachments check box.**
7. Click **Save**.

For instructions on how to configure the appliance to use SMTP email, see Configuring SMTP email servers.

# Configure CC lists for ticket categories

You can automatically notify users, or groups of users, when tickets are filed in specified categories, such as hardware, software, or networking. To do this, add email addresses to the *CC List* value of each ticket category.

Configuring the *CC List* values of ticket categories is useful if you want to notify users, or groups of users, when tickets are filed in categories that interest them. For example, you could add all of your system administrators to the *CC List* of the Network category to ensure that they are notified of networking issues as they arise.

If you have multiple queues, you configure the ticket category *CC List* values for each queue separately.

1. Go to the Service Desk *Queue Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
    c. On the **Configuration** panel, click **Queues**.
    d. Display the *Queue Detail* page by doing one of the following:
    - Click the name of a queue.
    - Select **Choose Action** > **New**.
2. In the *Email on Events* section, select all of the check boxes under the *Category CC* column. See Configure email triggers.
3. Click **Save**.
4. In the *Ticket Defaults* section, click **Customize These Values**.
5. In the *Category Values* section, add email addresses to the *CC List* entries:
    a. Click the **Edit** button in a category row:  .
    b. In the *CC List* field, enter a default email address for the category. Use commas to separate email addresses. To enter multiple email addresses, consider using a distribution list.
    c. Click **Save** at the end of the row.
    d. Repeat this process to add *CC List* entries for other categories.
6. Click **Save** at the bottom of the page.

Create a default email address for ticket owners. See Create the DefaultTicketOwners account.

# Automatically add email addresses to ticket CC List fields

You can enable Service Desk to automatically add email addresses to the *CC List* field of tickets whenever those addresses appear in the *To* and *Cc* fields of tickets submitted or updated through email.

When this setting is enabled, any email addresses in the *To* and *Cc* fields are automatically added to ticket *CC List* fields unless those addresses are specified in the *System Email Exclusion List*. See Exclude addresses from ticket CC List fields.

**NOTE:** If your Service Desk was created on an appliance running version 6.3 or earlier, this setting is disabled by default. If the Organization component is enabled on your system, and you create a new organization, however, the setting is enabled by default. The setting is also enabled on new KACE SMAs running version 6.4 or later.

1. Go to the Service Desk *Settings* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General

Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Service Desk**, then click **Configuration**.

c. On the *Configuration* panel, click **Settings**.

2. In the *Inbound Email* section, select the check box next to *Add email addresses from the CC List to ticket*.
3. Click **Save**.

Configure the email exclusion list to prevent Service Desk from automatically adding unwanted email addresses to ticket *CC List* fields. See Exclude addresses from ticket CC List fields.

# Exclude addresses from ticket CC List fields

Service Desk can automatically add email addresses to ticket *CC List* fields when tickets are submitted or updated through email. However, some addresses, such as distribution lists and general company email addresses, should not be added automatically because they increase unnecessary email traffic. To prevent Service Desk from adding unwanted email addresses, you can specify the email addresses you want to exclude.

The email exclusion list is an appliance-level setting. If the Organization component is enabled on your appliance, the email exclusion list is applied to all organizations and Service Desk queues.

**NOTE:** The email addresses associated with Service Desk queues are never automatically added to ticket *CC List* fields, because sending messages to these addresses could result in new tickets being opened inadvertently. You do not need to add these addresses to the exclusion list.

1. Go to the Service Desk *Settings* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
   c. On the *Configuration* panel, click **Settings**.
2. In the *Inbound Email* section, click **Define System Email Exclusion List** to display the *Define System Email Exclusion List page*.
3. To add an email address to the list, click add: +.
4. In the *Add Email* dialog, type an email address, then click **Save**.

   **The email address is added to the exclusion list.**

# Prevent email loops

When tickets are submitted or updated through email, Service Desk sends ticket notifications to respective parties. However, if one or more users who receive such email reply with an automated *Out of Office* response, Service Desk reacts with another ticket update and yet another email notification, potentially causing an infinite email loop.

You can prevent the Service Desk from processing an email when an Out of Office response is received. You also have an option to stop sending email notifications when a high number of incoming ticket-related emails is detected. Any emails that cause the Service Desk to stop sending email notifications are logged.

1. Go to the *Service Desk Email Preferences* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Configuration**.

c. On the **Configuration** panel, in the *Email Configuration* section, click **Configure Service Desk Email Preferences**.

2. Specify the text that you want to detect in the email subject. When the Service Desk receives a ticket-related email with the specified subject, it will stop processing that email.
   a. In the *Inbound Email* section, in the *Ignore emails with following text in the subject* field, type the words that you want to detect. You can specify multiple entries, using a semi-colon as a separator. For example: Out of Office;Mail Delivery Failure.
3. Configure the thresholds for all inbound email notifications during a specific period. When these levels are reached, the Service Desk will stop sending email notifications.

**NOTE:** When the overall threshold is reached, notifications will pause for all tickets. If a per-ticket threshold is reached, notifications will be paused only for the affected ticket. When the number of email updates in the given period becomes lower than the configured threshold, the notifications will resume.

| Option | Description |
|---|---|
| **Total Emails** | The maximum number of all emails the Service Desk receives and responds with email notifications. The default value is 100 emails. |
| **Received within the interval of x minutes** | The time interval in minutes during which the specified number of emails are received. The default value is one minute.<br>To disable this restriction, you can set to a high number such as 99999. |

4. Configure the thresholds for inbound email notifications per ticket, during a specific period. When these levels are reached, the Service Desk will stop sending email notifications.

| Option | Description |
|---|---|
| **Total Emails per Ticket** | The maximum number of all emails the Service Desk receives for each ticket, and responds with email notifications. The default value is 5 emails per ticket. |
| **Received within the interval of x minutes** | Specify the time interval in minutes during which the specified number of emails for each ticket are received. The default value is one minute. To disable this restriction, set this option to a high number such as 99999. |

5. Click **Save**.

# Configure the Cache Lifetime for Service Desk widgets

Service Desk widgets available on the *Dashboard* page provide insight into the overall activity of your Service Desk tickets. For example, you can view the number of active tickets sorted by their category or queue. For performance reasons, underlying data for the Service Desk widgets is cached locally for a fixed duration. The default minimum is 30 minutes. This can be increased as needed. You can force a data refresh for a specific widget by clicking the refresh icon in the widget.

For more information about *Dashboard* widgets, see About Dashboard widgets.

1. Go to the Service Desk *Settings* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
c. On the *Configuration* panel, click **Settings**.

2. Under *Service Desk Dashboard Widgets*, in the *Cache Lifetime field*, specify the length of time in minutes during which the data populating the Service Desk Dashboard widgets will be preserved in the database. The minimum is 30 minutes.
3. Click **Save**.

# Creating and managing organizations

If the **Organization** component is enabled on your appliance, you can create and manage separate organizations, with separate inventory and settings, to meet your business needs.

**TIP:** If the Organization component is enabled on your appliance, but you do not see the drop-down list in the top-right corner of the Administrator Console next to the login information, there are two possibilities: Either fast switching is not enabled, or your user role does not have permission to manage organizations.

**TIP:** See Enable fast switching for organizations and linked appliances.

# About organizations

Organizations are logical instances of an appliance that run on a single appliance. Each organization is supported by its own database, and you manage each organization's inventory and other components separately.

For example, in a school environment, you could create one organization for teachers and another organization for students. You could then automatically assign managed devices to each organization and manage them separately. Further, you could assign organization-specific roles to administrators and users to control their access to the appliance Administrator Console and User Console. Administrators in one organization would not need to view the devices and inventory items in the other organization. You can add up to 50 organizations on a single appliance.

For information about configuring general organization settings for the appliance, see Configure appliance General Settings with the Organization component enabled.

## About the Default organization

The organization named **Default** is the only organization that is available when you first set up the appliance. New devices that are not assigned to an organization by a filter are assigned to the Default organization.

You can rename the Default organization and edit its settings as needed. See Add or edit organizations.

# Tracking changes to organization settings

If History subscriptions are configured to retain information, you can view the details of the changes made to settings, assets, and objects.

This information includes the date the change was made and the user who made the change, which can be useful during troubleshooting. See About history settings.

# Managing Organization Roles and User Roles

If the Organization component is enabled on your appliance, there are two types of roles: Organization Roles, which are applied to organizations, and User Roles, which are applied to individual user accounts.

If the Organization component is enabled on your appliance, there are two types of roles: Organization Roles, which are applied to organizations, and User Roles, which are applied to individual user accounts.

This section describes the default Organization and User Roles, and explains how to manage Organization Roles. For information about managing User Roles, see About user accounts and user authentication.

# Available default roles

Default roles provide a variety of permission settings for organizations and users.

The following roles are available by default.

| Role | Description |
|---|---|
| **Organization Roles** | Organization Roles are supersets of permissions that are assigned to organizations, and they define the permissions that are available to organization users. For example, if an organization is assigned an Organization Role that has the *Distribution* tab hidden, users in that organization, including the Admin user, cannot access the *Distribution* tab.<br>**NOTE:** Organization Roles are available only on appliances with the Organization component enabled. |
| **Default Role** | The Default Role in the Organization Roles section has Write and Read permission for all tabs. You can create additional Organization Roles, but you cannot edit or delete the Default Role. |
| **User Roles** | Roles assigned to users to control their access to the Administrator Console and User Console. If the Organization component is enabled on your appliance, the permissions available to these roles depends on the Organization Role assigned to the organization. |
| **Administrator** | The most powerful user role on the appliance. By default, users with the **Administrator** role have permission to see or change information and settings. This includes promoting or demoting other users by changing their roles. The **Administrator** role cannot be altered or deleted. Assign this role only to trusted administrators.<br>Staff members assigned the **Administrator** role have permission to manage and modify Service Desk tickets from the *Tickets* tab in the Administrator Console, though they might not be able to own tickets themselves.<br>Users with the **Administrator** role can also use the security, scripting, and distribution features to resolve Service Desk tickets, then document the issues in the Knowledge Base.<br>The **Administrator** role primarily interacts with the appliance through the Administrator Console. |
| **No Access** | Users with this role cannot log on to the Administrator Console or User Console. |
| **Read Only Administrator** | This role has the ability to view but not change any information or settings in the appliance. This role is useful for oversight personnel, such as supervisors.<br>This role primarily interacts with the appliance through the Administrator Console. |
| User Console **Only** | This role is for appliance users. By default, this role has permission to create, view, and modify Service Desk tickets.<br>This role interacts with the appliance exclusively through the User Console. |

# Add or edit Organization Roles

You can add or edit Organization Roles as needed.

Before you create organizations, create the Organization Roles you want to assign to those organizations as described in this section. Organization Roles define the permissions that are available to organization users.

1. Go to the *Organization Role Detail* page:
    a. Log in to the appliance System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page.
    b. On the left navigation bar, click **Organizations**, then click **Roles**.
    c. Display the *Organization Role Detail* page by doing one of the following:
    - Click the name of a role.
    - Select **Choose Action** > **New**.

    **NOTE:** You cannot edit the Default Role.
2. Provide the following information:

| Option | Description |
|---|---|
| **Name** | (Required) Enter a name for the role. |
| **Description** | (Optional) Enter a description of the role. |

3. To assign Administrator Console permissions:
    - **In the Administrator Console** *Permissions* **section, click a component name to expand it, or click Expand All to expand all components.**
    - **To assign the same access level to all sections, select All Write, All Read, or All Hide.**
    - **To assign different access levels to different sections, select the Custom option, then select an access level in the drop-down list next to the name of each section.**
4. To assign User Console permissions:
    - **In the User Console** *Permissions* **section, click the User Console link to expand the permissions section.**
    - **To assign the same access level to all sections of the User Console, select All Write, All Read, or All Hide.**
    - **To assign different access levels to different sections, select the Custom option, then select an access level in the drop-down list next to the name of each section.**
5. Click **Save**.

    **NOTE:** If you assign the **Hide** permission to **General** and **User Authentication** under *Settings*, the *Control Panel* is hidden.

The role appears on the *Roles* page. When you add an organization, the role appears on the *Role* drop-down list. See Adding, editing, and deleting organizations.

# Duplicate Organization Roles

When you duplicate an Organization Role, its properties are copied into the new role. If you are creating a role that is similar to an existing role, duplicating the role can be faster than creating a role from scratch.

1. Go to the *Organization Role Detail* page:

a. Log in to the appliance System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page.
b. On the left navigation bar, click **Organizations**, then click **Roles**.
c. Click the name of a role.

2. Click **Duplicate** at the bottom of the page to duplicate the organization details.

   **The page refreshes.**

3. Provide the following information:

| Option | Description |
|---|---|
| **Name** | (Required) Enter a name for the role. |
| **Description** | (Optional) Enter a description of the role. |

4. To assign Administrator Console permissions:
   - **In the Administrator Console** *Permissions* **section, click a component name to expand it, or click Expand All to expand all components.**
   - **To assign the same access level to all sections, select All Write, All Read, or All Hide.**
   - **To assign different access levels to different sections, select the Custom option, then select an access level in the drop-down list next to the name of each section.**
5. To assign User Console permissions:
   - **In the User Console** *Permissions* **section, click the User Console link to expand the permissions section.**
   - **To assign the same access level to all sections of the User Console, select All Write, All Read, or All Hide.**
   - **To assign different access levels to different sections, select the Custom option, then select an access level in the drop-down list next to the name of each section.**
6. Click **Save**.

# Delete roles

With the exception of the Default Role, you can delete Organization Roles as needed. You cannot delete the Default Role, and you cannot delete a role if it is assigned to an organization.

The following roles cannot be deleted:

- the Default Role
- any roles assigned to an organization
- any roles associated with a label

1. Go to the *Roles* list:
   a. Log in to the appliance System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page.
   b. On the left navigation bar, click **Organizations**, then click **Roles**.
2. Select the check box next to one or more roles.
3. Select **Choose Action** > **Delete**, then click **Yes** to confirm.

# Adding, editing, and deleting organizations

You can add, edit, and delete organizations as needed. In addition, you can rename the Default organization and edit its settings.

## Add or edit organizations

You can add or edit up to 50 organizations on a single appliance.

When you add organizations, you need to assign them Organization Roles. You can use the Default Role, but if you want to use a custom Organization Role, add that role before you add the organization. See Add or edit Organization Roles.

1. Go to the *Organization Detail* page:
    a. Log in to the appliance System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page.
    b. On the left navigation bar, click **Organizations**, then click **Organizations**.
    c. Display the *Organization Detail* page by doing one of the following:
    - Click the name of an organization.
    - Select **Choose Action** > **New**.
2. If you are adding an organization, provide the following information, then click **Save**.

| Option | Description |
|---|---|
| **Name** | Enter a name for the organization. You can modify the name later if required. If the fast switching option is enabled, this name appears in the drop-down list in the top-right corner of the page. See Enable fast switching for organizations and linked appliances. |
| **Description** | A description of the organization. You can modify the description later if necessary. |
| **Role** | The user role you want to assign to the organization. You can modify this selection later if required.<br>**NOTE:** To create a role, go to **Organizations** > **Roles**. |
| **Client Drop Size** | A file-size filter for the organization's Client Drop location.<br>The Client Drop location is a storage area (Samba share) for the organization on the appliance. This storage area is used to upload large files, such as application installers and appliance backup files, to the appliance. Uploading files to the Client Drop location is an alternative to uploading files through the Administrator Console using the default HTTP mechanism, which can result in browser timeouts for large files.<br>The *Client Drop Size* filter determines whether files uploaded to the organization's Client Drop location are displayed on the *Upload and Associate Client Drop File* list on the *Software Detail* page. For example, if the Client Drop Size filter is set to 1 GB, the *Upload and Associate Client Drop File* list shows files that are 1 GB in size or larger. Files that are less than 1 GB in size are not displayed on the list.<br>Application files are moved from the organization's Client Drop location to the appropriate area when the file is selected on the *Software Detail* page and saved. |

| Option | Description |
|---|---|
| | Appliance backup files that are placed in the Client Drop location are automatically identified as appliance backup files, and they become available for selection on the *Backup Settings* page within five minutes.<br>If you have multiple organizations, each organization has its own Client Drop location and Client Drop Size filter setting. See Copy files to the appliance Client Drop location. |

3. Add, edit, or view the following information:

| Option | Description |
|---|---|
| **Name** | Modify the name of the organization as needed. If the fast switching option is enabled, this name appears in the drop-down list in the top-right corner of the page. See Enable fast switching for organizations and linked appliances. |
| **Locale** | The language to use for the organization's Administrator Console and User Console. |
| **Virtual Host Name** | A unique domain name for this organization. When this field is configured, and you log in to the appliance from the specified location, the appliance selects this organization automatically, and you only need to provide your user credentials. If you use Security Assertion Markup Language (SAML) login, the configured virtual host name logs you directly into that organization's Identity Provider (IdP). For more information about SAML login, see Configure SAML for single sign on. |
| **Virtual Host IP** | A unique IP address for this organization. When this field is configured, and you log in to the appliance from the specified location, the appliance selects this organization automatically, and you only need to provide your user credentials. If you use SAML login, the configured virtual host IP address logs you directly into that organization's IdP. For more information about SAML login, see Configure SAML for single sign on. |
| **Description** | A description of the organization. You can modify the description later if necessary. |
| **Database Name** | (Read-only) Displays the name of the database the organization is using. |
| **Report User** | (Read-only) The username used to generate reports. The report username provides access to the database (for additional reporting tools), but does not give write access to anyone. |
| **Report User Password** | The report user password. This password is used only by the reporting system and MySQL. |
| **Role** | The user role you want to assign to the organization. You can modify this selection later if required.<br>**NOTE:** To create a role, go to **Organizations** > **Roles**. |
| **Client Drop Size** | A file-size filter for the organization's Client Drop location.<br>The Client Drop location is a storage area (Samba share) for the organization on the appliance. This storage area is used to upload large files, such as application installers and appliance backup files, to the appliance. Uploading files to the Client Drop location is an alternative to uploading files through the Administrator Console using the default HTTP mechanism, which can result in browser timeouts for large files. |

| Option | Description |
|---|---|
| | The *Client Drop Size* filter determines whether files uploaded to the organization's Client Drop location are displayed on the *Upload and Associate Client Drop File* list on the *Software Detail* page. For example, if the Client Drop Size filter is set to 1 GB, the *Upload and Associate Client Drop File* list shows files that are 1 GB in size or larger. Files that are less than 1 GB in size are not displayed on the list.<br>Application files are moved from the organization's Client Drop location to the appropriate area when the file is selected on the *Software Detail* page and saved.<br>Appliance backup files that are placed in the Client Drop location are automatically identified as appliance backup files, and they become available for selection on the *Backup Settings* page within five minutes.<br>If you have multiple organizations, each organization has its own Client Drop location and Client Drop Size filter setting. See Copy files to the appliance Client Drop location. |
| **Filters** | The filters you want to use to assign new devices to the organization when devices check in to the appliance. To select multiple filters, use **Ctrl**-click or **Command**-click. |
| **Devices** | (Read-only) Displays the number of devices assigned to the organization. |

4. Specify the following settings:

**NOTE:** To reduce the load on the appliance, limit the number of Agent connections to 500 per hour. The number of connections that appears next to the inventory, scripting, and metering intervals, applies to the current organization only. If the Organization component is enabled on your appliance, the total number of Agent connections for all organizations should not exceed 500 per hour.

| Option | Suggested Setting | Notes |
|---|---|---|
| **Agent Logging** | Enabled | Whether the appliance stores scripting results provided by Agents installed on managed devices. Agent logs can consume as much as 1GB of disk space in the database. If disk space is not an issue, enable *Agent Logging* to keep all log information for Agent-managed devices. These logs can be useful during troubleshooting. To save disk space, and enable faster Agent communication, disable *Agent Logging*. |
| **Agent Debug Trace** | Enabled | If selected, this option allows you to record the Agent's debug trace. This information allows administrators to monitor the Agent's performance, and to diagnose common problems. |
| **Agent Inventory** | 12 hours | The frequency at which Agents on managed devices report inventory. This information is displayed in the *Inventory* section. |
| **Agentless Inventory** | 1 Day | The frequency at which Agentless devices report inventory. This information is displayed in the *Inventory* section. |
| **Catalog Inventory** | 24 hours | The frequency at which managed devices report inventory to the *Software Catalog* page. |
| **Metering** | 4 hours | The frequency at which managed devices report metering information to the appliance. Requires metering to be enabled on devices and applications. |

| Option | Suggested Setting | Notes |
|---|---|---|
| **Scripting Update** | 4 hours | The frequency at which Agents on managed devices request updated copies of scripts that are enabled on managed devices. This interval does not affect how often scripts run. |
| **Max Download Speed** | As required | The maximum download speed, as required. Choose from the available options. |
| **Process Timeout** | 1 hour | The maximum length of time the agent process run before being terminated. For more details, visit https://support.quest.com/kb/177093/how-to-allow-more-time-for-a-kace-script-to-run-before-it-times-out-. |
| **Disable Wait for Bootup Tasks** | Disabled | If selected, this option stops the agent from executing bootup tasks. |
| **Disable Wait for Login Tasks** | Disabled | If selected, this option stops the agent from executing login tasks. |

5. In the *Agent Status Icon Settings* section, specify the following settings:

| Option | Suggested Setting | Notes |
|---|---|---|
| **Agent Status Icon On Device** | Enabled | If selected, this option allows you to display the agent status on managed devices. |
| **Agent Snooze on Device** | Enabled | If selected, this option allows you to suspend the agent's activity on managed devices using the system tray (Windows) or menu bar (Mac OS).<br>**NOTE:** Some critical background tasks are still allowed to run, including inventory, replication tasks, and urgent alerts. |
| **Agent Snooze Max Count (per day)** | 1 snooze | The maximum number of times you can snooze the agent each day on managed devices. |
| **Agent Status Icon Shortcuts** | As required | Use this section to display links in the KACE Agent menu on agent-managed devices. You can specify up to ten links. Standard Uniform Resource Identifier (URI) links are supported, such as `https`, `ssh`, and `ftp` URLs. To add a link:<br>a. Click +.<br>b. In the *Display Name* column, type the text that you want to display in the menu. For example, *My FTP link*. |

| Option | Suggested Setting | Notes |
|---|---|---|
| | | c. In the URL column, type the fully qualified URL address. For example, `https://www.quest.com/`. The URL supports the following replacement variables:<br>◦ $(KACE_SYS_DIR)<br>◦ $(KACE_MAC_ADDRESS)<br>◦ $(KACE_IP_ADDRESS)<br>◦ $(KACE_SERVER_URL)<br>◦ $(KACE_SERVER)<br>◦ $(KACE_COMPANY_NAME)<br>◦ $(KACE_KUID)<br>◦ $(KACE_APP_DIR)<br>◦ $(KACE_DATA_DIR)<br>◦ $(KACE_AGENT_VERSION)<br>For complete information about these and other replacement variables, see Token replacement variables.<br>You can use the column headings to sort the list. In the KACE Agent menu, the links appear in the order they are listed on this page. |

**NOTE:** Any changes that you make in this section take effect only after the KACE Agent on the managed device reconnects to the appliance, either by restarting each individual agent, or the appliance.

6. In the *Notify* section, specify the message to use for Agent communications:

| Option | Suggested Setting | Notes |
|---|---|---|
| **Agent Splash Page Message** | Default text:<br>KACE Service Desk `is verifying your PC Configuration and managing software updates. Please Wait...` | The message that appears to users when Agents are performing tasks, such as running scripts, on their devices. |
| **Agent Splash Bitmap** | As required | The path to an existing .bmp file that you want to use as the splash logo. |
| **Disable Bootup Splash** | Disabled | If selected, this option stops the agent from displaying the boot-up splash logo. |
| **Disable Login Splash** | Disabled | If selected, this option stops the agent from displaying the login splash logo. |

7. In the *Agentless Settings* section, specify communications settings for Agentless devices:

| Option | Description |
|---|---|
| **SSH Timeout** | The time, in seconds, after which the connection is closed if there is no activity. |
| **SNMP Timeout** | The time, in seconds, after which the connection is closed if there is no activity. |

| Option | Description |
|---|---|
| **Retry Attempts** | The number of times the connection is attempted. |
| **WinRM Timeout** | The time, in seconds, after which the connection is closed if there is no activity. |
| **VMware Timeout** | The amount of time in seconds to wait for a connection to the VMware vSphere API service running on a VMware host. |

8. In the *Agentless Settings* section, specify communications settings for Agentless devices:

| Option | Description |
|---|---|
| **SSH Timeout** | The time, in seconds, after which the connection is closed if there is no activity. |
| **SNMP Timeout** | The time, in seconds, after which the connection is closed if there is no activity. |
| **Retry Attempts** | The number of times the connection is attempted. |
| **WinRM Timeout** | The time, in seconds, after which the connection is closed if there is no activity. |
| **VMware Timeout** | The amount of time in seconds to wait for a connection to the VMware vSphere API service running on a VMware host. |

9. Click **Save**.

   The organization is added. If fast switching is enabled, and the default **admin** account passwords for the System and for your organizations are the same, you can switch between organizations and the System using the drop-down list in the top-right corner of the page. To see new organizations in the list, you need to log out of the Administrator Console and then log back in. In addition, if the option to require organization selection at login is enabled at the System level, the organization is available in the drop-down list on the Administrator Console login page, `http://appliance_hostname/admin`, where **appliance_hostname** is the hostname of your appliance.

   **NOTE:** For new organizations, the password for the default **admin** account is the same as the password for the default **admin** account at the System level. This is assigned automatically. To change the **admin** account password, edit the admin user account.

   **NOTE:** However, be aware that organizations with different **admin** account passwords are not available for **fast switching** using the drop-down list in the top-right corner of the page.

For more information about System-level settings, see Configure appliance General Settings with the Organization component enabled.

**Related topics**

Managing organization filters

View appliance logs

Managing user accounts for organizations

# Configure Two-Factor Authentication for organizations

Two-Factor Authentication (2FA) provides stronger security for users logging into the appliance by adding an extra step to the login process. It relies on the Google Authenticator app to generate verification codes. The app generates a new six-digit code at regular intervals. When enabled, end users will be prompted for the current verification code each time they log in.

To download the Google Authenticator app, visit one of the following sites, as applicable:

- **Android devices**: https://play.google.com/store/apps/details?id=com.google.android.apps.authenticator2
- **iOS devices**: https://itunes.apple.com/ca/app/google-authenticator/id388497605?mt=8

You can enable or disable 2FA access to the Administrator Console and User Console for one or more organizations using the System Administration Console, as described below. Alternatively, you can enable 2FA access to the Administrator Console and User Console for all users in an organization using the *Two-Factor Authentication* page in the Administrator Console For more information, see Enable Two-Factor Authentication for all users.

1. Go to the *Organizations* list page:
    a. Log in to the appliance System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page.
    b. On the left navigation bar, click **Organizations**, then click **Organizations**.
2. On the *Organization* list page that appears, select one or more organizations for which you want to configure 2FA.
3. To enable 2FA for all users in the selected organizations in the Administrator Console, click **Choose Action > Two-Factor Authentication > Admin Portal > Required for all Users**.
4. To disable 2FA for all users in the selected organizations in the Administrator Console, click **Choose Action > Two-Factor Authentication > Admin Portal > Not Required**.
5. To enable 2FA for all users in the selected organizations in the User Console, click **Choose Action > Two-Factor Authentication > User Portal > Required for all Users**.
6. To disable 2FA for all users in the selected organizations in the User Console, click **Choose Action > Two-Factor Authentication > User Portal > Not Required**.

# Delete organizations

You can delete organizations as needed. However, if you have a single organization on your appliance, you cannot delete that organization until you add another one. The appliance must always have at least one organization available.

1. Go to the *Organization Detail* page:
    a. Log in to the appliance System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page.
    b. On the left navigation bar, click **Organizations**, then click **Organizations**.
    c. Click the name of an organization.
2. Select **Choose Action > Delete**, then click **Yes** to confirm.

The organization, including information in the organization database, is removed from the appliance.

# Customizing the logos used for the User Console and organization reports

You can change the logo displayed on the User Console and in organization reports to match your company branding.

The User Console, and the reports you run when logged in to the organization through the Administrator Console, use the Quest logo by default. To upload your own logo, see the *Logo Overrides* section in Configure appliance General Settings without the Organization component.

# Managing user accounts for organizations

Organization user accounts enable users to access the features of the Administrator Console, User Console, and Service Desk based on their roles assigned to their accounts.

You can use LDAP servers for user authentication, or you can add and edit user accounts manually. See:

- Managing organization user accounts
- Managing System-level user accounts
- Using an LDAP server for user authentication

> **CAUTION: Use caution when changing the password for the default admin account of an organization. Organizations whose admin account passwords differ are not available for fast switching using the drop-down list in the top-right corner of the page.**
>
> **CAUTION: See Enable fast switching for organizations and linked appliances.**

# Managing organization filters

Organization filters assign devices to organizations when devices are inventoried.

Organization filters are similar to labels, but they serve a specific purpose: Organization filters automatically assign devices to organizations when devices are inventoried.

There are two types of organization filters:

- **Data Filter**: Assigns devices to organizations automatically based on search criteria. When devices are inventoried, they are assigned to the organization if they meet the criteria. This filter is similar to Smart Labels in that it assigns devices to organizations automatically if they match specified criteria.
- **LDAP Filter**: Assigns devices to organizations automatically based on LDAP or Active Directory interaction. When devices are inventoried, the query runs against the LDAP server. If devices meet the criteria, they are automatically assigned to the organization.

To add or edit organization filters, see:

- Add or edit organization Data Filters
- Add or edit organization LDAP Filters

After you add a filter, you can associate it with an organization on the *Organization Detail* page. See Adding, editing, and deleting organizations.

## How organization filters work

Organizations can use multiple filters, but the same filter cannot be assigned to multiple organizations.

Organization filters run according to the following rules:

- When devices are inventoried, one or more filters runs against them. If there are multiple filters, they run according to the **Order** or **Evaluation Order** number in the filter details.
- If devices match the criteria, they are assigned to the organization.
- If devices do not match the criteria, they are assigned to the Default organization. An administrator can then manually move devices from the Default organization to the appropriate organization. See Redirect devices.

# Add or edit organization Data Filters

You can add or edit organization Data Filters to automatically assign devices to organizations.

1. Go to the *Organization Filters Detail* page:
    a. Log in to the appliance System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page.
    b. On the left navigation bar, click **Organizations**, then click **Filters**.
    c. Display the *Organization Filter Detail* page by doing one of the following:
    - Click the name of a filter.
    - Select **Choose Action** > **New Data Filter**
2. Provide the following information:

| Option | Description |
|---|---|
| **Enabled** | Whether the filter is enabled. Filters have to be enabled before they can be applied. |
| **Name** | The name of the filter. This name appears on the *Organization Filters* list. |
| **Description** | A description of the filter. |
| **Order** | The run order of the filter. Filters run according to the number specified. Low numbers run before high numbers. |

3. In the **Device Filter Criteria** section, select filter criteria:
    a. Select a device attribute in the left-most drop-down list in the top row.

    **For example: IP Address.**

    **TIP:** The appliance supports both IPv6 (Internet Protocol version 6) and IPv4 addresses.

    b. Select a condition in the second drop-down list.

    **For example: contains.**

    c. In the text box, enter a value for the attribute.

    **For example, to find devices from a specified IP address range, such as the entire subnet 67.18.250.255, use the percent sign (%) as a wildcard as follows: 67.18.250.%.**

    d. **Optional**: To add attributes, select an operator, such as [**and** ], in the left-most drop-down list of the second row.

    **The fields in the row become active.**

    e. **Optional**: To add rows to the criteria section, click **Add Criteria**.

    **An additional row appears.**
4. Click **Save**.

# Add or edit organization LDAP Filters

You can add LDAP Filters to automatically assign devices to organizations using LDAP criteria.

**NOTE:** If the LDAP server requires credentials for administrative login (that is, non-anonymous login), supply those credentials. If user name and password are not provided, the tree lookup is not performed. Each LDAP Filter might connect to a different LDAP server.

1. Go to the *Organization Filters Detail* page:
   a. Log in to the appliance System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page.
   b. On the left navigation bar, click **Organizations**, then click **Filters**.
   c. Display the *Organization Filter Detail* page by doing one of the following:
   - Click the name of a LDAP filter.
   - Select **Choose Action** > **New LDAP Filter**
2. Provide the following information:

| Option | Description |
|---|---|
| **Enabled** | Whether the filter is enabled. Filters have to be enabled before they can be applied. |
| **Name** | The name of the filter. This name appears on the *Organization Filters* list. |
| **Description** | A description of the filter. |
| **Evaluation Order** | The run order of the filter. Filters run according to the number specified. Low numbers run before high numbers. |

3. Specify LDAP criteria:

| Option | Description |
|---|---|
| **LDAP Server** | The IP address or the hostname of the LDAP server. If the IP address is not valid, the appliance waits to timeout, resulting in login delays during LDAP authentication.<br>**NOTE:** To connect through SSL, use an IP address or hostname. For example: ldaps://hostname. |
| **Port** | The LDAP port number, which is usually 389 (LDAP) or 636 (secure LDAP). |
| **Base Dn** | The LDAP criteria used to filter the main location for devices.<br>This criteria specifies a location or container in the LDAP or Active Directory structure, and the criteria should include all the devices that you want to identify. Enter the most specific combination of OUs, DCs, or CNs that match your criteria, ranging from left (most specific) to right (most general). For example, this path might lead to the container with devices that you want to identify:<br>`OU=computers,DC=company,DC=com.` |
| **Advanced Search** | The search filter. For example:<br>`(&(objectCategory=Computer)(sAMAccountName=KBOX_COMPUTER_NAME))` |
| **LDAP Login** | The credentials of the account the appliance uses to log in to the LDAP server to read accounts. For example:<br>`LDAP Login:CN=service_account,CN=Users,DC=company,DC=com.`<br>If no username is provided, an anonymous bind is attempted. Each LDAP Label can connect to a different LDAP or Active Directory server. |

| Option | Description |
|---|---|
| **LDAP Password** | The password of the account the appliance uses to log in to the LDAP server. |

**During the filter processing, the appliance will replace all KBOX_ defined variables with their respective runtime values.**

Currently supported variables for organization device filters:

```
KBOX_COMPUTER_NAME
KBOX_COMPUTER_DESCRIPTION
KBOX_COMPUTER_MAC
KBOX_COMPUTER_IP
KBOX_USER
KBOX_USER_DOMAIN
KBOX_DOMAINUSER
```

Should the external server require credentials for administrative login (aka non-anonymous login) please supply those credentials. If no LDAP user name is given then an anonymous bind will be attempted. Each LDAP filter may connect to a different LDAP/AD server.

**NOTE:** To test your Filter, replace any KBOX_ variables with real values. Click **Test** and review the results.

4. Click **Save**.

# Test organization filters

You can test organization filters to verify that they produce expected results.

1. Go to the Organizations *Devices* list:
   a. Log in to the appliance System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page.
   b. On the left navigation bar, click **Organizations**, then click **Devices**.
2. Click the **Test Organization Filter** tab above the list on the right side of the page.
3. Select a filter in the **Select a Filter** drop-down list.
4. Click **Test**.

**Test results are displayed. If necessary, you can refilter the devices displayed in the list. See Filter devices.**

**NOTE:** If you do not see any devices listed in the test results, either no existing devices match the criteria, or the criteria are invalid. To edit the criteria, see Add or edit organization Data Filters.

# Delete organization filters

You can delete organization filters provided that they are not associated with an organization.

1. Go to the *Organizations* list:
   a. Log in to the appliance System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page.
   b. On the left navigation bar, click **Organizations**, then click **Organizations**.
2. If the filter is associated with an organization:
   a. Click the name of an organization to display the *Organization Detail* page.
   b. In the *Filters* field, click the **x** next to the filter you want to delete.
   c. At the bottom of the page, click **Save**.

**Filters are updated only after you click Save.**

The filter is no longer associated with the organization.

3. Click **Organizations** > **Filters** to display the *Organization Filters* page.
4. To delete a filter, do one of the following:
   - **Select the check box next to one or more filters, then select Choose Action > Delete.**
   - **Click the linked name of a filter, then on the** *Organization Filter Detail* **page, click Delete.**
5. Click **Yes** to confirm.

# Managing devices within organizations

You can search for, filter, and redirect, devices assigned to organizations.

## Using Advanced Search

If you need more granularity than keyword searches provide, you can use Advanced Search. Advanced Search enables you to specify values for each field in the inventory record and search the entire inventory listing for that value.

For example, if you need to know which devices have a particular version of BIOS installed to upgrade only those affected devices, you can search for BIOS information. See Searching at the page level with advanced options.

**TIP:** You can apply filters to devices displayed in search results.

## Filter devices

If you have organization filters, you can filter devices to verify that the filters are being applied correctly.

1. Go to the *Organization Devices* list:
   a. Log in to the appliance System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page.
   b. On the left navigation bar, click **Organizations**, then click **Devices**.
2. Select the check box next to one or more devices.
3. Select **Choose Action** > **Apply Filter**.

   **The selected devices are checked against existing filters. If devices were reassigned to organizations, the new organization name appears next to the old organization name in the** *Organization* **column.**

## Redirect devices

You can redirect, or manually reassign, devices to organizations as needed.

For example, a device that has been assigned to organization **A** can be manually redirected to organization **B** so that it appears in the organization **B** inventory.

1. Go to the *Organization Devices* list:
   a. Log in to the appliance System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page.
   b. On the left navigation bar, click **Organizations**, then click **Devices**.
2. Select the check box next to one or more devices.
3. Select **Choose Action** > **Assign**, then select an organization name to redirect the selected devices to the organization.

# Understanding device details

The *Device Details* page in the System-level *Organizations* section provides details about devices that are assigned to organizations.

To access the *Device Details* page in the *Organizations* section, go to the appliance System level and select **Organizations** > **Devices**, then select a device name in the list. For information about device details, see Managing inventory information.

# Running single organization and consolidated reports

If the Organization component is enabled on your appliance, and if you have multiple organizations on your appliance, you can run single-organization reports for each organization separately. In addition, you can run consolidated reports that provide information for all organizations in a single report.

For information on report creation, see Creating reports.

# Importing and exporting appliance resources

You can transfer resources among organizations on an appliance, and if you have multiple appliances, you can transfer resources among appliances as well.

# About importing and exporting resources

Resources, such as Managed Installations and Smart Labels, can be imported and exported among organizations and appliances.

If you have multiple KACE SMAs, you can transfer resources among them using the built-in Samba share directories on the appliances. In addition, if the Organization component is enabled on your appliance, you can transfer resources among organizations. This is useful for resources, such as scripts, that are created for one organization, but that might be useful to other organizations as well.

You can import and export the following resources:

- Notifications
- Managed Installations
- Reports
- Scripts
- Smart Labels
- Software
- Service Desk processes, ticket queues, and ticket rules

# Transferring resources among appliances using Samba share directories

You can use Samba share directories as staging areas to transfer resources among appliances.

To do this, export the resources from one appliance, then import them to a different appliance.

## Export resources from an appliance

Export resources from an appliance to make those resources available for import to other appliances.

1. Log in to the Administrator Console of the appliance where the resources are located.
2. Enable Samba share file sharing.

   **See Enable file sharing at the System level.**

3. Go to the *Share Resources* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **Resources**.
   c. On the *Resources Panel*, click **Export**.
4. **Optional**: To filter the list, use the *View By* drop-down list and *Search* field, which appear above the table on the right.

   **For example, select a resource in the *View By* drop-down list to display only that resource category, or enter a term in the *Search* field to display items that match that term.**

5. Select the check box next to one or more resources.
6. Do one of the following:
   - **Choose Action > Export to Local Share**
   - **Choose Action > Export to Network Share**

   **NOTE:** Select **Export to Network Share** to save the data to a shared location that exists on the network and can be accessed from other devices. **Select Export to Local Share** to save the data to a location on a device that is only accessible from that device.
7. **Optional**: On the *Annotate Exported Resource(s)* page, enter any additional information in the **Note** field.
8. Click **Save**.

   **The exported resources first appear on the *Resource Sharing Status* page with a *Status* of *New Request*.**

When the export is complete, the *Status* changes to *Completed*. The exported resources are available on the Samba share for import. See Import resources to organizations.

Most import and export tasks take only a moment to complete, but very large resources take more time.

## Import resources to an appliance

You can import resources to appliances as needed.

You have exported resources from an appliance. See Transferring resources among appliances using Samba share directories.

1. To view the Samba share location, do one of the following:
   - **If the Organization component is not enabled on your appliance, select Settings > Security Settings.**
   - **If the Organization component is enabled on your appliance, select an organization in the drop-down list in the top-right corner of the page, then select Settings > General Settings.**
2. Using a third-party file copying utility, copy the resources from the **exporting** appliance Samba share to the **importing** appliance Samba share.
3. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
4. On the **importing** appliance, select **Settings** > **Resources** to display the *Resources* panel.
5. Click **Import** to display the *Import Appliance Resources* page, which shows all of the appliance resources available to import.
6. Select **Choose Action** > **Import from Network Share** to display the *Import Resources From SAMBA Directory* page.
7. Select the resources to import, then click **Import Resources**.

   **The imported resources first appear on the** *Resource Manager Queue* **page with a** *Status* **of** *New Request***.**

When the import is complete, the *Status* changes to *Completed*. The imported resources are available and listed on their respective tabs, such as *Reporting*.

Most import and export tasks take only a moment to complete, but very large resources take more time.

# Transferring resources among organizations

If the Organization component is enabled on your appliance, you can transfer resources among organizations by exporting them from one organization and importing them into other organizations.

## Export resources from organizations

Export resources from organizations to make those resources available for import to other organizations.

1. In the top-right corner of the page, select the organization you want to export resources from.
2. Go to the *Export Resources* list:
   a. On the left navigation bar, click **Settings**, then click **Resources**.
   b. On the *Resources Panel*, click **Export**.

   **The** *Export Resources* **page appears, listing all of the organization resources available for export.**
3. Select the check box next to one or more resources.
4. Select **Choose Action** > **Export to Local Share** or **Export to Network Share** to display the *Annotate Exported Resource(s)* dialog.
5. **Optional**: Enter any additional information in the *Note* field.
6. Click **Save**.

   **The exported resource first appears on the** *Resource Manager Queue* **page with a** *Status* **of** *New Request***.**

When the export is complete, the *Status* changes to *Completed*. The exported resources are available for other organizations on your appliance to import. For instructions, see Import resources to organizations.

Most import and export tasks take only a moment to complete, but very large resources take more time.

## Import resources to organizations

You can import resources to organizations as needed.

You have exported resources from an organization. See Transferring resources among organizations.

To import appliance resources from another appliance, follow the instructions in Transferring resources among appliances using Samba share directories.

1. In the drop-down list in the top-right corner of the page, select the organization to which you want to import resources.
2. Go to the *Import Resources* list:
    a. On the left navigation bar, click **Settings**, then click **Resources**.
    b. On the *Resources Panel*, click **Import**.
3. Select the check box next to one or more resources.
4. Select **Choose Action** > **Import from Local Share**.

    **The imported resource first appears on the** *Resource Sharing Status* **page with a** *Status* **of** *New Request***.**

When the import is complete, the *Status* changes to *Completed*. The imported resources are available and listed on their respective tabs, such as *Reporting*.

Most import and export tasks take only a moment to complete, but very large resources take more time.

# Managing exported resources at the System level

If the Organization component is enabled on the appliance, you can manage exported or shared resources at the System level.

This provides access to resources that have been exported or made available for sharing from any organization on the appliance.

## View or delete shared resources

If the Organization component is enabled on your appliance, you can view resources that have been exported from any organization on the appliance.

1. Go to the *Shared Resources* list:
    a. Log in to the appliance System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page.
    b. On the left navigation bar, click **Settings**, then click **Resources**.
    c. Click **Shared**.
2. To delete a resource:
    a. Select the check box next to one or more resources.
    b. Select **Choose Action** > **Delete**, then click **Yes** to confirm.

# Move shared resources from the local appliance to network locations

If the Organization component is enabled on your appliance, you can move shared resources from the local appliance to a network share.

1. Go to the *Shared Resources* list:
    a. Log in to the appliance System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page.
    b. On the left navigation bar, click **Settings**, then click **Resources**.
    c. Click **Shared**.
2. Select **Choose Action > Export to Network Share**, then click **Yes** to confirm.

# View or delete the status of resource exports

If the Organization component is enabled on your appliance, you can view the status of resources that have been exported from any organization at the System level.

Status information is automatically deleted after 24 hours, but you can delete the status manually as needed.

1. Go to the *Resource Sharing Status* list:
    a. Log in to the appliance System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page.
    b. On the left navigation bar, click **Settings**, then click **Resources**.
    c. On the *Resources Panel*, click **Status**.
2. To delete a status:
    a. Select the check box next to a status.
    b. Select **Choose Action > Delete**, then click **Yes** to confirm.

# Managing inventory

You can use the appliance to manage devices, software, processes, and services in inventory.

# Using the Inventory Dashboard

The Inventory Dashboard provides an overview of managed devices for the selected organization (if applicable), or the appliance.

If the Organization component is enabled on the appliance, and you are logged in to the Administrator Console (`http://`**appliance_hostname**`/admin`), the Inventory Dashboard shows information for the selected organization.

You can access the *Inventory Dashboard* if one or more roles associated with your user account grants access to this dashboard. If you want to hide it, edit your user roles, as needed. For more information, see Add or edit User Roles.

**TIP:** The appliance updates the summary widgets periodically. To update most of the widgets any time, click the **Refresh** button in the upper right of the page: . To update most individual widgets, hover over the widget, then click the **Refresh** button above the widget. Some widgets may require additional steps.

# About the Inventory Dashboard widgets

Inventory Dashboard widgets provide overviews of managed devices for the organization or appliance, as selected.

This section describes the widgets available on the *Inventory Dashboard*. If the Organization component is enabled on your appliance, the widgets show the information for the selected organization at the Admin level and for the appliance at the System level.

This dashboard provides a high-level overview of your device usage. Use it to quickly review the state of your devices and look for any indicators that can improve your device inventory. For example, you can focus on the device disk capacity and reassign resources where they are most needed.

| Widget | Description |
|---|---|
| Device Reports | This widget contains links to common inventory reports. Use them to quickly generate a specific report, such as *Devices by memory*, *Devices by OS*, and others. |
| Connections | This widget shows the number of connections to the appliance web server. A high number indicates a high load on the server, which might reduce appliance response time. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| Device Check-In Rate | This widget displays the number of devices that have connected to the appliance in the past 60 minutes. If the Organization component is enabled on your appliance, this widget is available at the System level. |

| Widget | Description |
|---|---|
| Provisioning | This widget shows the status of KACE Agent provisioning or installation tasks. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| Shortcuts | This widget contains links to common Inventory pages and wizards. Use them to quickly navigate to specific pages, such as the Agent Provisioning Assistant, the *Discovery Schedules* page, and others. |
| Agent Version Counts | This widget show the counts of agents for each version. This information can be useful during an upgrade. |
| Inventory Counts | This widget displays the counts of devices associated with each device management method, such as Agent Managed, Agentless, and others. It also shows the number of Agents that have been updated in the last eight hours. |
| Devices by Disk Capacity | This widget shows a donut chart, where each section of the chart indicates the percentage of free disk space on the managed devices. Clicking the widget title displays a report with links to the associated devices. Hovering over each section of the chart displays the percentage of managed devices that have the selected percentage of free disk space. For example, if you hover over the red part of the chart, the widget displays the percentage of devices whose free disk space is lower than 25%. |
| Managed Operating Systems | This widget shows the percentage of managed devices that are running each operating system. If the Organization component is enabled on your appliance, this widget shows the percentage of devices in the selected organization. |
| Provision Platforms | This widget shows the percentage of operating systems installed on Agent-managed devices. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| Devices By Manufacturer | This widget shows the top device manufacturers represented in device inventory. If the Organization component is enabled on your appliance, this widget shows the percentage of devices in the selected organization. |
| Devices By Model | This widget shows the top device models represented in the device inventory. If the Organization component is enabled on your appliance, this widget shows the percentage of devices in the selected organization. |
| Devices By Memory | This widget shows a bar chart, where each bar represents a number of devices that have an indicated amount of RAM installed on them. |
| Devices By Processor | This widget shows a bar chart, where each bar represents a number of devices that have a specific processor configuration. |
| Devices By Subtype | This widget shows a donut chart, where each section of the chart indicates the percentage of the managed devices by device subtype. |
| VMware Device Counts | This widget shows the counts of each VMware device type, such as vCenters, ESXi hosts, virtual machines, and provisioned virtual machines. Clicking the widget title displays the *Devices* list page. |

| Widget | Description |
|---|---|
| VMware Device Reports | This widget contains links to five popular VMware inventory reports. Clicking the widget title displays the *Reports* list page with the *Virtual Infrastructure* filter applied. |
| VMware ESXi Device By Status | This widget displays a donut chart showing the current status of ESXi devices. There are four possible values: *OK*, *Warning*, *Error* and *Unknown*. Clicking the widget title displays a new VMware inventory report that lists all ESXi devices by current status. |
| VMware ESXi Version Counts | This widget shows the counts of the top five ESXi versions. Clicking the widget title displays a new VMware inventory report that shows all ESXi devices by version. |

# Customize the Inventory Dashboard

You can customize the Inventory Dashboard to show or hide widgets as needed.

1. Go to the *Inventory Dashboard*.
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Dashboard**.
2. Hover over the widget, then use any of the following buttons:
    - : Refresh the information in the widget.
    - : Display information about the widget.
    - : Hide the widget.
    - : Resize the widget.
    - : Drag the widget to a different position on the page.
3. Click the **Customize** button in the top-right corner of the page to view available widgets.
4. To show a widget that is currently hidden, click **Install**.

# Using Device Discovery

Use device Discovery to identify devices that are connected to your network and to retrieve information about those devices.

Use Discovery Results to label devices or add devices to inventory.

# About Device Discovery and device management

Devices that can be discovered include laptops, desktops, servers, mobile devices, virtual devices, printers, network devices, wireless access points, routers, switches and more.

These devices can be discovered even if they do not have the KACE Agent installed on them. You can run Discovery scans on-demand or schedule scans to run at specific times.

Discovery Results show the availability and details of devices. After devices are discovered, you can add devices to inventory by:

- **Installing the KACE Agent on devices**. The KACE Agent can be installed on Windows, Mac®, Red Hat®, SUSE®, and Ubuntu® devices. See Provisioning the KACE Agent.
- **Enabling Agentless management for devices**. Agentless management is especially useful for devices that cannot have the KACE Agent installed, such as devices with unsupported operating systems. See Managing Agentless devices.

# Tracking changes to Discovery settings

If History subscriptions are configured to retain information, you can view the details of the changes made to settings, assets, and objects.

This information includes the date the change was made and the user who made the change, which can be useful during troubleshooting. See About history settings.

# Discovering devices on your network

To discover devices, you can scan your network by creating a Discovery Schedule. The Discovery Schedule specifies the protocols to use during the scan, the IP Address range to be scanned, and the frequency of the scan.

Depending on what you want out of a discovery scan and what devices you are working with, you can choose from various Discovery types.

- **Quick "what and where" Discovery**: See Add a Discovery Schedule to perform a quick "what and where" scan of your network.
- **Thorough Discovery**: You can use this type of discovery to get more device information than what is available from the "what and where" type. See Add a Discovery Schedule for a thorough scan of managed Windows, Mac, Linux, and UNIX computers.
- **External Integration Discovery**: A different type of thorough discovery that is aimed at certain computer devices that are not Windows-, Mac Os X-, or Linux-based. For more information, see:
  - Add a Discovery Schedule for a KACE Cloud Mobile Device Manager device
  - Add a Discovery Schedule for a G Suite device
  - Add a Discovery Schedule for an Workspace ONE device
- **Non-computer Discovery**: See Add a Discovery Schedule for SNMP-enabled non-computer devices.

You can scan for devices across a single subnet or multiple subnets. You can also define a scan to search for devices listening on a particular port.

When adding Discovery Schedules, you should balance the scope of the scan (the number of IP addresses you are scanning) with the depth of the probe (the number of attributes you are scanning), so that you do not overwhelm the network or the appliance. For example, if you need to scan a large number of IP addresses frequently, keep the number of ports, TCP/IP connections, and so on, relatively small. As a rule, scan a particular subnet no more than once every few hours.

# Add a Discovery Schedule to perform a quick "what and where" scan of your network

Use one of the available schedules to quickly obtain Discovery Results that show the availability of devices.

This type of Discovery scans for any device type in your network: managed computers or non-computer devices.

If you want to add an Nmap Discovery Schedule, there are several issues to consider. See Things to take into consideration with Nmap discovery.

1. Go to the *Discovery Schedule Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **Discovery Schedules**.
   c. Select **Choose Action > New**.
2. Select the *Discovery Type* to display the form with the options for the selected type.

   **Depending on the type you select, the following options appear before the *Notify* section:**

   - **Ping**. *DNS Lookup* and *Ping* discovery options appear.
   - **Socket**. *DNS Lookup* and *Socket* discovery options appear.
   - **Active Directory**. *DNS Lookup* and *Active Directory* discovery options appear.
   - **External Integration [KACE Cloud Mobile Device Manager, G Suite, Workspace ONE]**. *KACE Cloud Mobile Device Manager*, *G Suite*, and *Workspace ONE* discovery options appear.

     **NOTE:** Any devices discovered through External Integration such as KACE Mobile Device Manager, G Suite, Workspace ONE devices do not count toward the appliance license limit.
   - **Authenticated [WinRM, SNMP, SSH, VMware, Hyper-V]**. *DNS Lookup*, *Relay*, *WinRM, Hyper-V, VMM*, *SNMP*, *SSH*, and *VMware* discovery options appear.
   - **Nmap**. *DNS Lookup* and *Nmap* discovery options appear.
   - **Custom**. *DNS Lookup*, *Ping*, **Nmap**, *WinRM*, *SNMP*, *SSH*, and *VMware* discovery options appear.
3. In the *Name* field, enter a name for the scan.

   **This name appears on the *Discovery Schedules* page.**
4. In the *IP Address Range* field, enter an IP address range to scan. Use hyphens to specify individual IP address class ranges. For example, type 192.168.2-5.1-200 to scan for all IP addresses between 192.168.2-5.1 and 192.168.2-5.200, inclusive.

   **TIP:** The appliance supports both IPv6 (Internet Protocol version 6) and IPv4 addresses.

   **CAUTION: A maximum of 25,000 IP addresses is supported. If you specify an IP range that results in more than 25,000 addresses, a warning appears when you attempt to save the provisioning schedule.**
5. Select the Discovery options. The options that appear depend on the Discovery Type you have chosen:

| Option | Item | Description |
|---|---|---|
| **DNS Lookup** | | Enable Discovery to identify the name of the device. DNS Lookup is important if you want device names to appear in the Discovery Results and Inventory lists. You can select the DNS Lookup options for each Discovery type. |

| Option | Item | Description |
|---|---|---|
| | Name Server for Lookup | The hostname or IP address of the name server.<br>**TIP:** The appliance supports both IPv6 (Internet Protocol version 6) and IPv4 addresses. |
| | Timeout | The time, in seconds, after which a DNS lookup expires. If an address is not found during this time, the process “times out.” |
| **Relay** | | Enable a KACE Agent to act as a tunnel WinRM, SSH and SNMP traffic to the agent connection protocol for WinRM, SSH and SNMP discovery schedules, agentless inventory, and agent provisioning. |
| | Relay Device | Specify the device that you want to use as a relay for agentless device inventory.<br>A relay device that is used during discovery as a relay is used for agentless inventory, when a new device is provisioned automatically from discovery results.<br>Selected relay devices are listed on the following pages:<br>• On the *Agentless Device Connection Details* page, when a new device is provisioned automatically from discovery results. For more information about this page, see Enable Agentless management by entering device information manually.<br>• On the *Provisioning Schedule Detail* page, when agent provisioning is initiated from discovery results. For more information, see Install the KACE Agent on a device or multiple devices.<br>• On the *Agentless Device Connection Details* page, when a new device is provisioned automatically from discovery results. For more information about this page, see Enable Agentless management by entering device information manually. |
| **Ping** | | Perform a ping test during the network scan. During this test, the appliance sends a ping test to determine whether a system responds. |
| **Socket** | | Perform a connection test during the network scan. During this test, the appliance sends a packet to the port to determine whether the port is open. |
| | TCP Port List | Enable a port scan using TCP (Transmission Control Protocol). Use a comma to separate each port number. |
| | UDP Port List | Enable a port scan using UDP (User Datagram Protocol). Use a comma to separate each port number. |
| **Active Directory** | | Enable the appliance to check for device information on an Active Directory server. During Active Directory scans, the status is indicated as an approximate percentage instead of the number of devices scanned. |

| Option | Item | Description |
|---|---|---|
| | Use Secure LDAP (LDAPS) | Enable the appliance to use a secure port for LDAP communication. |
| | Privileged User | The username of the administrator account on the Active Directory server. For example, username@example.com. |
| | Privileged User Password | The password of the administrator account on the Active Directory server. |
| | Search Context | The criteria used to search for devices. This criteria specifies a location or container in the Active Directory structure to be searched. Enter the most specific combination of OUs, DCs, or CNs that match your criteria, ranging from left (most specific) to right (most general). For example: DC=company,DC=com |
| **KACE Cloud Mobile Device Manager** | | This option allows you to access mobile devices such as smart phones and tablets connected to the KACE Cloud Mobile Device Manager (MDM). You must obtain a tenant name and a Secret Key from the KACE Cloud MDM in order to access the devices associated with it. |
| | Tenant Name | The name of the tenant on the KACE Cloud MDM associated with the devices that you want to manage. |
| | Credentials | The details of the account that is used to connect to the KACE Cloud MDM device. Select an existing credential from the drop-down list, or select **Add new credential** to add a new credential, as required.<br>For more information, see Add and edit Secret Key credentials. |
| | Auto Provision Devices | If selected, all mobile devices discovered in the next scan are added to inventory.<br>**NOTE:** Use this option with care, to avoid expanding your inventory to an unexpected extent. |
| **G Suite** | | Working with G Suite devices requires credentials that grant the appliance access to a Google Apps Domain using the Admin SDK API. You must obtain a Client ID and a Client Secret from Google so that you can get an approval code for the appliance to use. |
| | Discover Chrome Devices | If selected, any Chrome devices will be discovered in the next scan. |
| | Discover Mobile Devices | If selected, any G Suite mobile devices will be discovered in the next scan. |
| | Credentials | The details of the account that is used to connect to the Chrome device. Select an existing credential from the drop-down list, or select **Add new credential** to add a new credential, as required. The selected credential must have an approval code that can be |

| Option | Item | Description |
|---|---|---|
| | | associated with the appropriate device type. For example, if you want to discover G Suite mobile devices, you cannot use a credential whose approval code is generated for Chrome devices.<br>For more information, see Add and edit Google Workspace credentials. |
| | Auto Provision Devices | If selected, all Chrome and mobile devices discovered in the next scan are added to inventory.<br>**NOTE:** Use this option with care, to avoid expanding your inventory to an unexpected extent. |
| **Workspace ONE** | | VMware® Workspace ONE® is an enterprise-level mobility management platform that allows you to manage a wide range of different device types. |
| | Host | The host name of the Workspace ONE administration console. |
| | REST API Key | The REST API key, available in the Workspace ONE administration console. The key must be provided to enable integration with Workspace ONE through API calls. |
| | Credentials | The details of the service account required to connect to the device and run commands. Select an existing credential from the drop-down list, or select **Add new credential** to add a new credential, as required.<br>See Add and edit User/Password credentials. |
| | Auto Provision Devices | If selected, all Workspace ONE devices discovered in the next scan are added to inventory.<br>**NOTE:** Use this option with care, to avoid expanding your inventory to an unexpected extent. |
| **WinRM, Hyper-V, VMM** | | WinRM is the connection type to use for Windows devices. |
| | Timeout | The time, in seconds, up to 1 minute, after which the connection is closed if there is no activity. |
| | Require Kerberos | If selected, Kerberos is required for authentication. NTLM will not be used as an alternative when Kerberos is unavailable.<br>Using Kerberos requires DNS Lookup to be enabled in the same discovery configuration. The DNS Server is also required in the local appliance network settings. |
| | Scan for Hyper-V and Virtual Machine Manager | If selected, the appliance imports a Microsoft Hyper-V or System Center Virtual Machine Manager infrastructure using agentless management. For more information about this feature, see Add a Discovery Schedule for a Microsoft Hyper-V or System Center Virtual Machine Manager. |
| | Port | If this field is left blank, the default port 5985 is used. |

| Option | Item | Description |
|---|---|---|
| | Credentials | The details of the service account required to connect to the device and run commands. Select an existing credential from the drop-down list, or select **Add new credential** to add a new credential, as required.<br>See Add and edit User/Password credentials. |
| **SNMP** | | SNMP (Simple Network Management Protocol) is a protocol for monitoring managed devices on a network. |
| | SNMP Full Walk | Enable a Full Walk of data in the MIB (management information base) on devices. If this option is cleared, the appliance does a Bulk GET, which searches three core OIDs (object identifiers). When selecting this option, be aware that a Full Walk can take up to 20 minutes per device. The default, Bulk GET, takes approximately one second and acquires all of the information needed for Discovery.<br>**IMPORTANT: SNMP inventory walk does not support non-English characters on Windows devices. If it encounters non-English characters, the SNMP inventory process reports an error and stops loading inventory information.** |
| | Timeout | The time, in seconds, after which the scan ends if no response is returned. |
| | Maximum Attempts | The number of times the connection is attempted. |
| | Credentials(SNMPv1/v2) | The details of the SNMP v1/v2 credentials required to connect to the device and run commands. Select an existing credential from the drop-down list, or select **Add new credential** to add a new credential, as required.<br>See Add and edit SNMP credentials. |
| | Credentials(SNMPv3) | The details of the SNMP v3 credentials required to connect to the device and run commands. Select an existing credential from the drop-down list, or select **Add new credential** to add a new credential, as required.<br>See Add and edit SNMP credentials. |
| **SSH** | | Use the SSH protocol with authentication.<br>**IMPORTANT: Discovery though SSH is not supported for Windows devices.**<br>**IMPORTANT: After a Discovery Schedule is saved, you cannot change SSH to SNMP authentication.** |
| | Timeout | The time, up to 5 minutes, after which the connection is closed if there is no activity. |
| | Try SSH2 Connection | Enable the SSH2 protocol for connecting to and communicating with devices. |

| Option | Item | Description |
|---|---|---|
| | | Use SSH2 if you want device communications to be more secure (recommended). |
| | Credentials | The details of the service account required to connect to the device and run commands. Select an existing credential from the drop-down list, or select **Add new credential** to add a new credential, as required.<br>See Add and edit User/Password credentials. |
| **VMware** | Timeout | The time after which the scan ends if no response is returned. |
| | Credentials | The details of the service account required to connect to the device and run commands. Select an existing credential from the drop-down list, or select **Add new credential** to add a new credential, as required.<br>See Add and edit User/Password credentials. |
| **Nmap** | | **NOTE:** Running more than one of the four Nmap discovery types at a time, although possible, is not recommended. It can extend the length of a run and can cause erratic OS detection results. |
| | Timeout | The time after which the scan ends if no response is returned. |
| | Fast Scan | Enable the appliance to quickly scan 100 commonly used ports. If this option is cleared, all available TCP ports are scanned, which can take much longer than the fast scan. |
| | Nmap Operating System Detection (Best Guess) | Enable the appliance to detect the operating system of the device based on fingerprinting and port information. This option might increase the time required for the scan. |
| | TCP Port Scan | Enable a port scan using TCP (Transmission Control Protocol) of 1000 commonly used TCP ports. If this option is cleared, and UDP is selected, the appliance performs a UDP scan. If both TCP and UDP are cleared, the appliance uses a TCP scan.<br>If you select this option, Quest recommends that you set the *Timeout* value to 10 minutes to decrease the likelihood of erroneous results.<br>Do not combine this scan with the *Fast Scan* option. Doing so results in only 100 commonly used ports being scanned. |
| | UDP Port Scan | Enable a port scan using UDP (User Datagram Protocol) of up to 1000 UDP ports. UDP scans are generally less reliable, and have lower processor overhead, than TCP scans because TCP requires a handshake when communicating with devices whereas UDP does not. However, UDP scans might take longer than TCP scans, because UDP sends multiple packets to detect ports, whereas TCP sends a single packet.<br>If you select this option, Quest recommends that you set the *Timeout* value to 30 minutes to decrease the likelihood of erroneous results. |

| Option | Item | Description |
|---|---|---|
| | | Do not combine this scan with the *Fast Scan* option. Doing so results in only 100 commonly used ports being scanned.<br>If this option is cleared, the appliance does not scan ports using UDP. |

6. **Optional**: Enter an email address for being notified of when the discovery scan completes. The email includes the name of the discovery schedule.
7. Specify the scan schedule:

**TIP:** To maintain the scan inventory without scanning, set the schedule of the scan configuration to **None**.

| Option | Description |
|---|---|
| **None** | Run in combination with an event rather than on a specific date or at a specific time. |
| **Every n hours** | Run at a specified interval. |
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |
| **Run on the nth of every month/ specific month at HH:MM** | Run on the same day every month, or a specific month, at the specified time. |
| **Run on the nth weekday of every month/specific month at HH:MM** | Run on the specific weekday of every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>`* * * * *`<br>`\| \| \| \| +----------day of week (0-6)(Sun=0)`<br>`\| \| \| +----------month (1-12)`<br>`\| \| +----------day of month (1-31)`<br>`\| +----------hour (0-23)`<br>`+----------minute (0-59)`<br>Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (/)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3. |

| Option | Description |
|---|---|
| | Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |
| **View Task Schedule** | Click to view the task schedule. The *Task Schedule* dialog box displays a list of scheduled tasks. Click a task to review the task details. For more information, see View task schedules. |

8. Click **Save**.

**Related topics**

About Discovery Results

View and search Discovery Results

Stop a running discovery scan

Delete Discovery Schedules

## *Things to take into consideration with Nmap discovery*

For successful outcomes with Nmap discovery, there are some issues to consider and best practices to adopt to improve speed and accuracy and to avoid problems.

### Best practices for improving the speed and accuracy of discovery

To improve the speed and accuracy of Nmap discovery:

- **Avoid using DNS Lookup**. *DNS Lookup* can slow down scan times by up to 500 percent if you specify an invalid or unreachable IP address for the DNS.
- **Run one discovery type at a time**. Although it is possible to run multiple discovery types simultaneously, doing so can extend the length of a run and can cause erratic OS detection results.
- **Select Nmap Operating System Detection (Best Guess) if you are unsure what to run**. This selection can give you a reasonable view into your subnet or subnets. At a minimum, using Best Guess can identify what OSs are on what devices. If you do not get the expected results, for example if some devices appear with *unknown* as the *Operating System*, try increasing the timeout value and rerunning the discovery.
- **Discovery does not work correctly through a VPN**. Use another source for access to the devices.

### Issues that can impede discovery

Be aware that devices that are offline or otherwise inaccessible at the time of a scan are ignored because they appear to be nonexistent.

If you know that there are devices that should be reported, but are not, they are either:

- Being blocked by a firewall
- Actively blocking pings
- Actually offline (no power)
- Thwarting fingerprinting, through various methods.

Some devices, typically security devices, hide themselves from view, or misrepresent themselves to avoid detection.

### Troubleshooting unknown operating systems

If the *Operating System* appears as *unknown* in the *Discovery Results* list page:

- Check to see if the Nmap checkmark is present in the *Nmap* column. If not, the device was offline during the scan, and the operating system could not be determined.
- If the Nmap checkmark is present, but the *Operating System* is unknown, the most likely cause is a firewall that is blocking the ports that Nmap is using to determine what OS is running on the device.

  For example, if you scan using only UDP ports 7 and 161, the device appears online with the Nmap checkmark displayed. However, the *Operating System* appears *unknown*, because UDP ports alone are not sufficient to determine what OS is running on the device.

# Add a Discovery Schedule for a thorough scan of managed Windows, Mac, Linux, and UNIX computers

To scan your network for devices and capture information about devices, you use Discovery Schedules. After devices are discovered using the Active Directory or Authenticated discovery type, you can add those discovered devices to inventory.

1. Go to the *Discovery Schedule Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **Discovery Schedules**.
   c. Select **Choose Action > New**.
2. Select the *Discovery Type* to display the form with the options for the selected type.

   **Depending on the type you select, the following options appear before the *Notify* section:**

   - **Active Directory**. *DNS Lookup* and *Active Directory* discovery options appear.
   - **Authenticated [WinRM, SNMP, SSH, VMware, Hyper-V]**. *DNS Lookup*, *Relay*, *WinRM, Hyper-V, VMM*, *SNMP*, *SSH*, and *VMware* discovery options appear.
3. In the *Name* field, enter a name for the scan.

   **This name appears on the *Discovery Schedules* page.**
4. In the *IP Address Range* field, do one of the following:
   - **If you select the *Active Directory* Discovery Type, enter the IP address of the Active Directory server to be scanned.**
   - **Enter an IP address range to scan. Use hyphens to specify individual IP address class ranges.For example, type 192.168.2-5.1-200 to scan for all IP addresses between 192.168.2-5.1 and 192.168.2-5.200, inclusive.**

   **TIP:** The appliance supports both IPv6 (Internet Protocol version 6) and IPv4 addresses.

   **CAUTION: A maximum of 25,000 IP addresses is supported. If you specify an IP range that results in more than 25,000 addresses, a warning appears when you attempt to save the provisioning schedule.**
5. Select the Discovery options. The options that appear depend on the Discovery Type you have chosen:

| Option | Item | Description |
|---|---|---|
| **DNS Lookup** | | Enable Discovery to identify the name of the device. DNS Lookup is important if you want device names to appear in the Discovery Results and Inventory lists. You can select the DNS Lookup options for each Discovery type. |
| | Name Server for Lookup | The hostname or IP address of the name server.<br>**TIP:** The appliance supports both IPv6 (Internet Protocol version 6) and IPv4 addresses. |
| | Timeout | The time, in seconds, after which a DNS lookup expires. If an address is not found during this time, the process “times out.” |
| **Relay** | | Enable a KACE Agent to act as a tunnel WinRM, SSH and SNMP traffic to the agent connection protocol for WinRM, SSH and SNMP discovery schedules, agentless inventory, and agent provisioning. |
| | Relay Device | Specify the device that you want to use as a relay for agentless device inventory.<br>A relay device that is used during discovery as a relay is used for agentless inventory, when a new device is provisioned automatically from discovery results.<br>Selected relay devices are listed on the following pages:<br>• On the *Agentless Device Connection Details* page, when a new device is provisioned automatically from discovery results. For more information about this page, see Enable Agentless management by entering device information manually.<br>• On the *Provisioning Schedule Detail* page, when agent provisioning is initiated from discovery results. For more information, see Install the KACE Agent on a device or multiple devices.<br>• On the *Agentless Device Connection Details* page, when a new device is provisioned automatically from discovery results. For more information about this page, see Enable Agentless management by entering device information manually. |
| **Active Directory** | | Enable the appliance to check for device information on an Active Directory server. During Active Directory scans, the status is indicated as an approximate percentage instead of the number of devices scanned. |
| | Use Secure LDAP (LDAPS) | Enable the appliance to use a secure port for LDAP communication. |
| | Privileged User | The username of the administrator account on the Active Directory server. For example, username@example.com. |
| | Privileged User Password | The password of the administrator account on the Active Directory server. |
| | Search Context | The criteria used to search for devices. This criteria specifies a location or container in the Active Directory structure to be searched. Enter the most |

| Option | Item | Description |
|---|---|---|
| | | specific combination of OUs, DCs, or CNs that match your criteria, ranging from left (most specific) to right (most general). For example:<br>`DC=company,DC=com`. |
| **WinRM, Hyper-V, VMM** | | WinRM is the connection type to use for Windows devices. |
| | Timeout | The time, in seconds, up to 1 minute, after which the connection is closed if there is no activity. |
| | Require Kerberos | If selected, Kerberos is required for authentication. NTLM will not be used as an alternative when Kerberos is unavailable.<br>Using Kerberos requires DNS Lookup to be enabled in the same discovery configuration. The DNS Server is also required in the local appliance network settings. |
| | Scan for Hyper-V and Virtual Machine Manager | This field is only used if you want to monitor a a Microsoft Hyper-V or System Center Virtual Machine Manager infrastructure. Ensure this option is cleared. For more information about this feature, see Add a Discovery Schedule for a Microsoft Hyper-V or System Center Virtual Machine Manager. |
| | Port | If this field is left blank, the default port 5985 is used. |
| | Credentials | The details of the service account required to connect to the device and run commands. Select existing credentials from the drop-down list, or select **Add new credential** to add credentials not already listed.<br>See Add and edit User/Password credentials. |
| **SSH** | | Use the SSH protocol with authentication.<br>**IMPORTANT: Discovery though SSH is not supported for Windows devices.**<br>**NOTE:** After a Discovery Schedule is saved, you cannot change SSH to SNMP authentication. |
| | Timeout | The time, up to 5 minutes, after which the connection is closed if there is no activity. |
| | Try SSH2 Connection | Enable the SSH2 protocol for connecting to and communicating with devices.<br>Use SSH2 if you want device communications to be more secure (recommended). |
| | Credentials | The details of the service account required to connect to the device and run commands. Select existing credentials from the drop-down list, or select **Add new credential** to add credentials not already listed. |

| Option | Item | Description |
|---|---|---|
| | | See Add and edit User/Password credentials. |

6. **Optional**: Enter an email address for being notified of when the discovery scan completes. The email includes the name of the discovery schedule.
7. Specify the scan schedule:

**TIP:** To maintain the scan inventory without scanning, set the schedule of the scan configuration to **None**.

| Option | Description |
|---|---|
| **None** | Run in combination with an event rather than on a specific date or at a specific time. |
| **Every n hours** | Run at a specified interval. |
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |
| **Run on the nth of every month/ specific month at HH:MM** | Run on the same day every month, or a specific month, at the specified time. |
| **Run on the nth weekday of every month/specific month at HH:MM** | Run on the specific weekday of every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>`* * * * *`<br>`\| \| \| \| +———————day of week (0-6)(Sun=0)`<br>`\| \| \| +———————month (1-12)`<br>`\| \| +———————day of month (1-31)`<br>`\| +———————hour (0-23)`<br>`+———————minute (0-59)`<br>Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (/)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3. |

| Option | Description |
|---|---|
| | Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |
| **View Task Schedule** | Click to view the task schedule. The *Task Schedule* dialog box displays a list of scheduled tasks. Click a task to review the task details. For more information, see View task schedules. |

8. Click **Save**.

**Related topics**

About Discovery Results

View and search Discovery Results

Stop a running discovery scan

Delete Discovery Schedules

# Obtain a Client ID and Client Secret for use in discovering Chrome devices

Working with Chrome devices requires credentials that grant the appliance access to a Google Apps Domain using the Admin SDK API. You must obtain a Client ID and a Client Secret from Google so that you can get an approval code for the appliance to use.

- You have a Google Apps for Business domain or Google Apps for Education domain, with Chrome Device Management support.
- You have a Google User admin account that is a member of the business or education domain. The account must be assigned the super user role.
- You have a Google account that can be used as your developer account in this procedure. This account does not have to be the same as the admin account, nor does it have to be a member of the business or education domain.

The appliance is enabled to import device information about devices and users from a Google Apps Domain when the appliance has access to the Admin SDK API. Part of the credentialing process requires setting up a Google project, enabling the Admin SDK API from within it, and creating a Client ID and Client Secret.

1. Sign in to your developer account at https://console.developers.google.com/.
2. Create a project.
    a. Click **Projects** in the left navigation bar.
    b. Click **Create Project** to display the *New Project* dialog.
    c. Type a project name
    d. Use the auto-generated *Project ID* or type a unique ID of your choice.
    e. Click **Create**.

    **The** *Project Dashboard* **for the new project appears.**
3. Enable the Admin SDK API.
    a. Click **APIs & auth** in the left navigation bar to expand the section, and click **APIs**.

b. Find *Admin SDK* under *Browse APIs*, and click the **OFF** *Status* button on the far right of the line to toggle the status to **ON** and enable the API.
c. Read and agree to the terms of service and click **Accept**.

4. Create an OAuth Client ID and Client Secret.

**NOTE:** Quest recommends that you create a separate Client ID for each appliance that is configured to discover Chrome devices.

a. In the **APIs & auth** section of the left navigation bar, click **Credentials**.
b. In the *OAuth* section, click **Create new Client ID** to display the *Create Client ID* dialog.
c. Click **Configure consent screen** to display the *Consent screen* dialog.
d. Select your email from the *EMAIL ADDRESS* drop-down list, type the name of your product in *PRODUCT NAME*, and click **Save** to return to the *Create Client ID* dialog.
e. Select **Installed application**.
f. Select **Other** as the *Installed Application Type*, and click **Create Client ID**.

**The** *Credentials* **page displays the created** *Client ID* **and** *Client Secret***.**

g. Make note of the Client ID and Client Secret values.

**The values are needed when you configure authorization credentials in the appliance for Chrome device discovery.**

Add a Third Party Discovery Schedule to scan your network for G Suite devices and capture information about those devices. See Add a Discovery Schedule for a G Suite device.

# Add a Discovery Schedule for a KACE Cloud Mobile Device Manager device

If you use the KACE Cloud Mobile Device Manager (MDM) to manage access to smart phones and tablets, you can discover managed mobile devices using discovery scheduling. To scan your network for KACE Cloud MDM devices and capture information about those devices, add an External Integration Discovery Schedule.

**NOTE:** Any KACE Cloud MDM devices discovered using this method do not count toward the appliance license limit.

1. Go to the *Discovery Schedule Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **Discovery Schedules**.
   c. Select **Choose Action > New**.
2. Select the *Discovery Type* to display the form with the options for the selected type, in this case *External Integration [KACE Cloud Mobile Device Manager, G Suite, Workspace ONE]*.
3. In the *Name* field, enter a name for the scan.

   **This name appears on the** *Discovery Schedules* **page.**
4. Expand *KACE Cloud Mobile Device Manager* and select the Discovery options.

| Option | Description |
|---|---|
| **Tenant Name** | The name of the tenant on the KACE Cloud MDM associated with the devices that you want to manage. |
| **Credentials** | The details of the account that is used to connect to the KACE Cloud MDM device. Select an existing credential from the drop-down list, or select **Add new credential** to add a new credential, as required. |

| Option | Description |
|---|---|
| | For more information, see Add and edit Secret Key credentials. |
| **Auto Provision Devices** | If selected, all mobile devices discovered in the next scan are added to inventory.<br>**NOTE:** Use this option with care, to avoid expanding your inventory to an unexpected extent. |

5. **Optional**: In the *Notify* section, enter an email address for being notified of when the discovery scan completes. The email includes the name of the discovery schedule.
6. Specify the scan schedule:

**TIP:** To maintain the scan inventory without scanning, set the schedule of the scan configuration to **None**.

| Option | Description |
|---|---|
| **None** | Run in combination with an event rather than on a specific date or at a specific time. |
| **Every n hours** | Run at a specified interval. |
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |
| **Run on the nth of every month/ specific month at HH:MM** | Run on the same day every month, or a specific month, at the specified time. |
| **Run on the nth weekday of every month/specific month at HH:MM** | Run on the specific weekday of every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>`* * * * *`<br>`\| \| \| \| +----------day of week (0-6)(Sun=0)`<br>`\| \| \| +----------month (1-12)`<br>`\| \| +----------day of month (1-31)`<br>`\| +----------hour (0-23)`<br>`+----------minute (0-59)` |

| Option | Description |
|---|---|
| | Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (/)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3.<br>Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |
| **View Task Schedule** | Click to view the task schedule. The *Task Schedule* dialog box displays a list of scheduled tasks. Click a task to review the task details. For more information, see View task schedules. |

7. Click **Save**.

**Related topics**

About Discovery Results

View and search Discovery Results

Stop a running discovery scan

Delete Discovery Schedules

# Add a Discovery Schedule for a G Suite device

To scan your network for G Suite devices and capture information about those devices, add an External Integration Schedule.

- You have a Google Apps for Business domain or Google Apps for Education domain, with Chrome Device Management support.
- You have a Google User admin account that is a member of the business or education domain. The account must be assigned the super user role.
- You have a Google account to be used as your developer account, and have created a project with a Client ID and Client Secret. See Obtain a Client ID and Client Secret for use in discovering Chrome devices.

**NOTE:** Any G Suite devices discovered using this method do not count toward the appliance license limit.

1. Go to the *Discovery Schedule Detail* page:

a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
b. On the left navigation bar, click **Inventory**, then click **Discovery Schedules**.
c. Select **Choose Action > New**.

2. Select the *Discovery Type* to display the form with the options for the selected type, in this case *External Integration [KACE Cloud Mobile Device Manager, G Suite, Workspace ONE]*.
3. In the *Name* field, enter a name for the scan.

   **This name appears on the *Discovery Schedules* page.**
4. Expand *G Suite* and select the Discovery options.

| Option | Description |
|---|---|
| **Discover Chrome Devices** | If selected, any Chrome devices will be discovered in the next scan. |
| **Discover Mobile Devices** | If selected, any G Suite mobile devices will be discovered in the next scan. |
| **Credentials** | The details of the account that is used to connect to the Chrome device. Select existing credentials from the drop-down list, or select **Add new credential** to add credentials not already listed.<br>**IMPORTANT: The selected credential must have an approval code that can be associated with the appropriate device type. For example, if you want to discover G Suite mobile devices, you cannot use a credential whose approval code is generated for Chrome devices.**<br>For more information, see Add and edit Google Workspace credentials. |
| **Auto Provision Devices** | If selected, all Chrome devices discovered in the next scan are added to inventory.<br>**NOTE:** Use this option with care, to avoid expanding your inventory to an unexpected extent. |

5. **Optional**: In the *Notify* section, enter an email address for being notified of when the discovery scan completes. The email includes the name of the discovery schedule.
6. Specify the scan schedule:

   **TIP:** To maintain the scan inventory without scanning, set the schedule of the scan configuration to **None**.

| Option | Description |
|---|---|
| **None** | Run in combination with an event rather than on a specific date or at a specific time. |
| **Every n hours** | Run at a specified interval. |
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |
| **Run on the nth of every month/ specific month at HH:MM** | Run on the same day every month, or a specific month, at the specified time. |

| Option | Description |
|---|---|
| **Run on the nth weekday of every month/specific month at HH:MM** | Run on the specific weekday of every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>`* * * * *`<br>`\| \| \| \| +----------day of week (0-6)(Sun=0)`<br>`\| \| \| +----------month (1-12)`<br>`\| \| +----------day of month (1-31)`<br>`\| +----------hour (0-23)`<br>`+----------minute (0-59)`<br>Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (/)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3.<br>Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |
| **View Task Schedule** | Click to view the task schedule. The *Task Schedule* dialog box displays a list of scheduled tasks. Click a task to review the task details. For more information, see View task schedules. |

7. Click **Save**.

**Related topics**

About Discovery Results

View and search Discovery Results

Stop a running discovery scan

Delete Discovery Schedules

# Add a Discovery Schedule for an Workspace ONE device

VMware® Workspace ONE® is an enterprise-level mobility management platform that allows you to manage a wide range of different device types. You can integrate with Workspace ONE to collect discover devices managed with Workspace ONE using REST API calls.

**NOTE:** Any Workspace ONE devices discovered using this method do not count toward the appliance license limit.

1. Go to the *Discovery Schedule Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Discovery Schedules**.
    c. Select **Choose Action > New**.
2. Select the *Discovery Type* to display the form with the options for the selected type, in this case *External Integration [KACE Cloud Mobile Device Manager, G Suite, Workspace ONE]*.
3. In the *Name* field, enter a name for the scan.

    **This name appears on the *Discovery Schedules* page.**
4. Expand *Workspace ONE* and select the Discovery options.

| Option | Description |
|---|---|
| **Host** | The host name of the Workspace ONE administration console. |
| **REST API Key** | The REST API key, available in the Workspace ONE administration console. The key must be provided to enable integration with Workspace ONE through API calls. |
| **Credentials** | The details of the service account required to connect to the device and run commands. Select existing credentials from the drop-down list, or select **Add new credential** to add credentials not already listed.<br>See Add and edit User/Password credentials. |
| **Auto Provision Devices** | If selected, all Workspace ONE devices discovered in the next scan are added to inventory.<br>**NOTE:** Use this option with care, to avoid expanding your inventory to an unexpected extent. |

5. **Optional**: In the *Notify* section, enter an email address for being notified of when the discovery scan completes. The email includes the name of the discovery schedule.
6. Specify the scan schedule:

    **TIP:** To maintain the scan inventory without scanning, set the schedule of the scan configuration to **None**.

| Option | Description |
|---|---|
| **None** | Run in combination with an event rather than on a specific date or at a specific time. |
| **Every n hours** | Run at a specified interval. |
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |

| Option | Description |
|---|---|
| **Run on the nth of every month/ specific month at HH:MM** | Run on the same day every month, or a specific month, at the specified time. |
| **Run on the nth weekday of every month/specific month at HH:MM** | Run on the specific weekday of every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>`* * * * *`<br>`\| \| \| \| +————————day of week (0-6)(Sun=0)`<br>`\| \| \| +————————month (1-12)`<br>`\| \| +————————day of month (1-31)`<br>`\| +————————hour (0-23)`<br>`+————————minute (0-59)`<br>Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (*/*)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3.<br>Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |
| **View Task Schedule** | Click to view the task schedule. The *Task Schedule* dialog box displays a list of scheduled tasks. Click a task to review the task details. For more information, see View task schedules. |

7. Click **Save**.

**Related topics**

About Discovery Results

View and search Discovery Results

Stop a running discovery scan

Delete Discovery Schedules

# Add a Discovery Schedule for a VMware ESXi host or a vCenter Server

If your business uses a virtual VMware-based environment, you can discover VMware ESXi hosts or vCenter Servers using discovery scheduling. To scan your network for VMware ESXi hosts or vCenter Servers and capture information about those devices, add an Authenticated Discovery Schedule.

**A provisioned VMware ESXi host consumes an Agent-based license. Virtual machines associated with that host do not consume any licenses. The vCenter in which the ESXi host is running does not consume a license. It acts as a bridge to connect to provisioned ESXi hosts.**

1. Go to the *Discovery Schedule Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Discovery Schedules**.
    c. Select **Choose Action** > **New**.
2. Select the *Discovery Type* to display the form with the options for the selected type, in this case *Authenticated [WinRM, SNMP, SSH, VMware, Hyper-V]*.
3. In the *Name* field, enter a name for the scan.

    **This name appears on the** *Discovery Schedules* **page.**
4. Expand the *VMware* section and configure the Discovery options.

| Option | Description |
|---|---|
| **Timeout** | The time after which the scan ends if no response is returned. |
| **Credentials** | The details of the service account required to connect to the device and run commands. Select existing credentials from the drop-down list, or select **Add new credential** to add credentials not already listed.<br>See Add and edit User/Password credentials. |

5. **Optional**: In the *Notify* section, enter an email address for being notified of when the discovery scan completes. The email includes the name of the discovery schedule.
6. Specify the scan schedule:

    **TIP:** To maintain the scan inventory without scanning, set the schedule of the scan configuration to **None**.

| Option | Description |
|---|---|
| **None** | Run in combination with an event rather than on a specific date or at a specific time. |
| **Every n hours** | Run at a specified interval. |
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |
| **Run on the nth of every month/ specific month at HH:MM** | Run on the same day every month, or a specific month, at the specified time. |

| Option | Description |
|---|---|
| **Run on the nth weekday of every month/specific month at HH:MM** | Run on the specific weekday of every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>`* * * * *`<br>`\| \| \| \| +----------day of week (0-6)(Sun=0)`<br>`\| \| \| +----------month (1-12)`<br>`\| \| +----------day of month (1-31)`<br>`\| +----------hour (0-23)`<br>`+----------minute (0-59)`<br>Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (/)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3.<br>Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |
| **View Task Schedule** | Click to view the task schedule. The *Task Schedule* dialog box displays a list of scheduled tasks. Click a task to review the task details. For more information, see View task schedules. |

7. Click **Save**.

**Related topics**

About Discovery Results

View and search Discovery Results

Stop a running discovery scan

Delete Discovery Schedules

# Add a Discovery Schedule for a Microsoft Hyper-V or System Center Virtual Machine Manager

If your business uses a virtual Hyper-V-based environment, you can discover Microsoft Hyper-V or System Center Virtual Machine Manager (SCVMM) devices using discovery scheduling. To scan your network for Hyper-V or SCVMM devices, and to capture information about those devices, add an Authenticated Discovery Schedule.

The devices imported into the appliance using this method do not consume any licenses. Each SCVMM and Hyper-V device consumes only an agentless license used to inventory the underlying Windows systems. SCVMM and Hyper-V devices that are also provisioned with the KACE Agent each consume two licenses.

1. Go to the *Discovery Schedule Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Discovery Schedules**.
    c. Select **Choose Action > New**.
2. Select the *Discovery Type* to display the form with the options for the selected type, in this case *Authenticated [WinRM, SNMP, SSH, VMware, Hyper-V]*.
3. In the *Name* field, enter a name for the scan.

    **This name appears on the *Discovery Schedules* page.**
4. Expand the *WinRM, Hyper-V, VMM* section and configure the Discovery options.

| Option | Description |
|---|---|
| **Timeout** | The time, in seconds, up to 1 minute, after which the connection is closed if there is no activity. |
| **Require Kerberos** | If selected, Kerberos is required for authentication. NTLM will not be used as an alternative when Kerberos is unavailable.<br>Using Kerberos requires DNS Lookup to be enabled in the same discovery configuration. The DNS Server is also required in the local appliance network settings. |
| **Scan for Hyper-V and Virtual Machine Manager** | Select this option to allow the appliance to import a Microsoft Hyper-V or System Center Virtual Machine Manager infrastructure using agentless management. For more information about this feature, see Add a Discovery Schedule for a Microsoft Hyper-V or System Center Virtual Machine Manager. |
| **Port** | If this field is left blank, the default port 5985 is used. |
| **Credentials** | The details of the service account required to connect to the device and run commands. Select an existing credential from the drop-down list, or select **Add new credential** to add a new credential, as required.<br>See Add and edit User/Password credentials.<br>**NOTE:** The same credentials specified for a SCVMM device are used to connect to each managed Hyper-V device. For more information, see System Center Virtual Machine Manager Credential Requirements. |

5. **Optional**: In the *Notify* section, enter an email address for being notified of when the discovery scan completes. The email includes the name of the discovery schedule.
6. Specify the scan schedule:

**TIP:** To maintain the scan inventory without scanning, set the schedule of the scan configuration to **None**.

| Option | Description |
|---|---|
| **None** | Run in combination with an event rather than on a specific date or at a specific time. |
| **Every n hours** | Run at a specified interval. |
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |
| **Run on the nth of every month/ specific month at HH:MM** | Run on the same day every month, or a specific month, at the specified time. |
| **Run on the nth weekday of every month/specific month at HH:MM** | Run on the specific weekday of every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>`* * * * *`<br>`\| \| \| \| +----------day of week (0-6)(Sun=0)`<br>`\| \| \| +----------month (1-12)`<br>`\| \| +----------day of month (1-31)`<br>`\| +----------hour (0-23)`<br>`+----------minute (0-59)`<br>Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (/)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3.<br>Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |

| Option | Description |
|---|---|
| **View Task Schedule** | Click to view the task schedule. The *Task Schedule* dialog box displays a list of scheduled tasks. Click a task to review the task details. For more information, see View task schedules. |

7. Click **Save**.

**Related topics**

About Discovery Results

View and search Discovery Results

Stop a running discovery scan

Delete Discovery Schedules

# System Center Virtual Machine Manager Credential Requirements

The credentials used to inventory a System Center Virtual Machine Manager (SCVMM) device and all of its managed Hyper-V devices have specific requirements.

- The domain account must be a member of the SCVMM **Read-Only Administrator** profile or a profile with the same/greater privileges.
- The domain account must be a member of the local **Hyper-V Administrators** group on each Hyper-V device.
- The domain account must have permissions to perform Windows agentless inventory using WinRM on the SCVMM and Hyper-V devices.

# Add a Discovery Schedule for SNMP-enabled non-computer devices

To scan your network for non-computer devices and capture information about those devices, you can add an Authenticated—SNMP Discovery Schedule.

To enable SNMP, port 161 must be open on the appliance and on the device.

**SNMP (Simple Network Management Protocol) is a protocol for monitoring managed devices on a network. SNMP v3 uses authentication and encryption algorithms to increase the security of SNMP communications. When you configure the SNMP v3 options, the appliance performs an SNMP v3 scan on selected devices. If that scan fails, the appliance attempts an SNMP v2 or v1 scan using the specified Public String.**

SNMP scan results include all SNMP-capable devices. Remote shell extensions enable the appliance to connect to devices, run commands, and capture Discovery information.

**NOTE:** After a Discovery Schedule is saved, you cannot change SNMP to SSH authentication.

1. Go to the *Discovery Schedule Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Discovery Schedules**.

c. Select **Choose Action > New**.

2. Select the *Discovery Type* to display the form with the options for the selected type, in this case *Authenticated [WinRM, SNMP, SSH, VMware, Hyper-V]*.

**The following options appear before the *Notify* section:**

- *DNS Lookup*
- *Relay*
- *WinRM, Hyper-V, VMM*
- *SSH*
- *SNMP*

For this procedure only *DNS Lookup* and *SNMP* are pertinent

3. In the *Name* field, enter a name for the scan.

**This name appears on the *Discovery Schedules* page.**

4. In the *IP Address Range* field, enter an IP address range to scan. Use hyphens to specify individual IP address class ranges. For example, type 192.168.2-5.1-200 to scan for all IP addresses between 192.168.2-5.1 and 192.168.2-5.200, inclusive.

**TIP:** The appliance supports both IPv6 (Internet Protocol version 6) and IPv4 addresses.

**CAUTION: A maximum of 25,000 IP addresses is supported. If you specify an IP range that results in more than 25,000 addresses, a warning appears when you attempt to save the provisioning schedule.**

5. Expand *DNS Lookup* and select the Discovery options.

Including DNS Lookup enables Discovery to identify the name of the device. DNS Lookup is important if you want device names to appear in the Discovery Results and Inventory lists.

| Option | Description |
|---|---|
| **Name Server for Lookup** | The hostname or IP address of the name server.<br>**TIP:** The appliance supports both IPv6 (Internet Protocol version 6) and IPv4 addresses. |
| **Timeout** | The time, in seconds, after which a DNS lookup expires. If an address is not found during this time, the process “times out.” |

6. Expand *Relay* and select the Discovery options.

Configuring the *Relay* options allows yout to configure a KACE Agent to act as a tunnel WinRM, SSH and SNMP traffic to the agent connection protocol for WinRM, SSH and SNMP discovery schedules, agentless inventory, and agent provisioning.

| Option | Description |
|---|---|
| **Relay Device** | Specify the device that you want to use as a relay for agentless device inventory.<br>A relay device that is used during discovery as a relay is used for agentless inventory, when a new device is provisioned automatically from discovery results.<br>Selected relay devices are listed on the following pages:<br>• On the *Agentless Device Connection Details* page, when a new device is provisioned automatically from discovery results. For more information about |

| Option | Description |
|---|---|
| | this page, see Enable Agentless management by entering device information manually.<br>• On the *Provisioning Schedule Detail* page, when agent provisioning is initiated from discovery results. For more information, see Install the KACE Agent on a device or multiple devices.<br>• On the *Agentless Device Connection Details* page, when a new device is provisioned automatically from discovery results. For more information about this page, see Enable Agentless management by entering device information manually. |

7. Expand *SNMP* and select the Discovery options.

| Option | Description |
|---|---|
| **SNMP Full Walk** | Enable a Full Walk of data in the MIB (management information base) on devices. If this option is cleared, the appliance does a Bulk GET, which searches three core OIDs (object identifiers). When selecting this option, be aware that a Full Walk can take up to 20 minutes per device. The default, Bulk GET, takes approximately one second and acquires all of the information needed for Discovery.<br>**NOTE:** SNMP inventory walk does not support non-English characters on Windows devices. If it encounters non-English characters, the SNMP inventory process reports an error and stops loading inventory information. |
| **Timeout** | The time, in seconds, after which the scan ends if no response is returned. |
| **Maximum Attempts** | The number of times the connection is attempted. |
| **Credentials (SNMPv1/v2)** | The details of the SNMP v1/v2 credentials required to connect to the device and run commands. Select existing credentials from the drop-down list, or select **Add new credential** to add credentials not already listed.<br>See Add and edit SNMP credentials. |
| **Credentials (SNMPv3)** | The details of the SNMP v3 credentials required to connect to the device and run commands. Select existing credentials from the drop-down list, or select **Add new credential** to add credentials not already listed.<br>See Add and edit SNMP credentials. |

8. **Optional**: In the *Notify* section, enter an email address for being notified of when the discovery scan completes. The email includes the name of the discovery schedule.
9. Specify the scan schedule:

**TIP:** To maintain the scan inventory without scanning, set the schedule of the scan configuration to **None**.

| Option | Description |
|---|---|
| **None** | Run in combination with an event rather than on a specific date or at a specific time. |
| **Every n hours** | Run at a specified interval. |
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |

| Option | Description |
|---|---|
| **Run on the nth of every month/ specific month at HH:MM** | Run on the same day every month, or a specific month, at the specified time. |
| **Run on the nth weekday of every month/specific month at HH:MM** | Run on the specific weekday of every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>`* * * * *`<br>`\| \| \| \| +----------day of week (0-6)(Sun=0)`<br>`\| \| \| +----------month (1-12)`<br>`\| \| +----------day of month (1-31)`<br>`\| +----------hour (0-23)`<br>`+----------minute (0-59)`<br>Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (*/*)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3.<br>Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |
| **View Task Schedule** | Click to view the task schedule. The *Task Schedule* dialog box displays a list of scheduled tasks. Click a task to review the task details. For more information, see View task schedules. |

10. Click **Save**.

**Related topics**

About Discovery Results

View and search Discovery Results

Stop a running discovery scan

Delete Discovery Schedules

# About Discovery Results

Discovery Results show information identified during Discovery Schedule scans.

If devices in inventory correspond to records in the Discovery Results, the devices' current connection status is displayed. The device name links to the *Inventory Detail* page for that device, and the *Device Action* drop-down list in the *DNS Lookup* column shows the available Device Actions.

**NOTE:** For information about browser requirements for Device Actions, go to https://support.quest.com/kb/148787.

Discovery Results are a "point-in-time" view, and any newly defined devices for management will reflect their state the next time discovery is run.

See Managing inventory information.

The results showing the IP address at the time of the scan might not reflect the current IP address of a given device if the DHCP-assigned IP address has changed.

# View and search Discovery Results

You can view and search Discovery Results for device information and for the properties of the scans used to discover devices.

1. Go to the *Discovery Results* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Discovery Results**.
2. To sort the list, do any of the following:
    - **Select Choose Action > Include Unreachable Items. The list displays devices that have a connection to the appliance and devices that cannot currently be reached.**
    - **In the *View By* drop-down list, select Discovery Name. The list is sorted to group according to the name of the Discovery Schedule under which they were discovered.**
3. To view device details, click the link in the *Hostname* or *IP Address [Labels]* column.
4. To search for devices:
    a. Click the **Advanced Search** tab above the list on the right to display the *Advanced Search* panel.
    b. Select search criteria:
    - Select an attribute in the left-most drop-down list. For example: **Device Info: Ping Test**.
    - Select a condition in the next drop-down list. For example: **has**.
    - Select the status attribute in the next drop-down list. For example: **Failed**.
    c. Click **Search**.

# Provision the Agent using the discovered IP address or hostname

You can provision the Agent on devices using the IP address or hostname from the *Discovery Results* page.

After devices have been identified in Discovery Results, you can provision or install the Agent on those devices using the links on the *Discovery Results* page. This discovery identifies the devices to be provisioned at the outset, rather than requiring a scan during the provisioning phase to identify devices.

Provisioning the Agent is especially useful for Windows devices. Windows devices can be discovered, but there are few management options available to Windows devices unless the Agent is installed on those devices.

1. Go to the *Discovery Results* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Discovery Results**.
2. Select the check box next to one or more devices.
3. Select **Choose Action**, then do one of the following:
    - **Select Provision > Agent: IP Address.**
    - **Select Provision > Agent: Hostname.**

    **The *Provisioning Schedule Detail* page appears. Information about the selected devices appears on the page.**
4. Edit the provisioning options as needed.

**See Install the KACE Agent on a device or multiple devices.**

# Stop a running discovery scan

You can stop a running scan at any point in its progress.

You can stop a running discovery scan from either the *Discovery Schedules* list or from the *Discovery Schedule Detail* page. You can stop multiple scans from the *Discovery Schedules* list.

When you interrupt a scan with **Stop**, whatever devices in the IP range that has been scanned up to that point appear in *Discovery Results*.

1. Go to the *Discovery Schedules* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Discovery Schedules**.
2. Stop a running scan using one of two methods:
    - **Stop one or more running scans using the Choose Action menu.**
        1. Select the check box next to one or more schedules.
        2. Select **Choose ActionStop**, then click **Yes** to confirm.

        **NOTE:** If any of the selected schedules are not running, selecting **Stop** does not prevent the scan from running at its next scheduled time.
    - **Stop a running scan from its *Discovery Schedule Detail* page.**
        1. Click the Discovery Schedule in the *Name* column to display the *Discovery Schedule Detail* page.
        2. Scroll to the bottom of the page, click **Stop**, then click **Yes** to confirm.

        **NOTE:** When a scan is running, the **Stop** button takes the place of the **Run Now** button.

Scan activity stops for the designated Discovery Schedule. The *Progress* column on the *Discovery Schedules* list displays *Stopping* until the scan is fully stopped, at which point the progress status changes to *Stopped*.

## Delete Discovery Schedules

You can delete Discovery Schedules as needed. When Discovery Schedules are deleted, scan results related to those schedules are also deleted. Devices discovered using the schedules, and added to inventory, remain in inventory.

1. Go to the *Discovery Schedules* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Discovery Schedules**.
2. Select the check box next to one or more schedules.
3. Select **Choose Action** > **Delete**, then click **Yes** to confirm.

# Managing device inventory

You can use the appliance to manage devices. Devices managed by the appliance are referred to as device inventory.

# About managing devices

Managing devices is the process of using the appliance to collect and maintain information about devices on your network and performing tasks such as monitoring device status, creating reports, and so on.

To add devices to the appliance inventory, you can:

- **Install the KACE Agent on devices**. Devices are automatically added to inventory after the Agent is installed on them and the Agent reports inventory to the appliance. See Provisioning the KACE Agent.
- **Enable Agentless management for devices**. Agentless management is especially useful for devices that cannot have the KACE Agent installed, such as devices with unsupported operating systems. See Managing Agentless devices.
- **Upload inventory information for devices manually**. See Adding devices manually in the Administrator Console or by using the API.

**NOTE:** Your product license agreement entitles you to manage a specified number of devices that are classified as Managed Computers, Assets, and Monitored Servers. Devices count toward these limits even if such devices are MIA (missing in action) or no longer in use. However, devices that are added to inventory manually, or through the API, do not count toward license limits. See View product licensing information.

For information about the features available to devices, see Features available for each device management method.

# Features available for each device management method

Device management features vary, depending on the method used to manage the device and the device's operating system.

For Windows devices, installing the Agent provides a full range of features. For Linux® devices and devices that cannot have the Agent installed, such as printers and network devices, Agentless management is the recommended option.

The following table provides a high-level view of the components and features available to managed devices.

**NOTE:** Under *Agentless*, the *Non-Win* OSs are Mac OS X, CentOS™, Debian®, FreeBSD®, Oracle® Enterprise Linux, Red Hat Enterprise Linux, SUSE, Solaris®, and Ubuntu.

**Table 10. Features available to managed devices**

| Feature or component | Agent | Agentless | | | | | | | WSAPI manual |
|---|---|---|---|---|---|---|---|---|---|
| | Win, Mac, Linux | Win | Non-Win | G Suite Devices | KACE MDM | DMM | Workspace ONE | SNMP | |
| **Home** | | | | | | | | | |
| **Dashboard**: Includes device information where appropriate. See About Dashboards. | X | X | X | X | X | X | X | X | |
| **Label Management**: Labels can be assigned to devices. See About labels. | X | X | X | X | X | X | X | X | X |
| **Search**: Devices included in results. See Searching for information and filtering lists. | X | X | X | X | X | X | X | X | X |
| **Inventory** | | | | | | | | | |
| **Devices**: List includes devices. See Managing inventory information. | X | X | X | X | X | X | X | X | X |
| **Devices > Force Inventory**. See Forcing inventory updates. | X | X | X | X | X | X | X | X | |
| **Devices > MIA settings**. See Managing MIA devices. | X | X | X | X | X | X | X | X | |
| **Devices > Apply SNMP Configurations**. See Using SNMP Inventory Configurations to identify specific SNMP objects and non-computer devices to add to inventory. | | | | | | | | X | |
| **Software page**: List includes software from devices. See About the Software page. | X | X | X | X | X | X | X | | |

| Feature or component | Agent | Agentless | | | | | | | WSAPI manual |
|---|---|---|---|---|---|---|---|---|---|
| | Win, Mac, Linux | Win | Non-Win | G Suite Devices | KACE MDM | DMM | Workspace ONE | SNMP | |
| **Software Catalog page**: List includes software from devices. See Viewing Software Catalog information. | X<br>Windows and Mac only | | | | | | | | |
| **Metering**: Metering can be enabled for devices. See Using software metering. | X<br>Windows and Mac only | | | | | | | | |
| **Blocking software** (Mark Not Allowed): Software can be prevented from running on devices. See Using Application Control. | X<br>Windows and Mac only | | | | | | | | |
| **Processes**: Inventory available for devices. See Managing process inventory. | X | X | X | | | | | | |
| **Startup programs**: Inventory available for devices. See Managing startup program inventory. | X | X | X | | | | | | |
| **Services**: Inventory available for devices. See Managing service inventory. | X | X | | | | | | | |
| **Discovery Schedules**: Devices can be discovered. See About Device Discovery and device management. | X | X | X | X | X | X | X | X | X |
| **Discovery Results**: Devices can be provisioned from results list. See About Device Discovery and device management. | X | X | X | X | X | X | X | X | |
| **SNMP Inventory Configurations**: List of devices can be expanded. See Using SNMP Inventory Configurations to identify specific SNMP objects and non-computer devices to add to inventory. | | | | | | | | X | |

| Feature or component | Agent | Agentless | | | | | | | WSAPI manual |
|---|---|---|---|---|---|---|---|---|---|
| | Win, Mac, Linux | Win | Non-Win | G Suite Devices | KACE MDM | DMM | Workspace ONE | SNMP | |
| **Inventory**: Custom inventory rules. See Writing custom inventory rules. | X | | | | | | | | |
| **Monitoring** | | | | | | | | | |
| **Alerts**: Received alerts. See Working with alerts. | X | X | X | | | | | | |
| **Devices**: List includes devices with monitoring enabled. See Managing monitoring for devices. | X | X | X | | | | | | |
| **Profiles**: Alerts are defined through profiles. See Working with monitoring profiles. | X | X | X | | | | | | |
| **Maintenance Windows**: Can set regular schedule for pausing monitoring. See Schedule a Maintenance Window during which time alerts are not collected from a device. | X | X | X | | | | | | |
| **Log Enablement Packages**: These packages enable performance threshold monitoring and monitoring for applications such as Exchange, Internet Information Services (IIS), and so on. See Configuring application and threshold monitoring with Log Enablement Packages. | X | X | X | | | | | | |
| **Assets** | | | | | | | | | |
| **Assets**: Can be created for devices. See About managing assets. | X | X | X | X | X | X | X | X | X |
| **Asset Types**: Can be created for devices. See Adding and customizing Asset Types and maintaining asset information. | X | X | X | X | X | X | X | X | X |
| **Locations**: Can be defined for devices, users, and assets. See Managing locations. | X | X | X | X | X | X | X | X | X |

| Feature or component | Agent | Agentless | | | | | | WSAPI manual |
|---|---|---|---|---|---|---|---|---|
| | Win, Mac, Linux | Win | Non-Win | G Suite Devices | KACE MDM | DMM | Workspace ONE | SNMP | |
| **Import Assets**: Can be imported for devices. See Importing license data in CSV files. | X | | | | | | | | |
| **Distribution** | | | | | | | | | |
| **Managed Installations**: Can be used to install software on devices. See Using Managed Installations. | X | | | | | | | | |
| **File Synchronizations**: Can be used to manage files on devices. See Create and use File Synchronizations. | X | | | | | | | | |
| **Wake-on-LAN**: Available for devices with valid IP address and MAC address. See Using Wake-on-LAN. | X | X | X | | | | | X | |
| **Replication**: Can be used as replication shares. See Using Replication Shares. | X | | | | | | | | |
| **Alerts**: Can be broadcast to display on devices (different from server monitoring alerts). See Broadcasting alerts to managed devices. | X Windows and Mac only | | | | | | | | |
| **Scripting** | | | | | | | | | |
| **Run Now**: Can be used to run scripts on devices. See Using the Run and Run Now commands. | X | | | | | | | | |
| **Run Now Status**: Can be displayed for devices. See Monitor Run Now status and view script details. | X | | | | | | | | |
| **Search Scripting Logs**: Devices listed in results. See Search the scripting logs. | X | | | | | | | | |
| **Configuration Policies**: Can be used to configure devices. | X | | | | | | | | |

| Feature or component | Agent | Agentless | | | | | | | WSAPI manual |
|---|---|---|---|---|---|---|---|---|---|
| | Win, Mac, Linux | Win | Non-Win | G Suite Devices | KACE MDM | DMM | Workspace ONE | SNMP | |
| See About configuration policy templates. | Windows and Mac only | | | | | | | | |
| **Mac Profiles**: Can be used to configure user-level and system-level policies and settings on Mac OS X devices. See Managing Mac profiles. | X<br>Mac only | | | | | | | | |
| **Security** | | | | | | | | | |
| **Patch Management**: Can be used to patch devices. See About patch management. | X<br>Windows and Mac only | | | | | | | | |
| **OVAL Scans**: Devices included in tests. See About OVAL security checks. | X<br>Windows only | | | | | | | | |
| **SCAP scans**: Devices included in scans. See About SCAP. | X<br>Windows only | | | | | | | | |
| **Dell Updates**: Can be used to update devices. See Managing Dell devices and updates. | X<br>Windows only | | | | | | | | |
| **Service Desk** | | | | | | | | | |
| **Tickets**: Can be created and assigned to devices. See Creating tickets from the Administrator Console and User Console. | X | X | X | X | X | X | X | X | |
| **User Downloads**: Software can be downloaded from the User Console to devices. See Managing User Downloads. | X | | | | | | | | |
| **Knowledge Base**. See Managing Knowledge Base articles. | X | X | X | X | X | X | X | X | |
| **Announcements**: Can create announcements that appear on the User Console home page. | X | X | X | X | X | X | X | X | |

| Feature or component | Agent | Agentless | | | | | | | WSAPI manual |
|---|---|---|---|---|---|---|---|---|---|
| | Win, Mac, Linux | Win | Non-Win | G Suite Devices | KACE MDM | DMM | Workspace ONE | SNMP | |
| See Add, edit, hide, or delete User Console announcements. | | | | | | | | | |
| **Configuration**. See Setting up Service Desk. | X | X | X | X | X | X | X | X | |
| **Reporting** | | | | | | | | | |
| **Reports**: Device information available for reports. See Creating reports. | X | X | X | X | X | X | X | X | |
| **Report Schedules**: View report schedules that have been created. See Scheduling reports. | X | X | X | X | X | X | X | X | |
| **Notifications**: Devices can be included in notifications. See Scheduling notifications. | X | X | X | X | X | X | X | X | |
| **Settings: Control Panel** | | | | | | | | | |
| **Device Actions**: Actions can be performed on devices. See Run actions on devices. | X | X | X | | | | | X | |
| **License Usage Warning levels**: Available for applications on devices. See Assign threat levels to applications. | X | X | X | X | X | X | X | X | |
| **History**: Device information can be tracked. See Managing asset history. | X | X | X | X | X | X | X | X | |
| **Logs**: Device information available. See View appliance logs. | X | X | X | X | X | X | X | X | |
| **Backup and restore**: Device information included. See About appliance backups. | X | X | X | X | X | X | X | X | |
| **Organizations** | | | | | | | | | |

| Feature or component | Agent | Agentless | | | | | | | WSAPI manual |
|---|---|---|---|---|---|---|---|---|---|
| | Win, Mac, Linux | Win | Non-Win | G Suite Devices | KACE MDM | DMM | Workspace ONE | SNMP | |
| **Filters**: Organization filters can be assigned to devices. See Managing organization filters. | X | X | X | X | X | X | X | X | |
| **Redirect Devices**: Devices can be reassigned to organizations. See Redirect devices. | X | X | X | X | X | X | X | X | X |
| **Filtering Devices**: Devices can be filtered and reassigned to organizations. See Filter devices. | X | X | X | X | X | X | X | X | |
| **Organization settings**: Inventory intervals configurable. See Schedule inventory data collection for managed devices. | X | X | X | X | X | X | X | X | |

# About inventory information

Inventory includes information about the devices, applications, processes, startup programs, and services on managed devices on your network.

Inventory is:

- Collected by the KACE Agent, which is installed on managed devices
- Uploaded using the inventory API
- Obtained through connections to Agentless devices

You can view detailed data about individual managed devices, as well as aggregated data collected across all managed devices. In addition, you can use inventory information in reports, and in decisions about upgrades, troubleshooting, purchasing, policies, and so on.

This section focuses on device inventory. For information about other inventory items, see:

- Managing applications on the Software page
- Managing Software Catalog inventory
- Managing process, startup program, and service inventory

# Tracking changes to inventory settings

If History subscriptions are configured to retain information, you can view the details of the changes made to settings, assets, and objects.

This information includes the date the change was made and the user who made the change, which can be useful during troubleshooting. See About history settings.

### About inventory change history

Change history for devices begins when there is a change to the information collected during the first report.

The first time a managed device reports inventory to the appliance, the information is considered to be a baseline report. As such, it is not recorded in the change history.

# Managing inventory information

To manage inventory information, you can add custom data fields, view devices in inventory, and view device details.

## Add custom data fields

You can add custom data fields for applications added manually from the *Software* list.

Adding custom data fields enables you to obtain information from the registry and elsewhere on the device. This information can be viewed on the device detail page and used in reports.

For example, you might want to add custom fields to obtain the *DAT file version number* from the registry, the *file created date*, the *file publisher*, or other data for a device. You could then create labels based on this information to group similar devices, or create reports using this information.

1. Go to the *Software* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Software**.
2. Select **Choose Action > New**.
3. Enter values in the *Name*, *Version*, and *Publisher* fields.

    **This information is used to identify the custom data field on detail pages.**
4. In the *Custom Inventory Rule* field, enter the appropriate syntax for the information you want returned:
    - **To return a Registry Value, enter the following, replacing valueType with either `TEXT`, `NUMBER`, or `DATE`. `NUMBER` is an integer value: `RegistryValueReturn(string absPathToKey, string valueName, string` valueType`)`**

      **Example**: `RegistryValueReturn(HKEY_LOCAL_MACHINE\Software\McAfee.com \Virusscan Online,SourceDisk, TEXT)`
    - **On Windows, Mac, and Linux devices, you can retrieve the following attributes from the `stat()` function:**

      `access_time, creation_time, modification_time, block_size, blocks, size, device_id, group, inode, mode, number_links, owner, device_number`
    - **On Windows devices, you can retrieve the following attributes from the `VerQueryValue()` function:**

      `FileName, Comments, CompanyName, FileDescription, FileVersion, InternalName, LegalCopyright, LegalTrademarks, OriginalFilename, ProductName, ProductVersion, PrivateBuild, SpecialBuild, AccessedDate, CreatedDate, ModifiedDate`
5. Click **Save**.

See Writing custom inventory rules.

# Schedule inventory data collection for managed devices

The appliance collects hardware and software inventory data from Agent-managed and Agentless devices according to the appliance data collection schedule you set.

For Agent-managed devices, software inventory information is available on both the *Software* and *Software Catalog* pages. For more information about these pages, see Differences between the Software page and the Software Catalog page.

For Agentless devices, software information is listed only on the *Software* page. See Managing applications on the Software page.

If the Organization component is enabled on your appliance, you schedule inventory data collection for each organization separately.

1. Do one of the following:
   - **If the Organization component is enabled on your appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page next to the login information. Then click Organizations. To display the organization's information, click the organization's name.**

     On the *Organization Detail* page that appears, locate the *Communication and Agent Settings* section.
   - **If the Organization component is not enabled on your appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`. Then select Settings > Provisioning., and click Communication Settings on the *Provisioning* panel.**

     The *Communication Settings* page appears.
2. In the *Agent and Communications Settings* section, specify the following settings:

   **NOTE:** To reduce the load on the appliance, limit the number of Agent connections to 500 per hour. The number of connections that appears next to the inventory, scripting, and metering intervals, applies to the current organization only. If the Organization component is enabled on your appliance, the total number of Agent connections for all organizations should not exceed 500 per hour.

| Option | Suggested Setting | Notes |
|---|---|---|
| **Agent Logging** | Enabled | Whether the appliance stores scripting results provided by Agents installed on managed devices. Agent logs can consume as much as 1GB of disk space in the database. If disk space is not an issue, enable *Agent Logging* to keep all log information for Agent-managed devices. These logs can be useful during troubleshooting. To save disk space, and enable faster Agent communication, disable *Agent Logging*. |
| **Agent Inventory** | 12 hours | The frequency at which Agents on managed devices report inventory. This information is displayed in the *Inventory* section. |
| **Agentless Inventory** | 1 Day | The frequency at which Agentless devices report inventory. This information is displayed in the *Inventory* section. |
| **Catalog Inventory** | 24 hours | The frequency at which managed devices report inventory to the *Software Catalog* page. |
| **Metering** | 4 hours | The frequency at which managed devices report metering information to the appliance. Requires metering to be enabled on devices and applications. |

| Option | Suggested Setting | Notes |
|---|---|---|
| **Scripting Update** | 4 hours | The frequency at which Agents on managed devices request updated copies of scripts that are enabled on managed devices. This interval does not affect how often scripts run. |

3. In the *Notify* section, specify the message to use for Agent communications:

| Option | Suggested Setting | Notes |
|---|---|---|
| **Agent Splash Page Message** | Default text:<br>KACE Service Desk `is verifying your PC Configuration and managing software updates. Please Wait...` | The message that appears to users when Agents are performing tasks, such as running scripts, on their devices. |

4. In the *Agentless* section, specify communications settings for Agentless devices:

| Option | Description |
|---|---|
| **SSH Timeout** | The time, in seconds or minutes, after which the connection is closed if there is no activity. |
| **SNMP Timeout** | The time, in seconds, after which the connection is closed if there is no activity. |
| **Maximum Attempts** | The number of times the connection is attempted. |
| **WinRM Timeout** | The time, in seconds or minutes, after which the connection is closed if there is no activity. |

5. If the Organization component is not enabled on your appliance, specify *Agent* settings.

**NOTE:** If the Organization component is enabled on your appliance, *Agent* settings are located on the appliance *General Settings* page.

| Option | Description |
|---|---|
| **Last Task Throughput Update** | This value indicates the date and time when the appliance task throughput was last updated. |
| **Current Load Average** | The value in this field depicts the load on an appliance at any given time. For the appliance to run normally, the value in this field must be between 0.0 and 10.0. |
| **Task Throughput** | The value that controls how scheduled tasks, such as inventory collection, scripting, and patching updates, are balanced by the appliance.<br>**NOTE:** This value can be increased only if the value in the Current Load Average is not more than 10.0 and the Last Task Throughput Update time is more than 15 minutes. |

6. Click **Save**.

**The changes take effect when Agents check in to the appliance.**

7. If you have multiple organizations, repeat the preceding steps for each organization.

**Related topics**

View appliance logs

Configure appliance General Settings with the Organization component enabled

# View device inventory and details

You can view the list of devices in inventory on the *Devices* page, and you can view information about any selected device on the *Device Detail* page.

1. Go to the *Device Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Devices**.
    c. Click the name of a device.
2. To expand the sections on the *Device Detail* page, click **Expand All** above the *Summary* section.

    The fields that are displayed depend on the type of device and its operating system. For example, if the device is a virtual machine, the *Monitor* field is not displayed, although the *Video Controller* is. In addition, some fields are available for some operating systems but not for others. For example, *System Description* is available for Windows or SNMP devices only.

    To view tables describing the contents of the groups and sections that appear on this page, see Groups and sections of items in device details.
3. **Optional**: If change tracking is enabled for inventory information, click **Show All History** above the *Summary* section to see the history of inventory changes.

**Related topics**

Configuring history settings

Managing Agent communications

Schedule inventory data collection for managed devices

About OVAL security checks

About SCAP

About the Asset Management component

# Viewing information about devices enrolled in KACE Cloud MDM

The appliance displays information about Mac OS X devices that are enrolled in an integrated KACE Cloud Mobile Device Manager (MDM) instance.

The type of information available for such devices depends on whether they have a KACE Agent installed. There are three possible scenarios that determine the type of information collected from Mac OS X devices enrolled in KACE Cloud MDM:

- Hybrid appliance-first device management
- KACE Cloud MDM device management
- Hybrid KACE Cloud MDM-first device management

**Hybrid appliance-first device management**

1. A Mac OS X device has a KACE Agent installed and configured to connect to the appliance.
2. The device is enrolled in KACE Cloud MDM integrated with the appliance.

3. The appliance recognizes the device as a standard Agent-based device.

**KACE Cloud MDM device management**

1. A Mac OS X device is enrolled in KACE Cloud MDM integrated with the appliance.
2. KACE Cloud MDM collects inventory information from the device.
3. The appliance recognizes the device as a standard Agentless KACE Cloud MDM device.

**Hybrid KACE Cloud MDM-first device management**

1. A Mac OS X device is enrolled in KACE Cloud MDM integrated with the appliance.
2. KACE Cloud MDM collects inventory information from the device.
3. The appliance recognizes the device as a standard Agentless KACE Cloud MDM device.
4. A KACE Agent is installed on the device and configured to connect to the appliance.
5. The appliance recognizes the device as a standard Agent-based device.

For complete information about the device fields appearing on the *Device Details* page, see Groups and sections of items in device details.

# Groups and sections of items in device details

The *Device Details* page for a device contains inventory information presented in sections that are collected in groups. The extent and focus of information included on the page depends on the device and any subtypes indicated.

**NOTE:** If you have assigned an Asset Subtype, you can choose whether to show or hide the details that appear for each Device on the *Device Detail* page. For example, for the subtype *Printer*, information that is irrelevant to printers, such as the items *Installed Programs*, *Discovered Software*, and *Metered Software*, could be made hidden. Whole groups can be hidden as well. See Add Asset Subtypes and select Device Detail page preferences.

Scoped users can see the details of all devices, but can only edit the details of those devices that are associated with their role. For more information about user roles, see Add or edit User Roles.

The following groups can appear on the *Device Details* page:

- Summary group
- Inventory Information group
- Software group
- Activities group
- Security group
- Dell Command | Monitor group
- Dell Updates group
- Logs and Diagnostics group
- Asset group

**Summary group**

Basic device identification information. The items are not separated into sections as in the other groups on the page. The entries that appear on the *Device Detail* page vary depending on the device, operating system (if relevant), connection type, and so on.

| Item | Description | Database field |
|---|---|---|
| System Name | The hostname or IP address of the device. | NAME |

| Item | Description | Database field |
|---|---|---|
| Asset Subtype | The Asset Subtype for this device, if one has been assigned. Asset Subtypes are subcategories of assets that you can add to any Asset Type, including custom Asset Types. This enables you to identify and manage subtypes of assets, such as Device assets that are computers, printers, or routers. | |
| Asset Location | The location of this asset. | N/A |
| Assigned To | The device owner. This field is only populated if the device user record exists on the appliance. When you integrate with the KACE Cloud MDM, if the appliance is synchronized with the KACE MDM tenant's Active Directory, the name of the KACE MDM device owner is displayed. For other types of external devices, if the device user record is not found on the appliance, the field is set to *Unassigned*. | N/A |
| Manual Entry | A field that indicates the inventory information was added manually, either through WSAPI or XML upload. click **Edit** to modify the information. | MANUAL_ENTRY |
| Device Entry Type | A field that indicates how the device is being managed: *Agent Device*, *Agentless Device*, *Manually Entered Record*, or *Agent/Agentless* (hybrid KACE Cloud MDM inventory). Click **Edit** to change connection protocols. | N/A |
| System Description | A description of the device, populated by Agentless inventory for Windows and SNMP devices. | SYSTEM_DESCRIPTION |
| System Model | The device model. | CS_MODEL |
| Chassis Type | The type of device, such as desktop or laptop. | CHASSIS_TYPE |
| Ownership | **KACE MDM devices only**. Indicates the ownership of the device: *Company*, *Personal* or *Unknown*. | OWNERSHIP |
| IP Address | The IP address of the device. | IP |
| MAC Address | The device's Media Access Control (MAC) address number. | MAC |
| RAM Total | The total amount of random-access memory (RAM) on the device. | RAM_TOTAL |
| Operating System Name | The operating system of the device, such as Windows, Mac OS X®, or Linux. | OS_NAME |
| Service Pack | The service pack version number (Windows or SUSE Linux Enterprise Server only). | SERVICE_PACK |

| Item | Description | Database field |
|---|---|---|
| Uptime Since Last Reboot | The amount of time the device has been running since it was restarted. | UPTIME |
| Agent Version | The version number of the KACE Agent installed on the device. | CLIENT_VERSION |
| Device Timezone | The timezone used by the KACE Agent installed on the device. | TZ_AGENT |
| Source | The source of the collected device details.<br>• **Agent-managed devices**: This field is set to `Agent`.<br>• **Agentless devices**: This field reflects the connection type. For example, `VMware`.<br>• **Agent-managed devices that are also enrolled in KACE Cloud MDM**: This field is set to `Agent/KACE Cloud Mobile Device Manager`. Click the **KACE Cloud Mobile Device Manager** link to see this device in the KACE MDM Cloud inventory. | N/A |
| User Name | The name of the most recent user who logged in to the device. Some devices might have multiple users. | USER |
| Agent Connection | The time the agent messaging protocol service on the device connected to the appliance and the current connection status (available for Agent-managed devices only). Connection status information includes:<br>•  : An Agent-managed device is connected to the appliance.<br>•  : An Agent-managed device with server monitoring enabled is connected to the appliance.<br>•  : An Agent-managed device is not connected to the appliance.<br>•  : The Agent's activity is suspended on the device using the system tray (Windows) or menu bar (Mac OS) until the indicated time and date.<br>•  : A manually added device is connected to the appliance.<br>•  : An issue is detected on an Agent-managed device. To find out more about device issues, navigate to the Device Issues | KBSYS.SMMP_CONNECTION |

| Item | Description | Database field |
|---|---|---|
| | page. For more information, see Identify device issues. | |
| Agentless Connection | The time the Agentless device connected to the appliance and the current connection status (available for Agentless devices only). Connection status information includes:<br>•  : Agentless-management is enabled for the device.<br>•  : Agentless-management and server monitoring is enabled for the device.<br>•  : Agentless management is enabled for the device, but the device is not currently reachable. | N/A |
| Agentless Connection Method | The protocol, such as SNMP, used to collect inventory information from the device. | N/A |
| Last Inventory | The time of the most recent inventory report. | LAST_SYNC |
| Device Created | The date and time that the device's first inventory record was created. | CREATED |
| Device Modified | The date and time that the device's inventory record was modified. | MODIFIED |
| Contact | **Printers only**. The contact information for the selected printer, such as an email address. This information is stored in the managed printer's SNMP `sysContact` field. | |
| Location | **Printers only**. The location of the selected printer, such as the name of the organization. This information is stored in the managed printer's SNMP `sysLocation` field. | |
| Volume **n** | The type and size of the disk drive's file system, and amount of space used on the disk drive. To view changes to the drive usage, click **Show Usage History** link in this field. This information is updated when usage increases or decreases by 5% or more.<br>There is one entry for each volume.<br>For VMware® ESXi® host devices, each datastore associated with the ESXi host is listed as a volume. | MACHINE_DISKS |
| Force Inventory | Click **Force Inventory** to immediately update inventory information for the device and synchronize the device with the appliance.<br>**Force Inventory** is available only if the agent messaging protocol connection to an Agent- | N/A |

| Item | Description | Database field |
|---|---|---|
| | managed device is active, or for Agentless devices, if the device is reachable. | |
| VMware UUID | This field is only visible when you select a VMware device. The UUID is a globally unique identifier for the vCenter Server or the ESXi host. | INSTANCE_UUID |
| Hyper-V UUID | This field is only visible when you select a Hyper-V device. The UUID is a globally unique identifier for the SCVMM or the Hyper-V server. | INSTANCE_UUID |
| Managing Virtual Machine Manager | The name of the managing vCenter (VMware devices) or SCVMM (Hyper-V devices).<br>If the managing vCenter or SCVMM is already provisioned by the KACE Agent, its name in this column appears as a hyperlink. When you click the link, the page is updated to display device details for the provisioned virtual machine manager. | N/A |
| Choose Action | • To upload agent files, click **Choose Action > Upload Agent Files (Diagnostic)**. When done, links to uploaded files appear in the *Logs and Diagnostics* group on this page.<br>• To add the device to the KACE Systems Deployment Appliance (SDA) boot action, click **Choose Action > Add to SDA Boot Action**. KACE SDA boot actions are used to automate image deployments to target devices. You can only create boot actions from the selected device if a linked KACE SDA exists, and the device has a wired network connection. This command is also available from the **Choose Action** menu on the *Devices* list page. When you click this command, the KACE SDA *Automated Deployment Detail* page appears. For more information about this page, see the KACE SDA *Administrator Guide*.<br>• To delete the selected device, click **Choose Action > Delete**. | N/A |
| KACE Cloud Mobile Device Manager (MDM) commands | When you integrate with the KACE Cloud MDM and select a KACE Cloud MDM device, an additional set of commands is available in this section.<br>• **Force Inventory**: Requests from the KACE Cloud MDM to initiate a new inventory for the device. When complete, the appliance synchronizes the inventory information.<br>• **Lock**: Blocks access to the selected device. Next time the user interacts with the device, | N/A |

| Item | Description | Database field |
| --- | --- | --- |
| | they are prompted to provide the device's passcode.<br>• **Set Passcode**: Allows you to specify a new passcode for the selected device.<br>**NOTE:** This command is only available for Android devices.<br>• **Clear Passcode**: Unlocks the selected device. The device remains unlocked until a new passcode is provided.<br>• **Clear Restrictions**: **Android and iOS devices only.** Removes any settings that limit the selected device's functionality.<br>• **Unenroll Device**: Un-enrolls the selected device from the KACE Cloud MDM.<br>• **Factory Reset**: Restores the factory settings on the selected device.<br>• **Restart Device**: **Android (managed), iOS (supervised), and Mac OS devices only.** Restarts the selected device.<br>• **Shutdown Device**: **iOS (supervised) and Mac OS devices only**. Turns off the selected device.<br>• **Enable Remote Desktop**: **Mac OS devices only.** Enables remote desktop connections to the selected device.<br>• **Disable Remote Desktop**: **Mac OS devices only.** Disables remote desktop connections to the selected device.<br>• **Set Firmware Password**: **Mac OS devices only.** Allows you to specify a password for the selected device's firmware.<br>• **Clear Firmware Password**: **Mac OS devices only.** Deletes the password for the selected device's firmware.<br>**TIP:** These commands are also accessible from the *Devices* list page, from the **Choose Action** menu, when KACE Cloud MDM bulk actions are enabled. This feature is disabled by default. To enable it, on the *General Settings* page, under *Allowed Bulk Actions*, select the **Enable Bulk KACE Cloud MDM Actions** check box. For more information, see Configure Admin-level or organization-specific General Settings. The **Force Inventory** command appears in the main menu, while the other commands are available in the **KACE Cloud MDM** menu. | |

| Item | Description | Database field |
|---|---|---|
| VMware virtual machine commands | If your managed environment includes one or more provisioned VMware virtual machines, you can perform device actions from this page, such as powering virtual machines on or off. These commands are available if the following pre-requisites are met:<br>• The provisioned virtual machines must be running on a provisioned VMware ESXi server version 5.5.x or higher.<br>**NOTE:** Your product license agreement allows administrator to manage a specific number of computers, servers, and assets. Each provisioned VMware ESXi server consumes an agentless license. If you want to use this feature, you must ensure that your product license agreement covers all of your provisioned ESXi hosts. For more information, see http://quest.com/docs/Product_Guide.pdf. To increase your license capacity, visit https://quest.com/buy.<br>• VMware Tools must be installed on the target virtual machines to issue **Shut Down Guest OS** and **Restart Guest OS** commands. The other commands do not require VMware Tools.<br>• User account configured in the inventory must have sufficient administrative-level permissions in order to perform these actions.<br>The following commands are available when you select a provisioned VMware virtual machine.<br>• **Power On**: Powers on the selected virtual machine. If the virtual machine is suspended, this action causes the suspended virtual machine to be powered on.<br>• **Power Off**: Powers off the selected virtual machine. If the virtual machine is a fault-tolerant primary virtual machine, this results in one or more of the secondary virtual machines being powered off as well.<br>• **Suspend**: Suspends the execution of the selected virtual machine.<br>• **Reset**: Resets the power on the selected virtual machine. If the virtual machine is currently powered on, this action first powers it off, then powers it on.<br>• **Shut Down Guest OS**: Issues a command to the guest operating system on the selected | N/A |

| Item | Description | Database field |
|---|---|---|
| | virtual machine to perform a clean shutdown of all services.<br>• **Restart Guest OS**: Issues a command to the guest operating system on the selected virtual machine to perform a reboot.<br>**TIP:** These commands are always available on the *Device Detail* page. They can also appear on the *Devices* list page in the **Choose Action** menu when bulk actions against virtual machines are enabled. This feature is disabled by default. To enable it, on the *General Settings* page, under *Allowed Bulk Actions*, select the **Enable Bulk Virtual Machine Actions** check box. For more information, see Configure Admin-level or organization-specific General Settings.<br>For complete information about these virtual machine actions, refer to your VMware ESXi documentation. | |
| Hyper-V virtual machine commands | If your managed environment includes one or more provisioned Hyper-V virtual machines, you can perform device actions from this page, such as powering virtual machines on or off.<br>The following commands are available when you select a provisioned Hyper-V virtual machine.<br>• **Power On**: Powers on the selected virtual machine. If the virtual machine is suspended, this action causes the suspended virtual machine to be powered on.<br>• **Power Off**: Powers off the selected virtual machine. If the virtual machine is a fault-tolerant primary virtual machine, this results in one or more of the secondary virtual machines being powered off as well.<br>• **Suspend**: Suspends (pauses) of the selected virtual machine.<br>• **Resume**: Resumes a suspended virtual machine.<br>• **Reset**: Resets the power on the selected virtual machine. If the virtual machine is currently powered on, this action first powers it off, then powers it on.<br>• **Shut Down Guest OS**: Issues a command to the guest operating system on the selected virtual machine to perform a clean shutdown of all services.<br>• **Restart Guest OS**: Issues a command to the guest operating system on the selected virtual machine to perform a reboot. | N/A |

| Item | Description | Database field |
|---|---|---|
| | **TIP:** These commands are always available on the *Device Detail* page. They can also appear on the *Devices* list page in the **Choose Action** menu when bulk actions against virtual machines are enabled. This feature is disabled by default. To enable it, on the *General Settings* page, under *Allowed Bulk Actions*, select the **Enable Bulk Virtual Machine Actions** check box. For more information, see Configure Admin-level or organization-specific General Settings.<br>For complete information about these virtual machine actions, refer to your Hyper-V documentation. | |
| Chrome device commands | If your managed environment includes one or more provisioned Chrome devices, the following commands are available when you select a Chrome device:<br>• **Move**: Moves a provisioned device to a different organizational unit.<br>• **Disable**: Disables a provisioned device. You can use this command if a device is lost or stolen.<br>• **Re-Enable**: Enables a previously disabled device.<br>• **Deprovision**: Removes all provisioning policies from the device. You typically need to do that for devices that are no longer used in your organization so that you no longer need to manage them.<br>**TIP:** These commands are always available on the *Device Detail* page. They can also appear on the *Devices* list page in the **Choose Action** menu when bulk actions against virtual machines are enabled. This feature is disabled by default. To enable it, on the *General Settings* page, under *Allowed Bulk Actions*, select the **Enable Bulk Chrome OS Actions** check box. For more information, see Configure Admin-level or organization-specific General Settings.<br>For complete information about these Chrome device actions, refer to the Google documentation. | |

| Item | Description | Database field |
|---|---|---|
| Microsoft Defender commands | The following requirements must be met in order for a managed device to have access to these commands:<br>• Agent managed or agentless device<br>• Windows 10 or later, or Windows Server 2016 or later<br>• Powershell is required<br>The following commands are available:<br>• **Perform a Microsoft Defender Quick Scan**: Scans the locations in which malware can be registered, such as registry keys and Windows startup directories.<br>• **Perform a Microsoft Defender Full Scan**: Starts by running a quick scan followed by a scan of all fixed, removable, and network drives, as applicable.<br>• **Update Microsoft Defender Signatures**: Updates the anti-malware definitions.<br>• **Enable Microsoft Defender**: Turn on Microsoft Defender on the selected device.<br>• **Disable Network Traffic**: Disables network traffic to and from the selected device.<br>**TIP:** These commands are also accessible from the *Devices* list page, from the **Choose Action** menu, when Microsoft Defender bulk actions are enabled. This feature is disabled by default. To enable it, on the *General Settings* page, under *Allowed Bulk Actions*, select the **Enable Bulk Microsoft Defender Actions** check box. For more information, see Configure Admin-level or organization-specific General Settings. | |

### Inventory Information group

Additional details on items in the *Summary* section.

| Section or Item | Description | Database field |
|---|---|---|
| **Hardware** | Information about the device's hardware.<br>If change history is enabled for this section, and the information in this section has changed, the **Show Changes** link appears next to the heading. Click **Show Changes** to view only those items that have changed. Click **Hide Changes** to view all items. | |
| RAM Total | The total amount of random-access memory (RAM) installed on the device. | RAM_TOTAL |

| Section or Item | Description | Database field |
|---|---|---|
| RAM Used | The amount of random-access memory (RAM) in use on the device. | RAM_USED |
| RAM Maximum | The maximum amount of random-access memory (RAM) that the device can support. | RAM_MAX |
| System Manufacturer | The device manufacturer. | CS_MANUFACTURER |
| System Model | The device model. | CS_MODEL |
| CSP ID Number | The system serial number. | CSP_ID_NUMBER |
| Asset Tag | **Windows, Chrome and KACE MDM devices only**. The BIOS Asset Tag of a system. An Admin can use a bios utility to set this value on the system. | ASSET_TAG |
| Domain | The Windows domain to which the device is joined. | CS_DOMAIN |
| Motherboard Primary Bus | The main bus. | MOTHERBOARD_PRIMARY_BUS |
| Motherboard Secondary Bus | The peripheral bus. | MOTHERBOARD_SECONDARY_BUS |
| Processors | The CPU count, type, and manufacturer. | PROCESSORS |
| Architecture | The architecture of the device operating system, such as x86 or x64. | SYS_ARCH |
| Virtual Device | Used to identify devices that are virtual, such as devices running on VMware platforms. Not displayed for physical devices, such as laptops and servers. | VIRTUAL |
| Trusted Platform Module (TPM) | On devices with the TPM dedicated microprocessor installed, displays specifications and information about whether TPM is enabled and activated.<br>See About Dell Data Protection \| Encryption (DDP\|E) and encryption information in device details. | MACHINE_TPM |
| Intel AMT Device | On Intel-based Windows devices with Intel AMT technology present, displays information about configuration.<br>See About Intel AMT information in device details. | INTEL_AMT |
| CD/DVD Drives | The configuration of CD-ROM and DVD-ROM drives installed on the device. | CDROM_DEVICES |
| Sound Devices | Information about audio devices on the device. | SOUND_DEVICES |
| Video Controllers | Information about video controllers on the device. | VIDEO_CONTROLLERS |

| Section or Item | Description | Database field |
|---|---|---|
| Monitors | The type and manufacturer of the monitor attached to the device. For virtual devices, this displays monitor information if it is reported by the operating system. | MONITOR |
| Apple Support Information | Link to the Support page at Apple. | N/A |
| SMC Version | The System Management Controller version of the device CPU. | BIOS_NAME |
| Serial Number | The serial number of the device. | BIOS_SERIAL_NUMBER |
| Boot ROM Version | The Boot ROM or Firmware version of the device. | BIOS_VERSION |
| Dell Service Information | Information about Dell hardware, including the Service Tag, System Type, Ship Date, Country, and warranty information. This section also includes a *Days Left* column, which indicates the number of days remaining in the warranty period, and *Last Updated* column, which indicates the last time the warranty information was refreshed. To update Dell Service information, click **Refresh**. | DELL_WARRANTY |
| BIOS Name | The BIOS name. | BIOS_NAME |
| BIOS Version | The BIOS version. | BIOS_VERSION |
| BIOS Release Date | The date the BIOS version was released. | BIOS_DATE |
| BIOS Manufacturer | The BIOS manufacturer. | BIOS_MANUFACTURER |
| BIOS Description | The BIOS description. | BIOS_DESCRIPTION |
| BIOS Serial Number | The BIOS serial number. | BIOS_SERIAL_NUMBER |
| Black Toner - Description | **Printers only**. The make and model of the black toner. | |
| Black Toner - Maximum Level | **Printers only**. The maximum level of the black toner powder. | |
| Black Toner - Current Level | **Printers only**. The current level of the black toner powder. If the toner is not installed, a message appears in this field. | |
| Cyan Toner - Description | **Color printers only**. The make and model of the cyan toner. | |

| Section or Item | Description | Database field |
|---|---|---|
| Cyan Toner - Maximum Level | **Color printers only**. The maximum level of the cyan toner powder. | |
| Cyan Toner - Current Level | **Color printers only**. The current level of the cyan toner powder. If the toner is not installed, a message appears in this field. | |
| Magenta Toner - Description | **Color printers only**. The make and model of the magenta toner. | |
| Magenta Toner - Maximum Level | **Color printers only**. The maximum level of the magenta toner powder. | |
| Magenta Toner - Current Level | **Color printers only**. The current level of the magenta toner powder. If the toner is not installed, a message appears in this field. | |
| Yellow Toner - Description | **Color printers only**. The make and model of the yellow toner. | |
| Yellow Toner - Maximum Level | **Color printers only**. The maximum level of the yellow toner powder. | |
| Yellow Toner - Current Level | **Color printers only**. The current level of the yellow toner powder. If the toner is not installed, a message appears in this field. | |
| Volume **n** | The type and size of the disk drive's file system, and amount of space used on the disk drive. To view changes to the drive usage, click **Show Usage History** link in this field. This information is updated when usage changes by plus or minus 5%.<br>There is one entry for each volume. | MACHINE_DISKS |
| Hewlett-Packard Service Information | **Hewlett-Packard devices only**. Information about the selected Hewlett-Packard (HP) device. This section is populated when you provide the manufacturer's API keys on the *General Settings* page. For more information, see Configure appliance General Settings with the Organization component enabled. | |
| | Serial Number: The serial number of the selected HP device. | SERIAL |
| | Product Number: The specific number of the selected HP device. | PN |
| | Product Name: The name of the selected HP device. | PRODUCT |
| | Last Updated: The time stamp of when the device information was last updated. | |

| Section or Item | Description | Database field |
|---|---|---|
| | Service Status Type: The selected device's service type:<br>• W: Warranty<br>• P: Fixed care pack, equivalent to extended warranty<br>• C: A contract, equivalent to extended warranty | SERVICE_TYPE |
| | Type: The description of the service status type. For example, *Waranty*, or something else. | TYPE |
| | Start Date: The warranty start date. | START_DATE |
| | End Date: The warranty end date. | END_DATE |
| | Service Level: A comma separated list of the device's service codes. | SERVICE_LEVEL |
| Lenovo Service Information | **Lenovo devices only**. Information about the selected Lenovo device. This section is populated when you provide the manufacturer's API keys on the *General Settings* page. For more information, see Configure appliance General Settings with the Organization component enabled. | |
| | Product: The name of the selected Lenovo device. | PRODUCT |
| | Purchased: The date when the selected Lenovo device is purchased. | PURCHASED |
| | Shipped: The date when the selected Lenovo device is shipped. | SHIPPED |
| | In Warranty: Indicates if the selected Lenovo device is covered by the warranty (*Yes* or *No*). | IN_WARRANTY |
| | Country: The country where the selected Lenovo printer is purchased. | COUNTRY |
| | UpgradeUrl: The URL containing upgrade information. | UPGRADE_URL |
| | Last Updated: The time stamp of when the device information was last updated. | |
| | Id: The warranty ID. | ID |
| | Type: The warranty type: *UNKNOWN*, *BASE*, *UPGRADE*, *EXTENDED* or *INSTANT*. | TYPE |
| | Start Date: The warranty start date. | START_DATE |

| Section or Item | Description | Database field |
|---|---|---|
| | End Date: The warranty end date. | END_DATE |
| | Name: The warranty name. | |
| | Description: The warranty description, as applicable. | DESCRIPTION |
| **Printers** | The printers that the device is configured to use. | PRINTERS |
| **Network Interfaces** | The type of network interface, such as Ethernet card or Bluetooth adapter, and details like IP address, whether DHCP (Dynamic Host Configuration Protocol) is enabled or disabled for the associated IPv4 (Internet Protocol version 4). | MACHINE_NICS |
| SNMP Data | The results of a SNMP Full Walk of data in the MIB (management information base) on a device, if you set up the *Authenticated* device discovery type to perform a Full Walk. This section does not appear if discovery was made with a Bulk GET. | |
| MAC Address | The device's wireless MAC address. | MAC_ADDRESS |
| DHCP | An indicator of whether DHCP is enabled for the IPv4 address associated with this network interface. | |
| IPv6 Host Configuration | A list containing one or more IPv6 ((Internet Protocol version 6) addresses available on the network interface. For each listed item, this section displays its full IPv6 address and the number of bits in the IPv6 address prefix. An IPv6 prefix typically consists of 64 bits. | |
| DNS Hostname | The host name associated with this network interface. | |
| Wi-Fi | **KACE MDM devices only**. The IP or MAC address of the device. | |
| **Chrome OS** | Chrome-related information.<br>**NOTE:** Chrome values are in the MACHINE_CHROMEOS_DETAIL table, not the MACHINE table. | N/A |
| Directory API ID | The unique ID of the Chrome device. | DEVICE_ID |
| Status | The status of the Chrome device: ACTIVE, DEPROVISIONED, INACTIVE, RETURN_APPROVED, RETURN_REQUESTED, SHIPPED, UNKNOWN. | STATUS |

| Section or Item | Description | Database field |
|---|---|---|
| Support End Date | The final date the device will be supported. This is applicable only for those devices purchased directly from Google. | SUPPORT_END_DATE |
| Custom User | The user of the device as noted by the administrator. | ANNOTATED_USER |
| Custom Location | The address or location of the device as noted by the administrator. | ANNOTATED_LOCATION |
| Order Number | The device's order number. Only devices directly purchased from Google have an order number. | ORDER_NUMBER |
| Chrome Version | The Chrome device's operating system version. | OS_VERSION |
| Platform Version | The Chrome device's platform version. | PLATFORM_VERSION |
| Firmware Version | The Chrome device's firmware version. | FIRMWARE_VERSION |
| Boot Mode | The boot mode for the device. | BOOT_MODE |
| Organizational Unit | The full parent path with the Google organization unit's name associated with the device. | ORG_UNIT_PATH |
| Auto-Update Expiration | The date and time until which the device receives automatic updates. | AUTO_UPDATE_EXPIRATION |
| **Mobile Information** | Information from devices managed by KACE Mobile Device Manager (KMDM), and Workspace ONE® | N/A |
| UDID | The device’s Unique Device Identifier. For iOS devices only. | UDID |
| Modem Firmware | The mobile device's firmware version. | FIRMWARE_VERSION |
| Device type | **DMM devices only**. The type of mobile device. Examples include iPhone, iPad, iPod, Android Phone, and Android Tablet. | DEVICE_TYPE |
| ICCID | **KACE MDM and DMM devices only**. The unique serial number for the device’s SIM card. | ICCID |
| IMEI | **KACE MDM and DMM devices only**. International Mobile Equipment Identity number for the device. | IMEI |
| Voice Roaming Enabled | **KACE MDM Android phones only**. An indicator of whether the selected KACE MDM Android phone has voice roaming enabled. | VOICE_ROAMING_ENABLED |
| Data Roaming Enabled | **KACE MDM Android phones only**. An indicator of whether the selected KACE MDM Android phone has data roaming enabled. | DATA_ROAMING_ENABLED |

| Section or Item | Description | Database field |
|---|---|---|
| MEID | **KACE MDM devices only**. The Mobile Equipment Identifier. This is the unique identifier of the selected mobile device. | MEID |
| Phone Number | **DMM devices only**. Phone number associated with the device. | PHONE_NUMBER |
| Mobile Operator | **KACE MDM and DMM devices only**. The mobile network carrier. | CARRIER |
| Bluetooth MAC Address | **DMM devices only**. Media access control address for Bluetooth on the device. | BLUETOOTH_MAC |
| Battery Level | **KACE MDM and DMM devices only**. Amount of battery charge at last update, in percent. | BATTERY_LEVEL |
| Last Check-in | The time stamp of when the device information was last updated. | LAST_CHECK_IN |
| Last Enrollment Time | The date and time the device was last enrolled with the Google Admin console. | LAST_ENROLLMENT_TIME |
| Enrolled | **KACE MDM and Workspace ONE devices only**.<br>The date and time the device was last enrolled with KACE MDM or Workspace ONE console. | IS_ENROLLED |
| Supervised | **KACE MDM iOS devices only**. An indicator of whether the selected KACE MDM iOS device is supervised. This is the highest level of control on an iOS device. | IS_SUPERVISED |
| Lost Mode | **KACE MDM iOS supervised devices only**. An indicator of whether the selected KACE MDM iOS device is in Lost mode. The Lost mode prevents a device from being unlocked by a third party. | IS_LOST |
| Encrypted | **KACE MDM devices only**. An indicator of whether the selected KACE MDM iOS device is in Encrypted mode. | IS_ENCRYPTED |
| Locator Service Enabled | **KACE MDM iOS devices only**. An indicator of whether the selected KACE MDM iOS device is has the Locator Service enabled. This service retrieves the device location information, if the device is responding. | LOCATOR_SERVICE_ENABLED |
| Activation Lock Enabled | **KACE MDM iOS devices only**. An indicator of whether the activation lock is enabled on the selected KACE MDM iOS device. This feature prevents anyone else from using an iOS device if it is lost or stolen. | ACTIVATION_LOCK_ENABLED |

| Section or Item | Description | Database field |
|---|---|---|
| Rooted | **KACE MDM Android devices only**. An indicator of whether the OS of the selected KACE MDM Android device is unlocked. | IS_ROOTED |
| Compliant | **Workspace ONE devices only**. Indicates if the device meets pre-configured Workspace ONE compliance rules. | IS_COMPLIANT |
| Current Mobile Network | **Workspace ONE devices only**The name of the mobile network associated with the Workspace ONE device. | N/A |
| Activation Lock Bypass Code | **KACE MDM iOS DEP-managed devices only**.The bypass code that can be used as the device password, when activation lock is enabled. | ACTIVATION_LOCK_BYPASS_CODE |
| Allow Supervised Activation Lock | **KACE MDM iOS DEP-managed devices only**. Indicates if activation lock is enabled for the device. Activation lock allows users to bypass the password and log in to the device with the activation lock bypass code. | ACTIVATION_LOCK_ALLOWED |
| DEP Managed | **KACE MDM iOS devices only**. Indicates if the device is managed by the Apple Device Enrollment Program (DEP). | IS_DEP_MANAGED |
| DEP Profile | **KACE MDM iOS DEP-managed devices only**. The name of the DEP profile associated with the device. | DEP_PROFILE |
| DEP Profile Assigned By | **KACE MDM iOS DEP-managed devices only**. The name of the user account that assigned the DEP profile to the device. | DEP_ASSIGNED_BY |
| DEP Profile Assigned Date | **KACE MDM iOS DEP-managed devices only**. The date when the DEP profile is assigned to the device. | DEP_ASSIGNED_DATE |
| DEP Profile Status | **KACE MDM iOS DEP-managed devices only**. The management status of the device:<br>• **Assigned**: Apple DEP received a profile and it is ready to be assigned to the device.<br>• **Empty**: profile is not assigned to the device.<br>• **Pushed**: A profile is delivered to the activated device.<br>• **Removed**: A profile was assigned to the device but has been removed. When the device reactivates, KACE MDM will no longer manage the device. | DEP_PROFILE_STATUS |
| Device Configured | **KACE MDM iOS DEP-managed devices only**. | IS_DEP_CONFIGURED |
| Do Not Disturb | Indicates if the device is in Do Not Disturb mode. | DO_NOT_DISTURB_ENABLED |

| Section or Item | Description | Database field |
|---|---|---|
| Exchange Device ID | The Microsoft Exchange ID assigned to the device. | EAS_DEVICE_ID |
| First Enrolled | The date when the device was enrolled in KACE MDM. | ENROLLMENT_DATE |
| iCloud Enabled | **KACE MDM iOS devices only**. Indicates if cloud is enabled on the devices. | ICLOUD_ENABLED |
| Last iCloud Backup | **KACE MDM iOS devices only**. The date when Apple iCloud was last backed up on the device. | ICLOUD_LAST_BACKUP |
| Logged into iTunes | **KACE MDM iOS devices only**. Indicates if the device is logged in to iCloud. | IS_ITUNES_ACCOUNT_ACTIVE |
| Wi-Fi Received | **KACE MDM Android devices only**. The number of bytes the device received through a Wi-Fi network. | WIFI_BYTES_RECV |
| Wi-Fi Sent | **KACE MDM Android devices only**. The number of bytes the device sent through a Wi-Fi network. | WIFI_BYTES_SENT |
| WWAN Received | **KACE MDM Android devices only**. The number of bytes the device received through a mobile network. | WWAN_BYTES_RECV |
| WWAN Sent | **KACE MDM Android devices only**. The number of bytes the device sent through a mobile network. | WWAN_BYTES_SENT |
| **Agent** | Agent-related information. | N/A |
| Agent Version | The version number of the KACE Agent installed on the device. | CLIENT_VERSION |
| Connected | The time the agent messaging protocol service on the device connected to the appliance. | CONNECT_TIME |
| Disconnected | If disconnected, the time the agent messaging protocol service on the device disconnected from the appliance. | DISCONNECT_TIME |
| KACE ID | The character string used to identify the device in the appliance database. | KUID |
| Database ID | The unique number used to identify the device in the appliance database. | ID |
| Manual Entry | A field that indicates the inventory information was added manually, either through WSAPI or XML upload. | MANUAL_ENTRY |
| Device Entry Type | A field that indicates how the device is being managed: *Agent Device*, *Agentless Device*, or | N/A |

| Section or Item | Description | Database field |
|---|---|---|
| | *Manually Entered Record*. Click **Edit** to change connection protocols. | |
| Last Inventory | The time of the most recent inventory report. | LAST_INVENTORY |
| Last Sync | For Agent-managed devices, the time the device last checked in to the appliance. For Agentless devices, the time the appliance last connected to the device and collected inventory. | LAST_SYNC |
| Last Agent Update | The time of the most recent update to the KACE Agent, if any. | LAST_CLIENT_UPDATE |
| Konductor Tasks | The status of tasks that are currently running, or that are scheduled to run, on Agent-managed devices. This section displays the following information about each task:<br>• **Task Type**: The type of task. Depending on appliance configuration, task types include alerts, inventory, kbot, krash upload, and scripting updates.<br>• **Start Time**: The start time of the task.<br>• **Completed**: The completion time of the task.<br>• **Next Scheduled**: The next scheduled run time for the task.<br>• **Timeout**: The time limit for completing the task.<br>• **Priority**:The importance or rank of the task.<br>This information also appears on the *Agent Tasks* list page. For more information, see View Agent task status. | N/A |
| **Quarantine** | Information related to the KACE Agent authentication. | N/A |
| Quarantine Record | A link to the quarantine details for this Agent. For more information, see Registering KACE Agent with the appliance. | KUID |
| Approved Time | The date and time the KACE Agent is authenticated by the appliance. | APPROVED_TIME |
| Token Used | If the KACE Agent used a token to register with the appliance, this field contains the token name and a link to the token details. | TOKEN_ID |
| Approved By | If the KACE Agent connected to the appliance after being granted access by the appliance administrator, this field contains the name of the administrative user that approved the agent's connection. | APPROVED_BY |

| Section or Item | Description | Database field |
|---|---|---|
| **User** | Information related to the device user. | N/A |
| User Logged | The user currently logged in to the device. This entry includes the username and the domain to which the user belongs. | USER_LOGGED |
| User Fullname | The full name of the user who owns the device. | USER_FULLNAME |
| User Name | The name of the current user. | USER_NAME |
| User Domain | The domain to which the user belongs. | USER_DOMAIN |
| **Operating System** | Information about the device's operating system. | N/A |
| Name | The operating system of the device, such as Windows, Mac OS X, or Linux. | OS_NAME |
| Service Pack | The service pack version number (Windows or SUSE Linux Enterprise Server only). | SERVICE_PACK |
| Operating System Version | The version number of the operating system. | OS_VERSION |
| Operating System Build Version | The build number of the operating system. | OS_BUILD |
| Number | The number of the operating system. | OS_NUMBER |
| Operating System Architecture | The architecture of the device operating system, such as x86 or x64. | OS_ARCH |
| Domain | The Windows domain to which the device is joined. | CS_DOMAIN |
| Operating System Installed On | The date the operating system was installed. | OS_INSTALLED_DATE |
| Last Startup | The length of time the operating system has been running. | LAST_REBOOT |
| Uptime Since Last Reboot | The amount of time the device has been running since it was restarted. | UPTIME |
| System Directory | The location of the system directory. | SYSTEM_DIRECTORY |
| Registry Size | The size of the registry. | REGISTRY_SIZE |
| Registry Maximum Size | The maximum size of the registry. | REGISTRY_MAX_SIZE |
| Pagefile Size | The current size of the Windows Pagefile. | PAGEFILE_SIZE |

| Section or Item | Description | Database field |
|---|---|---|
| Pagefile Max Size | The maximum size of the Windows Pagefile. | PAGEFILE_MAX_SIZE |
| IE Version | The version of Internet Explorer installed on the device. | IE_VERSION |
| Edge Version | The version of Microsoft Edge installed on the device. | EDGE_VERSION |
| WMI Status | The status of the Windows Management Instrumentation (WMI) service (Windows Devices only). | WMI_STATUS |
| **Drive Encryption** | Information on encryption if a DDP\|E client has been installed on a device, as well as BitLocker or FileVault2.<br>See About Dell Data Protection \| Encryption (DDP\|E) and encryption information in device details. | |
| Drive Encryption Summary | Identifies encryption technology in place, and whether the encryption is enabled. | N/A |
| Dell Data Protection \| Encryption (DDP\|E) | Configuration and status information about DDP\|E. | N/A |
| BitLocker | Configuration and status information about Windows BitLocker. | N/A |
| FileVault | Configuration and status information about Mac OS X FileVault 2. | N/A |
| **Location** | Information from devices managed by Workspace ONE or KACE MDM Cloud. | |
| Address | The street address of the selected device. | STREET_ADDRESS |
| City | The city where the selected device is located. | LOCALITY |
| State/Province | The state or province in which the selected device is located. | REGION |
| Country | The country where the device is located. | COUNTRY |
| Latitude | The latitude of the device detected during the last update. | LATITUDE |
| Longitude | The longitude of the device detected during the last update. | LONGITUDE |
| Last Update | The time stamp of when the device information was last updated. | LAST_UPDATE |

| Section or Item | Description | Database field |
|---|---|---|
| **Notes** | Any additional information you want to provide. | NOTES |
| **Virtual Machines** | When an ESXi host or a Hyper-V server is selected, this group lists the virtual machines associated with the selected device. Some of the information in this list is only available if VMware tools/Microsoft Integration services are installed on the virtual machines. If some columns are not populated, this may be due to missing VMware tools or Microsoft Integration services. | |
| Name | The name of the virtual machine. | NAME |
| Hostname | The host name assigned to the virtual machine. If a virtual machine is already provisioned by the KACE Agent, its name in this column appears as a hyperlink. When you click the link, the page is updated to display device details for the provisioned virtual machine. | HOSTNAME |
| IP Address | The primary IP address assigned to the virtual machine. | IP |
| State | Indicates if the virtual machine is running. Possible values:<br>• **0 - Running**: Virtual machine is running normally.<br>• **1 - Shutting down**: Virtual machine has a pending shutdown command.<br>• **2 – Resetting**: Virtual machine has a pending reset command.<br>• **3 – Pending standby**: Virtual machine has a pending standby command.<br>• **4 – Not running**: Virtual machine is not running.<br>• **5 – Unknown**: Virtual machine information is not available. | MACHINE_VIRTUAL_STATE |
| Status | The virtual machine status. Possible values:<br>• **0 – OK**: No problems.<br>• **1 – Warning**: Possible problem.<br>• **2 – Error: Definite problems**.<br>• **3 – Unknown**: Status is unknown. | MACHINE_VIRTUAL_STATUS |
| Hardware Version | The hardware version of a virtual machine reflects the virtual machine's supported virtual hardware features. | HARDWARE_VERSION |

| Section or Item | Description | Database field |
|---|---|---|
| **Hypervisors** | When a vCenter or a SCVMM environment is selected, this group lists the hypervisors managed by vCenter or SCVMM. | |
| Hostname | The host name assigned to the ESXi host or Hyper-V server. If an ESXi or or Hyper-V device is already added to the inventory, its name in this column appears as a hyperlink. When you click the link, the page is updated to display device details for the selected device. | N/A |
| Platform | The platform and version of the associated ESXi or Hyper-V hypervisor. | PLATFORM |
| IP Address | The IP address assigned to the ESXi host. | N/A |
| Virtual Machines | The number of virtual machines on the ESXi or Hyper-V hypervisor. | N/A |
| System Serial Number | The serial number of the device hosting the ESXi or Hyper-V hypervisor. | N/A |
| Status | The ESXi host status. | N/A |
| **SDA Deployment Information** | When you select a device deployed from the KACE System Deployment Appliance (SDA), this group displays the deployment details. | |
| Deployment Time | The time when the deployment is successfully completed. | SDA_DEPLOYMENT_TIME |
| Deployment Type | The type of the deployment, such as Scripted Installation, System Image, or Custom Deployment. | SDA_DEPLOYMENT_TYPE |
| Deployment Name | The name of the deployment, as specified in the KACE SDA. | SDA_DEPLOYMENT_NAME |
| Deployment URL | The URL to the deployment on the associated KACE SDA. | SDA_DEPLOYMENT_URL |
| Deployment ID | The ID of the deployment on the KACE SDA. | SDA_SCRIPTED_INSTALLATION_ID |
| SDA Name | The host name or IP address of the KACE SDA. | SDA_NAME |
| SDA URL | The URL of the KACE SDA. | SDA_URL |
| **Batteries** | This group displays battery information for Windows, Linux and MacOS Agent- and Agentless-managed devices. | |
| Charge | The percentage of the current battery capacity. | CHARGE_PERCENT |

| Section or Item | Description | Database field |
|---|---|---|
| Chemistry | **Windows and Linux devices only**. The battery type, such as Lithium Ion, and so on. | CHEMISTRY |
| Current Capacity (mWh) | The current battery capacity. | CURRENT_CAPACITY |
| Design Capacity (mWh) | The maximum capacity of battery by design. | DESIGN_CAPACITY |
| Full Charge Capacity (mWh) | Current maximum capacity of battery. This value degrades over time. | FULL_CHARGE_CAPACITY |
| Health (%) | The percentage of the current battery capacity compared to its maximum designed capacity. | HEALTH_PERCENT |
| Manufacturer | The battery manufacturer. | MANUFACTURER |
| Name | The battery name or model. | NAME |
| Plugged In | An indicator of whether the battery is currently plugged into a power source. | PLUGGED_IN |
| Recharge Count | **MacOS devices only**. The number of times the battery has been recharged. | RECHARGE_COUNT |
| Serial Number | The serial number of the battery. | SERIAL |
| Time Remaining (Minutes) | The number of minutes after which the battery becomes discharged. When the battery is plugged in, this field is blank. | TIME_REMAINING |

### Software group

Details on the applications installed on the device, including patching information, running processes, and startup programs.

| Section | Description | Database field |
|---|---|---|
| Installed Programs | A list of the software installed on the device.<br>If change history is enabled for this section, and the information in this section has changed, the **Show Changes** link appears next to the heading. Click **Show Changes** to view only those items that have changed. Click **Hide Changes** to view all items. | N/A |
| Discovered Software | Discovered applications are executables in the appliance inventory that match the definitions of applications in the Software Catalog. You can enable metering for Discovered applications and suites, mark them as Not Allowed, and add license information for them. In addition, the Discovered application list can be exported in CSV format. You can export the Discovered application list, the Uncataloged list, and the Locally Cataloged list; you cannot export the entire Software Catalog. | N/A |

| Section | Description | Database field |
|---|---|---|
| Metered Software | Applications for which metering has been enabled. | N/A |
| Custom Inventory Fields | A list of Custom Inventory fields for this device, along with the field name and value. | N/A |
| Uploaded Files | The files that have been uploaded to the appliance from this device using the *upload a file* script action. | N/A |
| Patches Reported Installed in Software Inventory | Microsoft patches that have been installed on the device.<br>If change history is enabled for this section, and the information in this section has changed, the **Show Changes** link appears next to the heading. Click **Show Changes** to view only those items that have changed. Click **Hide Changes** to view all items. | N/A |
| Running Processes | A list of processes running on the device.<br>If change history is enabled for this section, and the information in this section has changed, the **Show Changes** link appears next to the heading. Click **Show Changes** to view only those items that have changed. Click **Hide Changes** to view all items. | N/A |
| Startup Programs | A list of startup programs on the device.<br>If change history is enabled for this section, and the information in this section has changed, the **Show Changes** link appears next to the heading. Click **Show Changes** to view only those items that have changed. Click **Hide Changes** to view all items. | N/A |
| Services | A list of services that are running on the device.<br>If change history is enabled for this section, and the information in this section has changed, the **Show Changes** link appears next to the heading. Click **Show Changes** to view only those items that have changed. Click **Hide Changes** to view all items. | N/A |

### Activities group

Information about actions to be performed on the device.

| Section | Description | Database field |
|---|---|---|
| Monitoring | Information related to server monitoring, if enabled and if the device's operating system is supported.<br>If the operating system is not supported, that fact is stated in a message.<br>If the device is eligible for monitoring but does not have monitoring enabled, the **Enable Monitoring** button appears. | N/A |
| Active/Paused | Whether monitoring is enabled for this device. | N/A |
| Profiles | Any alert criteria profiles that are assigned to this device. | N/A |
| Maintenance Windows | Any Maintenance Windows that are assigned to this device. | N/A |

| Section | Description | Database field |
|---|---|---|
| Level/Alert | Alerts that are active for this device, with icons indicating the level of alert. | N/A |
| Labels | The labels assigned to this device. Labels are used to organize and categorize inventory and assets. | N/A |
| Failed Managed Installations | A list of Managed Installations that have failed to install. To access details of the Managed Installations, click the **Managed Installation Detail** link. | N/A |
| Managed Install List | A list of Managed Installations that are scheduled to be sent to the device the next time it connects with the appliance. | N/A |
| Service Desk Tickets | A list of the tickets associated with this device. These can either be tickets assigned to the device owner or tickets submitted by the device owner. To view ticket details, click the ticket ID (for example, TICK:0032). | N/A |
| SNMP Inventory Configurations | A list of SNMP Inventory Configurations associated with this device. To access details of the configurations, or to add configurations, click **Manage Associated SNMP Configurations**. | N/A |

### Security group

Information related to patching and device vulnerabilities.

| Section | Description | Database field |
|---|---|---|
| Patching Detect/ Deploy Status | A list of the patches detected and deployed on the device.<br>If patch attempts have been made, but they have failed, you can click **Reset Tries** to reset the number of patch attempts to the maximum allowed. | N/A |
| Threat Level 5 List | Threats that are harmful to applications, processes, startup items, or services on the device. | N/A |
| Windows Feature Update Status | A list of the Windows Feature Update tasks detected and deployed on the device.<br>If updates attempts have been made, but they have failed, you can click **Reset Tries** to reset the number of patch attempts to the maximum allowed. | |
| OVAL Vulnerabilities | The results of OVAL (Open Vulnerability Assessment Language) vulnerability tests that have been run on this device. Only tests that failed on this device are listed by the OVAL ID and marked as *Vulnerable*. Tests that passed are grouped and marked as *Safe*. | N/A |
| SCAP Configuration Scans | The results of FDCC/SCAP Configuration Scans that have been run on this device. | N/A |

| Section | Description | Database field |
|---|---|---|
| Linux Package Repository Information | A list of URL to the device-associated Linux package repositories. | N/A |
| Linux Package Upgrades Status | A list of the patches detected and deployed on the device.<br>If patch attempts have been made, but they have failed, you can click **Reset Tries** to reset the number of patch attempts to the maximum allowed. | N/A |
| Microsoft Defender | A list of the Microsoft Defender components and their properties, including its summary, antimalware, antispyware, and antivirus, antivirus network inspection, real-time protection, and tamper protection. | N/A |
| Microsoft Defender Threat History | A list of the threats detected by Microsoft Defender. For each threat, the list displays its name, the date and time it was first detected, the severity, whether the threat is quarantined, and if the threat is launched and active. For additional details, click a threat, and in the dialog box that appears, you can review the threat category, type, launch status, detection source, and the affected files. | N/A |

### Dell Command | Monitor group

Additional inventory information about selected Dell client systems using Dell Command | Monitor.

| Section | Description | Database field |
|---|---|---|
| Alerts | DCM log entries. These can indicate hardware errors detected by firmware. | N/A |
| Hardware | Collected information that includes detailed battery specs and usage data, service processor presence and configuration, memory inventory, and attached Dell monitors. | N/A |

For classes and properties queried by the appliance using Dell Command | Monitor, see About Dell Command | Monitor.

### Dell Updates group

Information regarding updates and inventory (for Dell devices only).

| Section | Description | Database field |
|---|---|---|
| Dell Updates Detect/ Deploy Status | A list of the Dell Updates detected and deployed on the device, and any related schedules.<br>If update attempts have been made, but they have failed, you can click **Reset Tries** to reset the number of update attempts to the maximum allowed. | N/A |

### Logs and Diagnostics group

Information related to appliance records.

- **Management Service Logs**: The primary role of appliance Management Service is to run the offline KScripts. The Management Service logs display the steps performed by Management
- Service to run the offline KScripts. These steps include, downloading dependencies and validating the KBOTS file. Any error in the execution of offline KScript is logged in the Management Service logs.
- **Bootstrap Logs**: The appliance sends a bootstrap request to get inventory information for devices that have checked in for the first time. The logs related to this request are displayed in Bootstrap logs.
- **Client Logs**: The appliance sends a request to the Agent to get inventory information periodically. A script runs on the device, then sends the inventory information to the appliance and inventory is uploaded to the appliance. The Agent logs display these actions.
- **Scripting Updater**: A request is initiated periodically from the device to get the latest information related to the changes in offline KScripts. Scripting Updater logs display this information.
- **Agentless Inventory Status Messages**: The log displays messages related to collecting and submitting inventory data from Agentless-managed devices.

| Section | Description | Database field |
|---|---|---|
| Agent Logs | The logs for the KACE Agent. | N/A |
| Agent Diagnostic Files | Files uploaded by selecting **Choose Action > Upload Agent Files**on this page. | N/A |
| User Console Installation Logs | Details about User Console packages installed on this device. | N/A |
| Scripting Logs | Scripts, such as Configuration Policy scripts, that have run on this device, along with the available status of any scripts in progress. | N/A |
| Server-side Device Log Data | Log entries for the selected device. This section shows the last five entries of each related log, allowing you to troubleshoot any existing issues. | N/A |
| Device Activity | **Chrome devices only**. It shows the date the device was last active, the length of time the device was active for, and the activity history. Each entry in the activity history shows the date and length or each user session. | N/A |

### Asset group

This section displays the details of the Asset associated with this device. Clicking the **Edit this Asset** link enables you to edit the asset information.

| Section | Description | Database field |
|---|---|---|
| Asset Information | Details such as the date and time the record was created and last modified; the Asset Type, such as device; and the name of the asset. | N/A |
| Barcodes | Barcodes associated with this asset, if they exist. | N/A |

| Section | Description | Database field |
|---|---|---|
| Related Assets | Assets that are related to this asset, such as parent or child assets. | N/A |
| Task History | A list of tasks that have run on the device. | N/A |

# About Dell Data Protection | Encryption (DDP|E) and encryption information in device details

If devices in the network have the DDP|E client installed, the appliance can collect status and configuration information and display it on the *Device Detail* page.

### Registry key needed to be set on Windows DDP|E client

A requirement for the appliance being able to collect detailed inventory from Windows DDP|E clients is to set the `DumpXmlInventory` key in the client.

```
Key: HKLM\SYSTEM\CurrentControlSet\services\DellMgmtAgent\Parameters
DWORD Value: DumpXmlInventory
Data: 0x1
```

This registry value causes DDP|E to write an `inventory.xml` file to the target device, which is then parsed by inventory. See Add a Dump Inventory registry key to permit inventory collection on Windows DDP|E client devices.

This requirement applies only to Windows.

### Dell Data Protection | Encryption (DDP|E)

DDP|E consists of applications that enable a user to:

- Detect data security risks on desktops, laptops, and external media.
- Protect data on these devices by enforcing access control policies, authentication, and encryption of sensitive data.
- Manage data centrally with policies using collaborative tools that integrate into existing user directories.
- Support key and data recovery, automatic updates, and tracking for protected devices.

**Table 11. Supported OSs for DDP|E**

| Operating system | Versions |
|---|---|
| Windows | 7, 8, 8.1 |
| Mac OS X | 10.7.5, 10.8.3–10.8.5, 10.9.2–10.9.3 |

**Table 12. DDP|E information displayed on the Device Detail page**

| Item | Description | MACHINE_DDPE Database field |
|---|---|---|
| Unique ID | An identification of the DDP|E client used by the DDP|E server. | MCID |
| Agent Version | Version of DDP|E client installed. | AGENT_VERSION |

| Item | Description | MACHINE_DDPE Database field |
|---|---|---|
| Server Hostname | Hostname of the DDP\|E server managing this DDP\|E client. | SERVER_HOSTNAME |
| Protection Status | Example values are *Protected* and *Unprotected*. Values of *Locked* or *Unknown* might indicate a problem. | PROTECTION_STATUS |
| Last Inventory Generated | Timestamp of when the last DDP\|E client inventory occurred. Not to be confused with K1 inventory. | PROTECTION_STATUS_UPDATED |

**Table 13. DDP|E Volume information displayed on the Device Detail page**

| Item | Description | MACHINE_DDPE_VOLUME Database field |
|---|---|---|
| Device | Name of the device/volume as reported by the operating system. | DEVICE_ID |
| Protection Status | Indication of the current level/status of DDP\|E protection on the DDP\|E client. | PROTECTION_STATUS |
| Protection Reason | Manner of protection used on the DDP\|E client. The option is typically *VendorProtected*, which indicates DDP\|E or BitLocker. | PROTECTION_REASON |

### BitLocker

BitLocker is a full disk encryption feature included with Windows.

**Table 14. Supported OSs for BitLocker**

| Operating system | Versions |
|---|---|
| Windows | Vista, 7 (Enterprise and Ultimate) |
| Windows | 8, 8.1 (Pro and Enterprise) |
| Windows server | 2008, 2008 R2, 2012, 2012 R2 |

**Table 15. BitLocker information displayed on the Device Detail page**

| Item | Description | MACHINE_BITLOCKER_VOLUME Database field |
|---|---|---|
| Device ID | Unique identifier for the volume on the system. | DEVICE_ID |
| Persistent Volume ID | A persistent identifier for the volume on the system. | PERSISTENT_VOLUME_ID |

| Item | Description | MACHINE_BITLOCKER_VOLUME Database field |
|---|---|---|
| Protection status | Denotes whether BitLocker is protecting the volume.<br>• Protection Off<br>• Protection On<br>• Protection Unknown | PROTECTION_STATUS |
| Metadata Version | Possible values:<br>• 0<br>• 1<br>• 2 | VERSION |
| Encryption Method | Type of encryption used. For example, *AES-128*. Possible values:<br>• None<br>• AES-128 with Diffuser<br>• AES-256 with Diffuser<br>• AES-128<br>• AES-256<br>• Encrypted<br>• Unknown | SELF_ENCRYPTION_DRIVE _ENCRYPTION_METHOD (self-encrypting drives only)<br>ENCRYPTION_METHOD (software-based encryption only) |
| Hardware Encryption Status | **NOTE:** The Hardware Encryption Status property is supported on Windows 8 and higher systems.<br>Possible values:<br>• Unknown<br>• Not Supported<br>• No Protection<br>• Uses Software<br>• Uses Hardware | HARDWARE_ENCRYPTION_STATUS |
| Lock Status | Possible values:<br>• Unknown<br>• Unlocked<br>• Locked | LOCK_STATUS |

| Item | Description | MACHINE_BITLOCKER_VOLUME Database field |
|---|---|---|
| Conversion Status | Status of the conversion. Possible values:<br>• Unknown<br>• Fully Decrypted<br>• Fully Encrypted<br>• Encryption In Progress<br>• Decryption In Progress<br>• Encryption Paused<br>• Decryption Paused | CONVERSION_STATUS |
| Encryption Percentage | The extent of conversion, shown as a percentage. | ENCRYPTION_PERCENTAGE |
| Wiping Status | Status of any wiping of free space. Possible values:<br>• Unknown<br>• Free Space Not Wiped<br>• Free Space Wiped<br>• Free Space Wiping In Progress<br>• Free Space Wiping Paused | WIPING_STATUS |
| Wiping Percentage | The extent of free space wiping, shown as a percentage. | WIPING_PERCENTAGE |
| Key Protectors | Key protectors in place. Possible values:<br>• Unknown<br>• Trusted Platform Module (TPM)<br>• External Key<br>• Numerical Password<br>• TPM and PIN<br>• TPM and Startup Key<br>• TPM and PIN and Startup Key<br>• Public Key<br>• Passphrase<br>• TPM Certificate<br>• CryptoAPI Next Generation (CNG) Protector | KEY_PROTECTORS |

**FileVault 2**

FileVault 2 is a full disk encryption feature included with Mac OS X.

**Table 16. Supported OSs for FileVault 2**

| Operating system | Versions |
|---|---|
| Mac OS X | 10.8, 10.9, 10.10 |

**Table 17. FileVault 2 information displayed on the Device Detail page**

| Item | Description | MACHINE_FILEVAULT_VOLUME Database field |
|---|---|---|
| Enabled | Indicates if FileVault is enabled. | IS_ENABLED |
| Personal Recovery Key | Indicates the existence of a Personal Recovery Key. | HAS_PERSONAL_RECOVERY_KEY |
| Institutional Recovery Key | Indicates the existence of a corporate-provisioned X.509-based asymmetric key pair. | HAS_INSTITUTIONAL_RECOVERY_KEY |
| Authorized Users | A list of accounts that can unlock the drive in EFI. | AUTHORIZED_USERS |
| Conversion Status | The status of the encryption process. Examples include *Pending Conversion*, *Converting*, *Encryption Paused*, and *Complete*. | CONVERSION_STATUS |
| Conversion Percentage | The extent of conversion, shown as a percentage. | CONVERSION_PERCENTAGE |
| Encryption Status | Status of the encryption. For example, *Locked* or *Unlocked*. | ENCRYPTION_STATUS |
| Encryption Type | Type of encryption used. For example, *AES-XTS*. | ENCRYPTION_TYPE |
| Device | Unique identifier for the volume on the system. | DEVICE_ID |
| Version | | VERSION |

### Trusted Platform Module (TPM)

TPM is a dedicated microprocessor that secures hardware by integrating cryptographic keys into devices.

**Table 18. Supported OSs for TPM**

| Operating system | Versions |
|---|---|
| Windows | Vista, 7, 8, 8.1 |
| Windows Server | 2008, 2008 R2, 2012, 2012 R2 |

**Table 19. TPM information displayed on the Device Detail page**

| Item | Description | MACHINE_TPM Database field |
|---|---|---|
| Manufacturer | Manufacturer of the TPM chip. | MANUFACTURER_ID_TEXT |
| Manufacturer Version | Version of the TPM chip. | MANUFACTURER_VERSION |
| Manufacturer Version Info | Additional version information that is specific to the manufacturer. | MANUFACTURER_VERSION_INFO |
| Specification Version | The version of the Trusted Computing Group (TCG) specification that the TPM supports. | SPECIFICATION_VERSION |
| Physical Presence Version | The version of the Physical Presence Interface that the device supports. The Physical Presence Interface is a communication mechanism that runs device operations that require physical presence. | PHYSICAL_PRESENCE_VERSION_INFO |
| TPM Enabled | Step 1 of TPM initialization. | IS_TPM_ENABLED |
| TPM Activated | Step 2 of TPM initialization. | IS_TPM_ACTIVATED |
| TPM Owned | Step 3 of TPM initialization. | IS_TPM_OWNED |

# Add a Dump Inventory registry key to permit inventory collection on Windows DDP|E client devices

If `DumpXmlInventory` is absent on a Windows DDP|E client, the appliance cannot get access to the inventory .xml file in order to collect the relevant field information.

Dell Data Protection | Encryption is installed on the Windows device. Go to http://www.dell.com/support/home/us/en/19/product-support/product/dell-data-protection-encryption/drivers.

The procedure for adding the key is different for Agent-managed devices and Agentless-managed devices.

- Add the DumpXmlInventory registry key to an Agent-managed Windows device
- Add the DumpXmlInventory registry key to an Agentless-managed Windows device

## *Add the DumpXmlInventory registry key to an Agent-managed Windows device*

You must add `DumpXmlInventory` to a Windows DDP|E client before the appliance can collect field information from that client's inventory.xml file.

For Agent-managed Windows devices, you can use a default offline KScript from the appliance scripting feature to set the "dump inventory" registry key. This key is necessary for the DDP|E agent to write the detailed inventory XML data to the appliance file system.

**NOTE:** After you set the registry key, the DDP|E service requires a full policy update schedule before the appliance is able to collect inventory.

1. Go to the *Script Detail* page for the *K1000 Enable Detailed DDPE Inventory (Windows)* script.
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General

Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Scripting**, then click **Scripts**.

c. From the list, select **K1000 Enable Detailed DDPE Inventory (Windows)**.

2. In the *Configure* section, specify script settings:

| Option | Description |
|---|---|
| **Name** | *K1000 Enable Detailed DDPE Inventory (Windows)*, the name of this default script. |
| **Enabled** | Select this check box to run the script on the target devices. Do not enable a script until you are finished testing it and are ready to run it. Enable the script on a test label before you enable it on all devices. |
| **Type** | The script type is **Offline KScripts**. |
| **Status** | Indicates the readiness of the script to be rolled out to the network. Set the status to **Production**. |
| **Description** | Contains the brief description of the actions the default script performs. |
| **Notes** | Any additional information you want to provide. |

3. In the *Deploy* section specify deployment options:

| Option | Description |
|---|---|
| **All Devices** | Deploy to all devices. Clear the check box to limit the deployment to specific labels or devices. |
| **Labels** | Limit deployment to devices that belong to specified labels. To select labels, click **Edit**, drag labels to the *Limit Deployment to* window, then click **Save**.<br>If you select a label that has a Replication Share or an alternate download location, the appliance copies digital assets from that Replication Share or alternate download location instead of downloading them directly from the appliance.<br>**NOTE:** The appliance uses a Replication Share before it uses the KACE Alt Location. |
| **Devices** | Limit deployment to one or more devices. To find devices, begin typing in the field. |
| **Operating Systems** | The operating systems on which the application runs. Applications are deployed only to devices with the selected operating systems.<br>a. Click **Manage Operating Systems**.<br>b. In the **Operating Systems** dialog box that appears, select the OS versions in the navigation tree, as applicable.<br>You have an option to select OS versions by their family, product, architecture, release ID, or build version. You can choose a specific build version, or a parent node, as needed. Selecting a parent node in the tree automatically selects the associated child nodes. This behavior allows you to select any future OS versions, as devices are added or upgraded in your managed environment. For example, to select all build current and future versions associated with the Windows 10 x64 architecture, under **All** > **Windows** > **Windows 10**, select **x64**. |

4. In the *Schedule* section, specify run options:

| Option | Description |
|---|---|
| **None** | Run in combination with an event rather than on a specific date or at a specific time. |
| **Every n hours** | Run at a specified interval. |
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |
| **Run on the nth of every month/ specific month at HH:MM** | Run on the same day every month, or a specific month, at the specified time. |
| **Run on the nth weekday of every month/specific month at HH:MM** | Run on the specific weekday of every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>`* * * * *`<br>`\| \| \| \| +----------day of week (0-6)(Sun=0)`<br>`\| \| \| +----------month (1-12)`<br>`\| \| +----------day of month (1-31)`<br>`\| +----------hour (0-23)`<br>`+----------minute (0-59)`<br>Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (/)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3.<br>Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |

| Option | Description |
|---|---|
| **View Task Schedule** | Click to view the task schedule. The *Task Schedule* dialog box displays a list of scheduled tasks. Click a task to review the task details. For more information, see View task schedules. |

5. Skip the *Dependencies* and *Tasks* sections.
6. Do one of the following:
   - **Click Run Now to immediately push the script to all devices.**

     Use this option with caution. See Using the Run and Run Now commands.
   - **Click Save.**

### *Add the DumpXmlInventory registry key to an Agentless-managed Windows device*

You must add `DumpXmlInventory` to a Windows DDP|E client before the appliance can collect field information from that client's inventory.xml file.

For an Agentless-managed Windows device, the process requires that you create a new Group Policy Object on a Windows Server 2008 or 2012 device so that you can deploy the registry setting to multiple devices in a domain.

1. On a Windows Server 2008 or 2012 device, open the *Group Policy Management Console*.
2. Right-click **Group Policy Objects** and click **New**.
3. Provide a description name for the new GPO (for instance, Dell Data Protection | Encryption: Inventory Registry Setting) and click **OK**.
4. Right-click the new GPO and click **Edit**.
5. Browse to **Computer Configuration** > **Preferences** > **Windows Settings** > **Registry**.
6. Right-click **Registry** and select **New** > **Registry Item**.
7. On the *General* tab, select **Update** in the *Action* drop-down menu.
8. Select **HKEY_LOCAL_MACHINE** in the *Hive* drop-down list.
9. Specify a *Key Path* of `SYSTEM\CurrentControlSet\services\DellMgmtAgent\Parameters`.
10. Specify a *Value* name of DumpXmlInventory.
11. Select **REG_DWORD** in the *Value type* drop-down list.
12. Specify 1 in the *Value* data field.
13. Select the *Hexadecimal* option in the *Base* group, and click **OK**.
14. Close the *Group Policy Management Editor*.

You can now link this new group policy object to a specific domain, Organizational Unit, and so on.

**IMPORTANT: You should test the GPO on a specific computer or set of computers before deploying it to all systems.**

# About Intel AMT information in device details

On Intel-based Windows devices with Intel AMT technology present, the appliance can display information about the AMT configuration.

Intel AMT is hardware-based technology for remotely managing Intel-based computer devices. Intel AMT is a feature of Intel® Core™ processors with Intel® vPro™ technology.

**NOTE:** The data collection discussed here is separate from the vPro and AMT data that the appliance collects using Dell Command | Monitor. See About Dell Command | Monitor.

### Intel AMT resources and appliance requirements

For information from the Dell Tech Center, go to http://en.community.dell.com/techcenter/enterprise-client/w/wiki/7537.dell-command-intel-vpro-out-of-band. For information and download link for the Intel Setup and Configuration Software (SCS), which contains the components required to configure Intel AMT, go to http://www.intel.com/content/www/us/en/software/setup-configuration-software.html.

In order for the appliance to get access to the complete inventory information on an AMT device, the device must have the Intel Management Engine installed. For driver downloads from Intel, go to https://downloadcenter.intel.com/search?keyword=intel+management+engine.

### Intel AMT information

**Table 20. Intel AMT information displayed on the Device Detail page**

| Item | Description | MACHINE_INTEL_AMT Database field |
|---|---|---|
| SKU | The Stock Keeping Unit of the device. Possible values are:<br>• Full AMT Manageability<br>• Standard Manageability | SKU |
| Status | Indicates whether AMT is configured on the device. | STATE<br>IS_AMT_CONFIGURED |
| Configuration Mode | The current configuration mode of the AMT device. Possible values are:<br>• SMB Mode<br>• Enterprise Mode<br>• None | CONFIGURATION_MODE |
| Control Mode | The current Control Mode of the AMT device. Possible values are:<br>• Client control Mode<br>• Admin Control Mode<br>• None | CONTROL_MODE |
| Firmware Version | The version of firmware in the AMT device. | FW_VERSION |
| MEI Driver | Indicates if the MEI driver is installed and working, and if so, the version of the driver. | IS_MEI_ENABLED<br>MEI_VERSION |

# Finding and managing devices

Use Advanced Search, labels, and alerts to find and manage devices in inventory.

# Finding devices in inventory

Advanced Search enables you to specify values for any field present in the inventory record and search the entire inventory for those values.

This type of search is useful when you want to find devices with specific characteristics, such as a particular BIOS version, MAC address, or operating system. See Searching at the page level with advanced options.

You can also run a simple search to quickly find a specific device. For example, you can look for a device whose barcode contains specific characters.

#### Using alerts to find devices

You can configure alerts to automatically send email messages to administrators when devices meet the criteria you select. For example, if you want to notify administrators when devices approach disk space limits, you can set up email alerts based on disk usage. See Add notification schedules from the Reporting section.

#### Filtering devices by Organizational Unit

To filter devices based on Organizational Units found in LDAP or Active Directory servers, you can use LDAP Labels. See About LDAP Labels.

# Labeling devices to group them

You can use manual labels and Smart Labels to group devices. Doing so makes it possible to perform actions, such as updating software, on devices as a group.

To enable the metering of Software Catalog applications, you must apply a metering-enabled label to the devices on which the applications are installed. For more information about metering, see Using software metering.

## *Add, apply, and remove manual device labels*

You can add manual labels and apply them to, or remove them from, devices. Manual labels remain associated with devices until the labels are manually removed from devices.

1. Go to the *Devices* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Devices**.
2. Select the check boxes next to one or more devices.
3. Select **Choose Action** > **Add Label**.
4. In the *Add Label* text box, enter a name for the label.

    **TIP:** Avoid using backslashes (\) in label names. If you need to use a backslash in a label name, add a second backslash (\\) to escape it.

5. Click **Add Label**.
6. To apply an existing label:
    a. Select the check box next to one or more devices.
    b. Select **Choose Action** > **Apply Labels**.
    c. Drag labels into *Apply these labels*, then click **Apply Labels**.

    **The label appears next to the device name on the *Devices* list.**
7. To remove a manual label:
    a. Select the check box next to one or more devices.

b. Select **Choose Action > Remove Label > Label_Name**.

**The label is removed from the devices.**

### *Using Smart Labels for devices*

Use Smart Labels to find and label devices automatically based on specified criteria.

For example, to track laptops in a specific office, you could create a label called “San Francisco Office,” and create a Smart Label based on the IP address range or subnet for devices located in the San Francisco office. Whenever a device that falls within the IP address range is inventoried, the Smart Label “San Francisco Office” is automatically applied. When the device leaves the IP address range, and is inventoried again, the label is automatically removed.

Smart Labels are applied to and removed from managed devices when the appliance processes device inventory. So if you create a Smart Label that enables metering on devices, it might take time for the Smart Label to be applied to devices and for devices to report metering information. Metering is enabled for devices that match the Smart Label criteria only after devices are inventoried and the Smart Label is applied.

For more information, see Managing Smart Labels.

The following table lists examples of useful Smart Labels that can be applied to devices based on inventory attributes:

| Sample Label Name | Sample Criteria |
|---|---|
| Win7 Low Disk | Windows 7 devices with less than 1 GB of free hard disk space |
| WS2012 No 2916993 | Windows Server 2012 devices without Hotfix 2916993 installed |
| Building 3 | Devices in an IP address range known to originate in Building 3 |
| CN Sales | Devices whose device name contains the word **sales** |

## Run actions on devices

You can use Device Actions to run actions on devices remotely, provided that those programs are installed on the remote devices.

You have created Device Actions from which to choose. For information on adding or editing Device Actions, see Configure appliance General Settings without the Organization component.

**NOTE:** This feature is only supported on Windows devices. The Windows device you are running the device action from must have the KACE Agent version 9.0 or later agent installed and connected.

**NOTE:** When you initiate device through the agent, the action executable must be placed in your `%PATH%`. The agent is 32-bit, so on 64-bit Windows devices, use `%windir%/System32` as an alias to the `%windir%/Wow64` directory. If you need to run a program that's located in the `%windir%/System32` directory on a 64-bit Windows system, you must use the `%windir%/SysNative` virtual directory. You can either add `%windir%/SysNative` to your `%PATH%` environment variable or provide a fully-qualified path by prepending `%windir%/SysNative` to your executable when defining your machine action.

1. Go to the *Device Detail* page for a device:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **Devices**.
   c. On the *Devices* list, in the row that contains the required device, select the check box.
2. Select an action in the *Actions* drop-down list.

**NOTE:** If no Device Actions have been created, the *Actions* drop-down list does not appear.

**TIP:** Assigning devices to a user (**Choose Action > Assign To**) causes all of the assigned devices to appear listed for the selected user on the *My Devices* page in the User Console. When the user attempts to download and install software, they can select a target device, as required.

# View devices that have been added manually

Devices that have been added manually appear on the *Devices* list along with other managed devices. You can use Advanced Search to filter the *Devices* list to show only those devices that have been added manually.

1. Go to the *Devices* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Devices**.
2. To filter the list to show only those devices that have been added manually:
    a. Click the **Advanced Search** tab above the list on the right to display the *Advanced Search* panel.
    b. Specify the criteria required to find devices that have been added manually:

| Option | Criteria |
|---|---|
| **Field Name** | Device Identity Information: Inventory Type |
| **Operator** | is |
| **Value** | Choose one of the following:<br>• **Wsapi Agent**: Inventory uploaded through the API.<br>• **XML Import**: Inventory uploaded on the *Software Detail* page. |

    c. Click **Search**.

Devices that have been added manually are displayed.

# Delete devices from inventory

If you have unused or obsolete devices in inventory, you can delete them manually. This deletion prevents the devices from being counted toward the number of devices you are allowed to manage through your Quest KACE license.

1. Go to the *Devices* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Devices**.
2. Select the check box next to one or more devices.
3. Select **Choose Action** > **Delete**, then click **Yes** to confirm.

# Registering KACE Agent with the appliance

The appliance uses a registration process to prevent unauthorized access to its resources. Only authenticated KACE Agents can establish a successful connection.

Any Agents that attempt to connect to the appliance are placed on a quarantine list. If an Agent has a valid token, the appliance authenticates the Agent and automatically grants access to the appliance. Agents that do not have a token remain in the quarantine until a system administrator approves their connection request.

You can create and manage Agent tokens, and manage requests from quarantined Agents to connect to the appliance.

## Manage KACE Agent tokens

KACE Agent tokens enable the appliance to authenticate and register Agents, allowing them to access the appliance resources.

Each token can be associated with one or more Agents. Use the *Agent Token Detail* page to create or modify Agent tokens. This page also identifies all devices that used a specific token to connect to the appliance, and allows you to download Agent installers that include the selected token.

Any Agents that do not have a valid token must be approved by the appliance administrator in order to establish a successful connection. For more information, see Review quarantined KACE Agents.

1. Do one of the following:
   - **Log in to the appliance Administrator Console, `https://appliance_hostname/admin`. Or, if *Show organization menu in admin header* is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.**
   - **Log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System from the drop-down list in the top-right corner of the page.**

   **The *Dashboard* or *System Dashboard* page appears.**
2. Go to the *Agent Token Detail* page:
   a. On the left navigation bar, click **Settings**, then click **Agent Tokens**.

   **The *Agent Tokens* page appears, displaying the list of all Agent tokens. For each token, it shows a token status, the name of the user who created it, expiration date (if applicable), the number of times the token is used to register an Agent device with the appliance, and the usage limit (if applicable).**
3. On the *Agent Tokens* list page that appears, complete one of the following steps:
   - **To create a new Agent token, click Choose Action > New.**

     **TIP:** To delete or revoke one or more tokens, select them in the list, and use the applicable commands from the **Choose Action** menu. You can also perform this action on the *Agent Token Detail* page.
   - **To edit an existing Agent token, click the token name in the list.**
4. On the *Agent Token Detail* page that appears, under *Configuring*, provide the following information:

| Option | Description |
|---|---|
| **Name** | The name of the Agent token. Choose a name that you can easily recognize and associate with a specific agent, platform, or purpose. |

| Option | Description |
|---|---|
| **Expires** | If you want this token to be valid for a limited time, select **Enable Expiration**, and specify the expiration date and time, as required.<br>To change the specified date and time, click **Clear**, and provide the new expiration deadline. |
| **Organization** | The name of the organization that uses this token. You can select one specific organization, or apply to all organizations by selecting *All Orgs*.<br>**NOTE:** This field only appears if you are using the System Administration Console. |

5. If you want to specify the number of times the token can be used to register one or more agents with the appliance, under *Use Limit*, select **Enable Use Limit**, and in the field that appears, specify the maximum use count.

   **Unless an agent's history is deleted from the appliance, the agent registers with the appliance only once, so this number represents the total number of times one or more agents can register with the appliance.**

6. Click **Save**.

   **If you created a new Agent token, the page displays some additional sections:** *Information*, *Agent Token Bundle Installers*, *Token Usage by Machines*, **and** *Token Usage by Provisioning Schedules*.

7. **Optional**. Review the contents of the following sections:

| Section | Description |
|---|---|
| **Information** | General information about the Agent token, such as when it was created, last modified, the name of the user who created it, its status, and the token string.<br>To copy the token string to clipboard, in the *Token* field, click the icon. You can specify the token string while installing the KACE Agent on a target device. For more information about agent installation, see Manually deploying the KACE Agent. |
| **Agent Token Bundle Installers** | Links to KACE Agent installers for each supported operating system. Each installer bundle includes this Agent token. |
| **Token Usage by Machines** | A list of devices in the appliance inventory that use this Agent token, and the date and time the appliance administrator approved access for each device. |
| **Token Usage by Provisioning Schedules** | A list of provisioning schedules that use this Agent token. For each entry, the list indicates the IP range and whether the schedule is enabled. |

# Review quarantined KACE Agents

The appliance keeps track of any agents that request a connection to the appliance.

In a default view, the *Quarantine* list page only shows the Agents that are waiting for registration. You can use it to review and register applicable Agents. To display already connected Agents, simply change the list filter.

**NOTE:** On the *Quarantine* list page, the *Zone* column shows each agent as *Internal* or *External*. If you configure your firewall to map port 443 externally to port 52230 of the appliance, Agents that connect through the firewall to port 443 show up as External on this page. Agents that connect directly to the appliance's port 443 appear as Internal. This feature is optional, but you can use it, for example, if the appliance is hosted in a perimeter network. For more details. see https://go.kace.com/to/k1000-external-agent-port.

Agents that include a valid token are automatically connected. For more information about tokens, see Manage KACE Agent tokens.

1. Go to the *Quarantine* list page by doing one of the following:

   - **If your appliance has the Organization component enabled, and you want to access a System-level quarantine list:**

     Log in to the appliance System Administration Console, `https://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page. Then select **Organizations > Quarantine**.
     A System-level quarantine list includes the Agents associated with all organizations managed by the appliance.

   - **If your appliance does not have the Organization component enabled, or if you want to access an organization-level quarantine list, log in to the appliance Administrator Console, `https://`appliance_hostname`/admin`. Or, if the** *Show organization menu in admin header* **option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information. Then select Inventory > Quarantine.**

     An organization-level quarantine list includes only the Agents associated with the selected organization.

   **The** *Quarantine* **list page appears. By default, the list uses the** *Awaiting Action* **filter, showing only those Agents that require approval. You can apply different filters to display** *All Items*, **and** *Approved* **or** *Blocked Agents*. **When you display the** *Approval Status* **column you can see which agents are** *Approved*, *Blocked*, **and** *Awaiting Action*.

2. Review the items in the list and approve any Agents, as required.

   **To approve one or more Agents, select them in the list, and click Choose Action > Approve. You can also block or delete Agents, as required. Blocking a quarantined agent only removes it from the** *Awaiting Action* **view on the** *Quarantine* **list page. You can block an agent that you do not want to consider approving, in general. To remove a blocked agent from all views, you may want to delete it. A blocked agent reappears on the** *Awaiting Action* **view if it attempts a re-connection. For example, if you see a suspicious host name coming from an external agent, you can either block or delete that agent. Blocked status is intended to be a permanent list of blocked devices that stay hidden from Awaiting Action view, that are not intended to be approved at any point.**

3. To find out more about a quarantined Agent:
   a. Click the Agent's name in the list.
   b. On the *Quarantine Detail* page that appears, review the Agent's details.

      **This page shows the details about the selected KACE Agent, such as the name of the device on which the Agent is installed, the device's MAC address, and so on. If the Agent used a token to connect to the appliance, the token name appears on the page. This page also allows you to approve, block, or delete Agents.**

   c. When done, click **Cancel**.

4. **System-level Agents only**. If you want to associate a System-level Agent with a specific organization, select it in the list and click **Choose Action > Assign to Organization > <***organization name***>**

   **The selected Agent record now appears in the organization-level** *Quarantine* **list page, allowing the organization's administrator to review and register this Agent, as applicable. If an Agent is approved without being assigned to an organization, Organization filters are used to assign the agent to an organization after its first inventory.**

# Provisioning the KACE Agent

Agent provisioning is the task of installing the KACE Agent on devices you want to add to appliance inventory using the Agent.

### About the KACE Agent

The KACE Agent is an application that can be installed on devices to enable inventory reporting and other device management features.

Agents that are installed on managed devices communicate with the appliance through an agent messaging protocol. Agents perform scheduled tasks, such as collecting inventory information from, and distributing software to, managed devices. Communication between an Agent and the appliance occurs over a proprietary KACE tunnel which is encrypted using the TLS 1.3 protocol. The agent sends and receives unencrypted data through the TLS 1.3-encrypted KACE tunnel.

Agentless management is available for devices that cannot have Agent software installed, such as printers and devices with operating systems that the Agent does not support. See Using Agentless management.

### Tracking changes to Agent settings

If History subscriptions are configured to retain information, you can view the details of the changes made to settings, assets, and objects.

This information includes the date the change was made and the user who made the change, which can be useful during troubleshooting. See About history settings.

### Methods for provisioning the KACE Agent

You have a number of ways to deploy the KACE Agent to the devices you want to manage.

- **Provision using the Agent Provisioning Assistant**: You can use the Agent Provisioning Assistant to perform provisioning for devices with Windows, Mac OS X, and Linux operating systems. Within the Assistant, you can choose between using the appliance GPO Provisioning Tool for deploying the Agent to Windows devices, or using Onboard Provisioning for deploying the Agent to Windows, Mac OS X, or Linux devices.

  The GPO Provisioning Tool is recommended for Windows devices because using the tool minimizes the pre-configuration that must happen on the target device. It requires an Active Directory environment. The onboard provisioning approach requires you to perform client-side configuration on the devices to be managed before you can start provisioning.

- **Provision using manual deployment**: Manual deployment is useful when automated Agent provisioning is not practical or when you want to deploy the KACE Agent using email or logon scripts.

**Related topics**

Provisioning the KACE Agent using the GPO Provisioning Tool for Windows devices

Provisioning the KACE Agent using onboard provisioning

Manually deploying the KACE Agent

# Enabling file sharing

To provision Agent software, you must enable file sharing.

If the Organization component is enabled on your appliance, see Enable file sharing at the System level. Otherwise, see Enable file sharing without the Organization component enabled.

## *Enable file sharing at the System level*

If the Organization component is enabled on your appliance, you must enable file sharing at the System level to provision the Agent.

**NOTE:** If the Organization component is not enabled on your appliance, follow the instructions in Enable file sharing without the Organization component enabled.

1. Go to the *Security Settings* page:

a. Log in to the appliance System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page.
b. On the left navigation bar, click **Settings**, then click **Control Panel**.
c. On the *Control Panel*, click **Security Settings**.

2. In the *Samba* section, specify the following settings:

| Option | Description |
|---|---|
| For appliances with the Organization component enabled:<br>**Enable Organization File Shares** | Use the appliance's client share to store files, such as files used to install applications on managed devices.<br>The appliance's client share is a built-in Windows file server that the provisioning service can use to assist in distributing the Samba client on your network. Quest recommends that this file server only be enabled when you perform application installations on managed devices. |
| **Require NTLMv2 authentication to appliance file shares** | Enable NTLMv2 authentication for the appliance files shares. When this setting is enabled, managed devices connecting to the appliance File Shares require support for NTLMv2 and authenticate to the appliance using NTLMv2. Even though NTLMv2 is more secure than NTLM and LANMAN, non-NTLMv2 configurations are more common and this option is usually turned off. Enabling this option disables **lanman auth** and **ntlm auth** on the Samba server. NTLMv2 Levels 1-4 are supported. If you need NTLM v2 Level 5, consider manually provisioning the KACE Agent. See Manually deploying the KACE Agent. |
| **Require NTLMv2 to off-board file shares** | Force certain appliance functions that are supported through the Samba client, such as Agent Provisioning, to authenticate to offboard network file shares using NTLMv2. Even though NTLMv2 is more secure than NTLM and LANMAN, non-NTLMv2 configurations are more common and this option is usually disabled. Enabling this option enables the **client ntlmv2 auth** option for Samba client functions. |

3. Click **Save**.
4. If prompted, restart the appliance.

When the appliance restarts, enable file sharing at the organization level. See Enable organization-level file sharing with the Organization component enabled.

## *Enable organization-level file sharing with the Organization component enabled*

If the Organization component is enabled on your appliance, you must enable file sharing at the organization level to provision the Agent.

Verify that organization file shares are enabled. For instructions, see Enable file sharing at the System level.

1. Go to the Admin-level *General Settings* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **Control Panel**.
   c. On the *Control Panel*, click **General Settings**.
2. Select **Enable File Sharing** in the *Samba Share Settings* section.

**If File Shares are disabled, you must enable them at the System level. See Configure security settings for the appliance.**

3. **Optional**: Enter a password for the File Share User.
4. Click **Save Samba Settings**.
5. If prompted, restart the appliance.
6. If you have multiple organizations, repeat the preceding steps for each organization.

### *Enable file sharing without the Organization component enabled*

If the Organization component is not enabled on your appliance, you must enable file sharing in the appliance security settings to provision the Agent.

1. Go to the *Security Settings* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Settings**, then click **Control Panel**.
    c. On the *Control Panel*, click **Security Settings**.
2. In the *Samba* section, select **Enable File Sharing**.
3. **Optional**: Select authentication options:

| Option | Description |
|---|---|
| **Require NTLMv2 to authenticate appliance file shares** | Enable NTLMv2 authentication for the appliance files shares. When this setting is enabled, managed devices connecting to the appliance File Shares require support for NTLMv2 and authenticate to the appliance using NTLMv2. Even though NTLMv2 is more secure than NTLM and LANMAN, non-NTLMv2 configurations are more common and this option is usually turned off. Enabling this option disables **lanman auth** and **ntlm auth** on the Samba server. NTLMv2 Levels 1-4 are supported. If you need NTLM v2 Level 5, consider manually provisioning the KACE Agent. See Manually deploying the KACE Agent. |
| **Require NTLMv2 authentication to off-board file shares** | Force certain appliance functions that are supported through the Samba client, such as Agent Provisioning, to authenticate to offboard network file shares using NTLMv2. Even though NTLMv2 is more secure than NTLM and LANMAN, non-NTLMv2 configurations are more common and this option is usually disabled. Enabling this option enables the **client ntlmv2 auth** option for Samba client functions. |

4. Click **Save**.
5. If prompted, restart the appliance.

# Provisioning the KACE Agent using the GPO Provisioning Tool for Windows devices

Of the methods for provisioning the Agent on Windows devices, Quest recommends the GPO Provisioning Tool because using the tool minimizes the pre-configuration that must happen on the target devices.

The GPO Provisioning Tool uses Active Directory® and Group Policy to distribute the installation settings and to perform the installation of the Agent. The tool creates a GPO, or modifies a pre-existing GPO to install the KACE Agent when a device authenticates with Active Directory.

The first time a target device refreshes Group Policy after the tool has completed the creation or modification process, a new Group Policy client-side extension dll is registered on the devices applying this GPO. Then the next time that the device refreshes Group Policy, Windows triggers the newly registered client-side extension to install the KACE Windows Agent.

For the Quest Knowledge Base article that contains the link to download the GPO Provisioning Tool, go to https://support.quest.com/kb/133776.

## *Prepare to use the GPO Provisioning Tool for Agent deployment*

Before you can use the GPO Provisioning Tool to deploy Agents to Windows devices, you must ensure that your system is configured to use the tool.

The following system requirements are necessary for using the GPO Provisioning Tool:

- **Windows 7 and higher**: **Remote Server Administration Tools** (RSAT) enables IT administrators to remotely manage roles and features in Windows Server 2016, Windows Server 2012 R2, or Windows Server 2012, from a computer that is running Windows 8.1, Windows 8, or Windows 7.

  Go to http://social.technet.microsoft.com/wiki/contents/articles/2202.remote-server-administration-tools-rsat-for-windows-client-and-windows-server-dsforum2wiki.aspx.
- **.NET Framework 3.5**.
- **Windows Server 2012 or higher Active Directory Functional Level**.
- **Distribution Share**: Make sure to use a share that everyone can access. For example, do not place the `.msi` file on the NETLOGON share, because not every user can reach that share and the lack of access will cause your upgrade to fail in the future. This location should be a permanently accessible share. The installer is an MSI (Microsoft Installer) file. To uninstall or upgrade software, MSI needs access to the `.msi` file. If it is not accessible, `msiexec` will not uninstall.

## *Provision KACE Agents using the appliance GPO Provisioning Tool*

You can install the KACE Agent on a single device, or on multiple devices by using the appliance GPO Provisioning Tool, starting within the Agent Provisioning Assistant. You can use this method to provision Windows devices.

- You have an Active Directory environment.
- You have appropriate access to set up software installations.
- You have met the system requirement spelled out in Prepare to use the GPO Provisioning Tool for Agent deployment.

To complete this task, you leave the appliance to work in the Windows Group Policy Management Console or the Windows Administrative Tools using the appliance GPO Provisioning Tool before returning to the appliance.

1. Go to the Agent Provisioning Assistant:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **Provisioning**.
   c. On the *Provisioning* panel, click **Agent Provisioning Assistant**.

      **The** *Agent Provisioning Assistant: Step 1 of 3* **page appears.**
2. Select the check box for *Provisioning Using Windows Group Policy (recommended)*, and click **Next** to display the *Agent Provisioning Assistant: Step 2 of 3* page.
3. Click the link to the Knowledge Base article about using the appliance GPO Provisioning Tool for Agent deployment at https://support.quest.com/kb/133776.

   **The Knowledge Base article provides a link to download the MSI for the GPO Provisioning Tool.**

   Installing and starting the tool requires leaving the appliance interface.
4. Download the MSI, and start it to install the tool.
5. Start the installed tool from the **Start** menu.

**The deployment wizard leads you through steps to configure and apply a GPO for software deployment. Where possible, the wizard attempts to use defaults that reduce the amount of configuration required.**

**NOTE:** Only GPOs for which you have permission to **edit** are displayed in the tool.

6. Return to the *Agent Provisioning: Step 2 of 3* page in the appliance when you have completed working in the tool, and click **Next**.
7. Click **Finish** on the *Agent Provisioning: Step 3 of 3* page.

Agents are installed on the client devices after the Group Policy is refreshed on those devices. Depending on the environment, this installation takes place either when the device reboots, or after a 90-minute refresh cycle occurs for the Group Policy.

Go to the *Devices* page to keep track of the progress of devices having the agents installed and checked in.

# Provisioning the KACE Agent using onboard provisioning

You can install the KACE Agent on multiple devices by specifying a range of IP addresses as targets for deployment (onboard provisioning). Windows, Mac OS X, and Linux devices can be targets for onboard provisioning.

After you have prepared each of your target client devices, you use the Agent Provisioning Assistant in the appliance to identify the devices and set up a provisioning schedule.

## *Preparing to install the KACE Agent*

Before you install the KACE Agent on devices using onboard provisioning, you must verify system requirements, enable file sharing, and prepare devices.

For information on file sharing, see Enabling file sharing.

### Verifying system requirements for the KACE Agent installation

Before you install the KACE Agent on devices, verify that the required ports are accessible, and that managed devices meet system requirements.

Managed devices must meet the following system requirements and be able to access the required ports:

- See the *Technical Specifications* available on the product documentation page: https://support.quest.com/kace-systems-management-appliance/technical-documents.
- See Verifying port settings, NTP service, and website access.

### Prepare Windows devices to have the Agent installed

Before you install the KACE Agent on Windows devices, you must configure file sharing and User Account Control (UAC) properly.

- **Prepare a Windows 7 or Windows 8 device**

  Provide Administrator credentials for each device. To install the KACE Agent on multiple devices, the Administrator credentials must be the same for all devices.

  To configure User Account Control (UAC), do one of the following:

  - Set **User Account Control: Run all administrators in Admin Approval Mode** to **Disabled**. This option is recommended, because it is more secure and can be centrally configured using GPO. To find this setting, open the **Group Policy** (type secpol.msc into the *Search programs and files* field

under the **Start** menu), then go to **Local Policies** > **Security Options**. Restart the device after applying the settings.

- Disable UAC. On Windows 7, go to **Control Panel** > **System and Security** > **Action Center** > **Change User Account Control Settings**. On Windows 8, go to **Control Panel** > **System and Security** > **Administrative Tools** > **Local Security Policy**, then in *Security Options* in the *Local Policies* section choose **Disabled** for each of the items labeled *User Account Control*.

On the *Advanced Sharing Settings* page, enable network discovery and file and printer sharing.

- **Prepare Windows Firewall**

  **If Windows Firewall is enabled, you must enable File and Print Sharing in the *Exceptions* list of the Firewall Configuration. For instructions, see the Microsoft Support website.**

- **Verify port availability**

  **Verify the availability of ports 139 and 445.**

  The appliance verifies the availability of ports 139 and 445 on target devices before attempting to run any remote installation procedures.

  **NOTE:** On Windows devices, ports 139 and 445, File and Print Sharing, and Administrator credentials are required only during Agent installation. You can disable access to these ports and services after installation if necessary. The Agent uses port 443 for ongoing communications.

  **NOTE:** After installation, the Agent runs within the context of the Local System Account, which is a built-in account used by Windows operating systems.

## *Install the KACE Agent on a device or multiple devices*

You can install the KACE Agent on a single device, or on multiple devices by specifying a range of IP addresses as targets for installation, using the Agent Provisioning Assistant. You can use this method to provision Windows, Mac, or Linux devices.

- You have prepared all the target devices. See Preparing to install the KACE Agent.
- You have information for the administrator account that has the necessary privileges to install Agents on the target devices.

With the Agent Provisioning Assistant, you can create provisioning schedules to specify how and when to install the KACE Agent on devices in your network. Provisioning according to a schedule is useful to help ensure that devices in an IP address range have the Agent installed.

Provisioning schedules configure the appliance to periodically check devices in a specified IP address range and install, reinstall, or uninstall the KACE Agent as needed.

For provisioning Windows devices, you can also use the appliance GPO Provisioning Tool. Using the tool minimizes the pre-configuration that must happen on the target device. See Provisioning the KACE Agent using the GPO Provisioning Tool for Windows devices.

1. Go to the Agent Provisioning Assistant:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **Provisioning**.
   c. On the *Provisioning* panel, click **Agent Provisioning Assistant**.

   **The *Agent Provisioning Assistant: Step 1 of 3* page appears.**
2. Select *Provisioning Using IP Range (Windows, Mac, Linux)* and click **Next** to display the *Provisioning Schedule Detail* page.
3. In the *Configure* section, name the schedule, enable provisioning, and provide platform information:

| Option | Description |
|---|---|
| **Name** | A unique name that identifies this configuration. The name appears on the *Provisioning Schedules* page. |
| **Enabled** | Enable provisioning schedules. Schedules run only if this check box is selected. |
| **Install/Uninstall** | Indicates whether the provisioning schedule deals with installing or uninstalling Agents. |
| **Agent Token** | The token the Agent uses to connect to the appliance. Select an existing Agent token or add a new one:<br>a. Select *Add Agent Token*.<br>b. In the *Add Agent Token* dialog box, provide the following information:<br>◦ **Name**:<br>◦ **Enable Expiration**: If you want this token to be valid for a limited time, select this check box, and specify the expiration date and time, as required. To change the specified date and time, click **Clear**, and provide the new expiration deadline.<br>◦ **Enable Use Limit**: If you want to specify the number of times the token can be used to register one or more agents with the appliance, select this check box, and in the field that appears, specify the maximum use count. Unless an agent's history is deleted from the appliance, the agent registers with the appliance only once, so this number represents the total number of times one or more agents can register with the appliance.<br>c. Click **Save**.<br>If you do not select an Agent token, when the Agent connects to the appliance for the first time, it remains in the quarantine list until the appliance administrator approves its connection request. For more information, see Registering KACE Agent with the appliance. |
| **Credentials** | Separate rows for the credentials needed to connect to the device and run commands for the particular platform targeted by the schedule. The first column contains the operating system. The second column contains the Agent Version in place for installation. The third column contains a drop-down list from which to select existing credentials. You can select **Add new credential** to add credentials not already listed.<br>See Add and edit User/Password credentials. |

4. In the *Deploy* section, identify the devices to be included in the schedule:

| Option | Description |
|---|---|
| **Target IP addresses or hostnames** | A comma-separated list of the IP addresses or host names of the target devices. Use hyphens to specify individual IP address class ranges.<br>**TIP:** The appliance supports both IPv6 (Internet Protocol version 6) and IPv4 addresses. |

| Option | Description |
|---|---|
| | The **Help me pick devices** link enables you to add devices to the *Target IP addresses or Hostnames* list:<br>• **Provisioning IP Range**: Use hyphens to specify individual IP address class ranges. For example:<br>◦ **IPv6**: fdef:22b9:e8ae:14a9::1a0:f000-f0aa<br>◦ **IPv4**: 192.168.2-5.1-200<br>After specifying a range, click **Add All**<br>• **Select Devices from Discovery**: This drop-down list is populated from the **Discovery Results**. To filter the contents, start typing in the field. After selecting a device, click **Add All**. |

5. Set the time for the schedule to run.

| Option | Description |
|---|---|
| **None** | Run in combination with an event rather than on a specific date or at a specific time. |
| **Every n hours** | Run at a specified interval. |
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |
| **Run on the nth of every month/ specific month at HH:MM** | Run on the same day every month, or a specific month, at the specified time. |
| **Run on the nth weekday of every month/specific month at HH:MM** | Run on the specific weekday of every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>`* * * * *`<br>`\| \| \| \| +————————day of week (0-6)(Sun=0)`<br>`\| \| \| +————————month (1-12)`<br>`\| \| +————————day of month (1-31)`<br>`\| +————————hour (0-23)`<br>`+————————minute (0-59)` |

| Option | Description |
|---|---|
| | Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (/)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3.<br>Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |
| **View Task Schedule** | Click to view the task schedule. The *Task Schedule* dialog box displays a list of scheduled tasks. Click a task to review the task details. For more information, see View task schedules. |

6. **Optional**: Use *Advanced* settings to:
   - Customize the ports the appliance uses to deploy the Agent.
   - Designate an alternative download location for the Agent installer.

     **NOTE:** Newer versions of MS Windows such as Windows 10 do not support downloading files from file shares which prevents alternate location WinRM provisioning to work as expected.
   - Specify the WinRM port used for agent provisioning on Windows devices. For those schedules using a legacy method to provision Windows devices, you have an option to change it to WinRM. For more information about WinRM configuration, see https://support.quest.com/kb/260699/agent-provisioning-with-winrm.
   - Choose the level of information to display in the log. To see only the most important messages, select *Critical*. To see all messages, select *Debug*. Other options include *Error*, *Warning*, *Notice*, and *Info*.
   - Specify the device that you want to use as a relay for agentless device inventory. A relay device that is used during discovery as a relay is used for agentless inventory, when a new device is provisioned automatically from discovery results. For more information, see Add a Discovery Schedule to perform a quick "what and where" scan of your network.
   - Enable a complete uninstall of the Agent. Selecting *Remove KUID during uninstall* results in an existing Agent being removed from the device before the Agent is installed again. In this case, the appliance generates a new KUID for the asset, and it appears as a new device in the appliance.
7. Click **Run now** to display the *Provisioning Schedules* page and the new configuration.

   **The appliance saves the configuration with the name you supplied, and then runs the configuration against the targeted IP addresses.**

The *Provisioning Schedules* page displays the progress of the successful installations after the schedule's start time.

**Related topics**

Power-on the appliance and log in to the Administrator Console

Provisioning the KACE Agent using the GPO Provisioning Tool for Windows devices

Manually deploying the KACE Agent

# Managing provisioning schedules

To streamline the Agent installation process, you can add provisioning schedules that specify how and when to install the KACE Agent on devices. You can add, view, edit, run, duplicate, and delete provisioning schedules.

## *View, run, edit, or duplicate provisioning schedules*

You can view provisioning schedule status and other details on the *Provisioning Schedules* page. From this page you can also run and edit provisioning schedules as needed.

When you duplicate provisioning schedule, its properties are copied into the new configuration. If you are creating a configuration that is similar to an existing configuration, starting with a duplicated schedule can be faster than creating a configuration from scratch.

1. Go to the *Provisioning Schedules* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Settings**, then click **Provisioning**.
    c. On the *Provisioning Panel*, click **Schedules**.

**The list displays the following columns:**

| Option | Description |
|---|---|
| **Name** | The name of the provisioning schedule (links to the *Provisioning Schedule Detail page*). |
| **Targeted** | The total number of target devices in the configuration (links to the *Provisioning Results* page). |
| **Running** | The total number of target devices on which provisioning is running (links to the *Provisioning Results* page). |
| **Pending** | The total number of target devices on which provisioning has not yet started (links to the *Provisioning Results* page). |
| **Succeeded** | The total number of target devices on which provisioning has succeeded (links to the *Provisioning Results* page). |
| **Failed** | The total number of target devices on which provisioning has failed (links to the *Provisioning Results* page). |
| **Success Rate** | The total number of target devices on which provisioning has succeeded as a percentage. |

| Option | Description |
|---|---|
| **IP Range** | The IP address range of the target device. |
| **Schedule** | The specified provisioning schedule. For example: Every**n** minutes, Every **n** hours, or Never. |
| **Enabled** | Whether the configuration is enabled or disabled. A check mark indicates that the provisioning schedule is enabled. |

2. Run provisioning schedules:
    a. Select the check boxes for the schedules that you want to run.
    b. Select **Choose Action** > **Run Now**.
3. Edit schedules:
    a. Click the name of a schedule.
    b. Edit the provisioning schedule on the schedule's *Provisioning Schedule Detail* page, and click **Save**.

    **See Install the KACE Agent on a device or multiple devices.**
4. Duplicate schedules:
    a. Click the name of a schedule.
    b. In the *Advanced* section, click **Duplicate** to display the *Provisioning Schedules* page with the new schedule listed as **Copy of Schedule Name**.

## *Delete provisioning schedules*

You can delete provisioning schedules when you want to remove schedules from the appliance.

When provisioning schedules are deleted, results associated with those schedules are also deleted. Devices provisioned using the schedules, however, are not removed from inventory.

1. Go to the *Provisioning Schedules* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Settings**, then click **Provisioning**.
    c. On the *Provisioning Panel*, click **Schedules**.
2. Select the check box next to one or more schedules.
3. Select **Choose Action** > **Delete**, then click **Yes** to confirm.

## *View provisioning results*

You can view the results of actions performed by provisioning schedules.

1. Go to the *Provisioning Schedules* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Settings**, then click **Provisioning**.
    c. On the *Provisioning Panel*, click **Schedules**.
2. Click a link in the *Running, Pending, Succeeded, or Failed* column.

**The *Provisioning Results* page appears with the following information:**

| Item | Description |
|---|---|
| **Status** | The status of the Agent connection to the appliance:<br>  : An Agent-managed device is connected to the appliance.<br>  : An Agent-managed device is not connected to the appliance. |
| **Schedule Name** | The name of the provisioning schedule. |
| **IP Address** | The IP address of the target device. |
| **Hostname** | The hostname of the target device. Click the **Remote Connection** button to open a Remote Desktop Connection to the target device (Microsoft Edge only):  |
| **Result** | The status of the most recent provisioning attempt. |
| **Action** | **I** indicates a successful installation.<br>**U** indicates a successful uninstallation. |
| **Error** | The failure error, such as TCP ports not accessible. |
| **Last Run** | The last time the schedule ran. |

3. To view additional information about a target device, click its **IP Address**.

   **The** *KACE Agent Provisioning* **page appears.**

   This page displays the results of the most recent provisioning run and includes information such as the IP address, port configuration, and the logs of each provisioning step.

4. To view inventory information, click the **[computer inventory]** link next to the **MAC address**.

   **NOTE:** The **[computer inventory]** link appears only if the provisioning process can match the MAC address of the target device with the current inventory data. See Managing MIA devices.

# Managing Agent communications

Communications between the appliance and Agents installed on managed devices include inventory reports, alerts, patches, scripts, and crash logs. You can configure and view communications that are queued, or pending.

## *Configure Agent communication and log settings*

Agents installed on managed devices periodically check in to the appliance to report inventory, update scripts, and perform other tasks.

You can configure the Agent settings, including the interval at which the Agents check in, messages displayed to users, and log retention time, as described in this section. If you have multiple organizations, you configure Agent settings for each organization separately.

1. Do one of the following:

   - **If the Organization component is enabled on your appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page next to the login information. Then click Organizations. To display the organization's information, click the organization's name.**

On the *Organization Detail* page that appears, locate the *Communication and Agent Settings* section.

- **If the Organization component is not enabled on your appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`. Then select Settings > Provisioning., and click Communication Settings on the *Provisioning* panel.**

  The *Communication Settings* page appears.

2. Specify the following settings:

**NOTE:** To reduce the load on the appliance, limit the number of Agent connections to 500 per hour. The number of connections that appears next to the inventory, scripting, and metering intervals, applies to the current organization only. If the Organization component is enabled on your appliance, the total number of Agent connections for all organizations should not exceed 500 per hour.

| Option | Suggested Setting | Notes |
|---|---|---|
| **Agent Logging** | Enabled | Whether the appliance stores scripting results provided by Agents installed on managed devices. Agent logs can consume as much as 1GB of disk space in the database. If disk space is not an issue, enable *Agent Logging* to keep all log information for Agent-managed devices. These logs can be useful during troubleshooting. To save disk space, and enable faster Agent communication, disable *Agent Logging*. |
| **Agent Debug Trace** | Enabled | If selected, this option allows you to record the Agent's debug trace. This information allows administrators to monitor the Agent's performance, and to diagnose common problems. |
| **Agent Inventory** | 12 hours | The frequency at which Agents on managed devices report inventory. This information is displayed in the *Inventory* section. |
| **Agentless Inventory** | 1 Day | The frequency at which Agentless devices report inventory. This information is displayed in the *Inventory* section. |
| **Catalog Inventory** | 24 hours | The frequency at which managed devices report inventory to the *Software Catalog* page. |
| **Metering** | 4 hours | The frequency at which managed devices report metering information to the appliance. Requires metering to be enabled on devices and applications. |
| **Scripting Update** | 4 hours | The frequency at which Agents on managed devices request updated copies of scripts that are enabled on managed devices. This interval does not affect how often scripts run. |
| **Max Download Speed** | As required | The maximum download speed, as required. Choose from the available options. |
| **Process Timeout** | 1 hour | The maximum length of time the agent process run before being terminated. For more details, visit https://support.quest.com/kb/177093/how-to-allow-more-time-for-a-kace-script-to-run-before-it-times-out-. |
| **Disable Wait for Bootup Tasks** | Disabled | If selected, this option stops the agent from executing bootup tasks. |

| Option | Suggested Setting | Notes |
|---|---|---|
| **Disable Wait for Login Tasks** | Disabled | If selected, this option stops the agent from executing login tasks. |

3. In the *Agent Status Icon Settings* section, specify the following settings:

| Option | Suggested Setting | Notes |
|---|---|---|
| **Agent Status Icon On Device** | Enabled | If selected, this option allows you to display the agent status on managed devices. |
| **Agent Snooze on Device** | Enabled | If selected, this option allows you to suspend the agent's activity on managed devices using the system tray (Windows) or menu bar (Mac OS).<br>**NOTE:** Some critical background tasks are still allowed to run, including inventory, replication tasks, and urgent alerts. |
| **Agent Snooze Max Count (per day)** | 1 snooze | The maximum number of times you can snooze the agent each day on managed devices. |
| **Agent Status Icon Shortcuts** | As required | Use this section to display links in the KACE Agent menu on agent-managed devices. You can specify up to ten links. Standard Uniform Resource Identifier (URI) links are supported, such as `https`, `ssh`, and `ftp` URLs. To add a link:<br>a. Click +.<br>b. In the *Display Name* column, type the text that you want to display in the menu. For example, *My FTP link*.<br>c. In the URL column, type the fully qualified URL address. For example, `https://www.quest.com/`. The URL supports the following replacement variables:<br>◦ $(KACE_SYS_DIR)<br>◦ $(KACE_MAC_ADDRESS)<br>◦ $(KACE_IP_ADDRESS)<br>◦ $(KACE_SERVER_URL)<br>◦ $(KACE_SERVER)<br>◦ $(KACE_COMPANY_NAME)<br>◦ $(KACE_KUID)<br>◦ $(KACE_APP_DIR)<br>◦ $(KACE_DATA_DIR)<br>◦ $(KACE_AGENT_VERSION)<br>For complete information about these and other replacement variables, see Token replacement variables.<br>You can use the column headings to sort the list. In the KACE Agent menu, the links appear in the order they are listed on this page. |

**NOTE:** Any changes that you make in this section take effect only after the KACE Agent on the managed device reconnects to the appliance, either by restarting each individual agent, or the appliance.

4. In the *Notify* section, specify the message to use for Agent communications:

| Option | Suggested Setting | Notes |
|---|---|---|
| **Agent Splash Page Message** | Default text:<br>KACE Service Desk `is verifying your PC Configuration and managing software updates. Please Wait...` | The message that appears to users when Agents are performing tasks, such as running scripts, on their devices. |
| **Agent Splash Bitmap** | As required | The path to an existing .bmp file that you want to use as the splash logo. |
| **Disable Bootup Splash** | Disabled | If selected, this option stops the agent from displaying the boot-up splash logo. |
| **Disable Login Splash** | Disabled | If selected, this option stops the agent from displaying the login splash logo. |

5. In the *Agentless Settings* section, specify communications settings for Agentless devices:

| Option | Description |
|---|---|
| **SSH Timeout** | The time, in seconds, after which the connection is closed if there is no activity. |
| **SNMP Timeout** | The time, in seconds, after which the connection is closed if there is no activity. |
| **Retry Attempts** | The number of times the connection is attempted. |
| **WinRM Timeout** | The time, in seconds, after which the connection is closed if there is no activity. |
| **VMware Timeout** | The amount of time in seconds to wait for a connection to the VMware vSphere API service running on a VMware host. |

6. If the Organization component is not enabled on your appliance, specify *Agent Tasks* settings.

**NOTE:** If the Organization component is enabled on your appliance, these *Agent Tasks* settings are located on the appliance appliance System Administration Console *General Settings* page.

| Option | Description |
|---|---|
| **Last Task Throughput Update** | This value indicates the date and time when the appliance task throughput was last updated. |
| **Current Load Average** | The value in this field depicts the load on an appliance at any given time. For the appliance to run normally, the value in this field must be between 0.0 and 10.0. |
| **Task Throughput** | The value that controls how scheduled tasks, such as inventory collection, scripting, and patching updates, are balanced by the appliance. |

| Option | Description |
|---|---|
| | **NOTE:** This value can be increased only if the value in the Current Load Average is not more than 10.0 and the Last Task Throughput Update time is more than 15 minutes. |

7. In the *Duplicate Machine Detection Settings (Advanced)* section, configure the following options to prevent duplicate device records

   **When the appliance receives inventory from a device without an existing inventory record (which is determined by the use of a new/unknown KUID), it scans the device's properties that you select in this section to determine whether this is a new device or an existing one. If it determines that the device belongs to an existing inventory record, it merges the new device record with the existing one.**

| Option | Description |
|---|---|
| **Required to match an existing machine record** | Select one or more of the following check boxes to indicate which device properties you want the appliance to use to identify potentially duplicated devices.<br>• **Machine Name**<br>• **BIOS Serial Number**<br>• **Manufacturer**<br>• **Operating System Family** |
| **MAC Addresses** | Specify the number of MAC addresses that are associated with the machine record that you to match with the existing device records. |

8. Click **Save**.

   **The changes take effect when Agents check in to the appliance.**
9. If you have multiple organizations, repeat the preceding steps for each organization.

**Related topics**

View appliance logs

Configure appliance General Settings with the Organization component enabled

## *View Agent task status*

You can view the status of tasks that are currently running, or that are scheduled to run, on Agent-managed devices.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. On the left navigation bar, click **Support** to display the *Support* page.
3. In the *Troubleshooting Tools* section, click **Display Agent task status** to display the *Agent Tasks* page.

   **By default,** *In Progress* **tasks are listed. To view other tasks, select different filtering options in the** *View By* **drop-down list, which appears above the list on the right. Task information includes:**

| Column | Description |
|---|---|
| **Device Name** | The name of the device that is the target of the task. |

| Column | Description |
|---|---|
| **Type** | The type of task. Depending on appliance configuration, task types include alerts, inventory, kbot, krash upload, and scripting updates. |
| **Started** | The start time of the task. |
| **Completed** | The completion time of the task. |
| **Next Run** | The next scheduled run time for the task. |
| **Run Time** | How long it took to run the task. |
| **Timeout** | The time limit for completing the task. |
| **Priority** | The importance or rank of the task. |

The options displayed depend on type of tasks available on your appliance. Typical options include:

- **Ready to Run (connected)**: Tasks that are connected through the messaging protocol and about to run.
- **Ready to Run**: Tasks that are queued to run when an messaging protocol connection is established.
- **Longer than 10 minutes**: Tasks that have been waiting longer than 10 minutes for a protocol connection.

4. To view details about a device, click its name in the *Device Name* column.

   **The *Device Detail* page appears.**

## *View the Agent Command Queue*

The Agent Command Queue list shows messages, such as pop-ups and alerts, that have been queued for distribution from the appliance to Agent-managed devices.

1. Go to the appliance *Control Panel*:

   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**

2. On the left navigation bar, click **Support** to display the *Support* page.
3. In the *Troubleshooting Tools* section, click **View Agent command queue** to display the *Agent Command Queue* page.

   **Pending messages appear in this queue only during continuous connection between the Agent and the appliance.**

   **NOTE:** Pending alerts appear on the *Agent Command Queue* page even if there is no connection between the Agent and the appliance.

   The *Agent Command Queue* page contains the following fields:

| Option | Description |
|---|---|
| **Device Name** | The name of the device. Click a name to view device details. |

| Option | Description |
|---|---|
| **Type [Plug-in, Source]** | The type of message, such as *Run Process*. |
| **Command** | The content and information contained in the message. |
| **Expiration** | The date and time when the message expires, also called *Keep Alive* time. Messages are deleted from the queue automatically when they expire. |
| **Status** | The status of the message, such as *Completed* or *Received*. |

**Related topics**

Broadcasting alerts to managed devices

### *Delete messages from the Agent command queue*

You can delete messages that are no longer needed from the Agent command queue.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. On the left navigation bar, click **Support** to display the *Support* page.
3. In the *Troubleshooting Tools* section, click **View Agent command queue** to display the *Agent Command Queue* page.
4. Select the check box next to one or more messages.
5. Select **Choose Action** > **Delete**, then click **Yes** to confirm.

## Updating the KACE Agent on managed devices

The appliance automatically checks with Quest for KACE Agent updates at approximately 03:40 every day. In addition, the appliance checks Quest for Agent updates whenever the appliance is rebooted.

When Agent updates are available, they are automatically downloaded to the appliance, provided that the appliance is connected to the Internet, and an alert appears on the *Home* page of the appliance Administrator Console. Until you configure deployment settings, however, Agent updates are not automatically deployed to managed devices. Click the link in the alert to configure deployment settings.

In addition, you can check for Agent software updates, obtain Agent updates manually, and configure Agent update settings any time. Obtaining updates manually is useful if your appliance is not connected to the Internet.

## View KACE Agent updates

You can view KACE Agent updates in the Administrator Console.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. On the left navigation bar, click **Appliance Updates**.

   **The *Appliance Updates* page appears. The current Agent bundle appears in the *Agent* section.**
3. **Optional**: To check for updates: In the *Agent* section, click **Check for Update**.

   **The appliance checks for updates, and the results appear on the *Logs* page.**

## Configure Agent update settings

After Agents are installed on devices, they are designed to update themselves automatically based on the Agent update settings you choose on the *Update Agent Settings* page. This is true regardless of the provisioning methods used to deploy the Agents, including appliance provisioning, GPO wizard, other GPO deployments, or image deployment.

If you have multiple organizations, you configure Agent update settings for each organization separately.

1. Go to the *Update Agent Settings* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **Provisioning**.
   c. On the *Provisioning Panel*, click **Update Agents**.

   **If a new Agent update is available, it appears in the *Available Agent Bundle* section.**
2. Click **Apply** in the *Available Agent Bundle* section.

   **The new Agent version number appears in the *Advertised Updates* section, and the *Enabled* check box in the *Agent Settings* section is cleared, disabling automatic updates. This enables you to test the updates on selected devices before deploying them system-wide.**
3. View or specify the following Agent update settings:

| Option | Description |
|---|---|
| **Enabled** | Deploy the update to the selected appliance devices during the next scheduled inventory interval. Clear the check box to prevent updates from being installed. |
| **Modified** | Read-only: The time the most recent Agent bundle was downloaded. |
| **All Devices** | Deploy the update to all devices that have the KACE Agent installed. If this option is selected, the *Devices* and *Labels* elements do not appear on the page. |
| **Devices** | Update only specific devices. Select the device names in the drop-down list that appears when you click in the field, or type the first few characters of a device name to sort the list. For example, type Dev to list matching device names such |

| Option | Description |
|---|---|
| | as Device-1, Device-2, and so on. This option is not available when you select **All Devices**. |
| **Manage Associated Labels** | Display the *Edit Labels* dialog. Search for and select labels, and update devices assigned to the selected labels. This option is not available when you select **All Devices**. |
| **Notes** | Any additional information you want to provide. |

4. Click **Save**.

   **The update is deployed to the selected devices during the next scheduled inventory interval. If you use Replication Shares, and failover to the appliance is not selected, Agents are updated after the Replication Shares are updated.**
5. If you limited deployment to specified devices for testing, select additional devices in the *Agent Settings* section of the *Update Agent Settings* page when your testing is complete.

   **The update is deployed to the selected devices during the next scheduled inventory interval.**
6. If you have multiple organizations, repeat the preceding steps for each organization.

**Related topics**

Setting up and using labels to manage groups of items

## *Upload Agent updates manually*

In most cases, Agent updates are automatically downloaded to the appliance when they become available. However, you can download updates from Quest and manually upload Agent updates to the appliance as needed. This is useful if your appliance is not connected to the Internet, or if Agent updates are available but have not yet been downloaded to the appliance automatically.

To download Agent updates from Quest, you must obtain customer login credentials by contacting Quest Support at https://support.quest.com/contact-support.

1. To manually check for updates, go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. On the left navigation bar, click **Appliance Updates** to display the *Appliance Updates* page.

   **The version of the current Agent bundle appears in the *Agent* section.**
3. Click **Check for Update** in the *Agent* section.

   **The appliance checks for updates, and the results appear on the *Logs* page.**
4. To obtain updates:
   a. Log in to the Quest Support site using your customer login credentials:

      **https://support.quest.com/kace-systems-management-appliance/download-new-releases.**

   b. Download the Agent update bundle and save the file locally.
5. Go to the *Update Agent Settings* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Settings**, then click **Provisioning**.
c. On the *Provisioning Panel*, click **Update Agents**.

6. Do one of the following:
   - **If a new update appears in the *Available Agent Bundle* section, click Apply.**
   - **If you manually downloaded an update, go to the *Manually Upload Agent Bundle* section, click Browse or Choose File, locate the file that you downloaded, then click Upload.**

   **The new Agent version number appears in the *Advertised Updates* section, and the *Enabled* check box in the *Agent Settings* section is cleared, disabling automatic updates. This enables you to test the updates on selected devices before deploying them system-wide.**
7. Specify deployment options In the *Agent Settings* section. See Configure Agent update settings.
8. If you have multiple organizations, repeat 6 and 7 for each organization.

# Manually deploying the KACE Agent

Manual deployment is useful when automated Agent provisioning is not practical or when you want to deploy the KACE Agent using email, logon scripts, GPO (Group Policy Objects), or Active Directory.

- **Email**: To deploy KACE Agents through email, you would send an email to your users that contains one of the following:
  - The Agent installation file.
  - A link to the appliance where the Agent file can be downloaded.
  - A web location where the required installation file can be downloaded.
- **Logon scripts**: Logon scripts enable you to deploy the KACE Agent when users log on to a device. If you use logon scripts, you would upload the appropriate file in an accessible directory and create a logon script to retrieve it.

## Obtaining Agent installation files

Agent installation files are available on the appliance.

You can find the KACE Agent installers for Windows, Mac OS X, and Linux devices on the appliance in the following directory:

`\\`**`appliance_hostname`**`\client\agent_provisioning`

**NOTE:** File sharing must be enabled to access the installers. See Enable file sharing at the System level.

The appliance uses a registration process, allowing authenticated KACE Agents to connect to the appliance, either by associating a token with an Agent, or having an appliance administrator approve a connection request.

Agent installers obtained this way do not include a valid token. You can pass the agent token to the installer manually using one of the following options:

- **Windows devices:**
  - Use the following parameters when starting the installer: `HOST=<appliance_hostname> TOKEN=<agent_token>`, or:
  - Manually change the installation file name using the following syntax: `AMPAgent-xx.xx.xx-x86_<appliance_hostname>+<agent_token>.msi`
- **Non-Windows devices**:
  - Use the `KACE_HOST` and `KACE_TOKEN` environment variables to specify the appliance host name and agent token before you run the installation file, or:
  - Manually change the installation file name using the following syntax: `<agent_installation_filename>_<appliance_hostname> +<agent_token>.<extension>`

If you do not specify a valid token string during the Agent installation, any connection requests result in the Agent being quarantined.

Alternatively, you can download Agent token installer bundles for your operating system from the *Agent Token Detail* page. For complete information, see Registering KACE Agent with the appliance.

# Manually deploying the KACE Agent on Windows devices

You can manually deploy the KACE Agent on Windows devices using the installation wizard or from the command line on devices.

When you install the Agent manually, the Agent executable files must be installed in the following locations:

- Windows 32-bit devices: `C:\Program Files\Quest\KACE\`
- Window 64-bit devices: `C:\Program Files (x86)\Quest\KACE\`

The Agent configuration files, logs, and other data are stored in:

- Windows 32-bit devices: `C:\Documents and Settings\All Users\Quest\KACE`
- Window 64-bit devices: `C:\ProgramData\Quest\KACE`

## *Manually deploy the KACE Agent on Windows devices using the installation wizard*

You can manually deploy the KACE Agent on Windows devices by running the installation wizard on devices.

1. Go to the shared directory of the appliance:

   **`\\appliance_hostname\client\agent_provisioning\windows_platform`**
2. Copy the `ampagent-x.x.xxxxx-x86.msi` file to the device.
3. Double-click the file to start the installation and follow the instructions in the installation wizard.
4. If you want to register the agent with the appliance:
   - Use the following parameters when starting the installer: `HOST=<appliance_hostname> TOKEN=<agent_token>`, or:
   - Manually change the installation file name using the following syntax: `AMPAgent-xx.xx.xx-x86_<appliance_hostname>+<agent_token>.msi`

   **You can obtain the agent token string from the *Agent Token Detail* page. For more details, see Registering KACE Agent with the appliance.**

The device information appears in the appliance **Inventory** within a few minutes. See Managing applications on the Software page.

## *Manually deploy the KACE Agent on Windows devices using the Command line*

There are several ways to deploy the Agent from the command line on Windows devices.

For example:

- In a batch file as part of a logon script that runs the installer (`msiexec`) and sets various parameters, such as the value of the host.
- Set an environment variable for the server name then run the installer.
- Change name of the installer, which automatically sets the server name during the installation.

The following table shows command line parameters used to deploy the Agent.

**Table 21. Command line parameters for the Agent**

| Description | Parameter |
|---|---|
| Windows Installer Tool | `msiexec` or `msiexec.exe` |
| Install flag | `/i`<br>**Example**:<br>`msiexec /i ampagent-6.x.xxxxx-x86` |
| Uninstall flag | `/x`<br>**Example**:<br>`msiexec /x ampagent-6.x.xxxxx-x86` |
| Silent install | `/qn`<br>**Example**:<br>`msiexec /qn /i ampagent-6.x.xxxxx-x86` |
| Log verbose output | `/L*v log.txt`<br>**Example**:<br>`msiexec /qn /L*v C:\temp\log.txt /i ampagent-6.x.xxxxx-x86` |
| Auto set hostname: Rename the installation file to the name of the server name, which automatically sets the hostname | `rename agent_installer.msi_hostname.msi`<br>**Example**:<br>`msiexec /qn /i ampagent-6.x.xxxxx-x86_kace_sma.example.com.msi` |
| Set properties | `PROPERTY=value` (Must use ALL CAPS)<br>**Example**:<br>`msiexec /qn /i ampagent-6.x.xxxxx-x86.msi HOST=kace_sma.example.com` |
| Set server name | `set KACE_SERVER=kace_sma_name`<br>Must be followed by an `msiexec` call to install<br>**Example**:<br>`set KACE_SERVER=kboxmsiexec /i ampagent-6.x.xxxxx-x86` |

| Description | Parameter |
|---|---|
| Prevent the installation of logon or bootup hooks, and preserve existing userinit.exe files | `NOHOOKS=1`<br>**Example**:<br>`msiexec /qn /i ampagent-6.x.xxxxx-x86.msi HOST=kace_sma.example.com NOHOOKS=1` |
| Install the Agent but do not start the service. This enables the Agent to be imaged and cloned to other devices | `CLONEPREP=yes/no`<br>**Example**:<br>`msiexec /qn /i ampagent-6.x.xxxxx-x86.msi HOST=kace_sma.example.com CLONEPREP=yes` |
| Set the debug level for the Agent when it generates logs | `DEBUG=true/all`<br>**Example**:<br>`msiexec /qn /i ampagent-6.x.xxxxx-x86.msi HOST=kace_sma.example.com DEBUG=true` |
| Force the Agent to communicate through HTTPS only. It cannot fall back to HTTP if HTTPS is unavailable | `SSLREQUIRED=true`<br>**Example**:<br>`msiexec /qn /i ampagent-6.x.xxxxx-x86.msi HOST=kace_sma.example.com SSLREQUIRED=true` |

The system looks for the value of **host** in these locations in the order shown:

1. The installer file
2. The `HOST` property value
3. `KACE_SERVER` (environment variable)
4. The `amp.conf` file

If you want to register the agent with the appliance:

- Use the following parameters when starting the installer: `HOST=<appliance_hostname> TOKEN=<agent_token>`, or:
- Manually change the installation file name using the following syntax: `AMPAgent-xx.xx.xx-x86_<appliance_hostname>+<agent_token>.msi`

You can obtain the agent token string from the *Agent Token Detail* page. For more details, see Registering KACE Agent with the appliance

**CAUTION: If you leave the host value empty, you must set the environment variable. Otherwise, the Agent will not connect to the appliance. Quest recommends that you use the fully qualified domain name as the hostname.**

## *Manage the KACE Agent on Windows devices using the Windows system tray*

You can view the status of the KACE Agent, force inventory, and display agent information using the Windows system tray.

To access the KACE Agent status using the system tray, you must enable the **Agent Status On Device** option in the *Agent and Communication Settings* section. For more information, see Configure Agent communication and log settings.

1. On the device where the KACE Agent is running, in the Windows system tray, click .

**The indicator in the bottom-right corner of the icon indicates if the agent status:**

- : The agent is connected to the appliance.
- : The agent is snoozed.
- : The agent has pending actions.
- : The agent is disconnected from the appliance.

2. To find out if the agent is connected to the appliance, observe the Status icon in the menu.

   **This is the same indicator that appears on the Agent icon, that tells you whether the agent is connected, snoozed, has pending actions, or disconnected from the appliance, as described above.**

3. To run the device inventory, click **Inventory** in the menu.
4. To restart the agent, click **Restart Agent** in the menu.
5. To temporarily suspend the agent's activity during a specific time period, click **Snooze Agent**, and select a time period in the menu. You can snooze the agent for 15 minutes, 30 minutes, one hour, or two hours.

   **NOTE:** You can only snooze the agent if the **Agent Snooze on Device** option is enabled in the *Agent and Communication Settings* section on the appliance, and if the maximum number of snoozes is not reached. For more information, see Configure Agent communication and log settings.

   **Snoozing an agent does not stop any ongoing agent processes on the device. It only prevents the agent from starting a new process. If an agent snooze is not possible, for example, due to configuration, an error message appears.**

6. To install the patches downloaded to the Agent device, click **Deploy staged patches**.

   **NOTE:** This menu item only appears when a Detect, Stage and On-demand Deploy patch or Windows Feature schedule downloads all applicable patches to the Agent device. For more information, see Configure patch schedules.

7. To access any agent-related links, click **Shortcuts** in the menu, and then click a link, as applicable. Any standard Uniform Resource Identifier (URI) links are supported, such as `https`, `ssh`, and `ftp` URLs.

   **This menu item only appears when your system administrator specifies one or more links. For more information, see Configure Agent communication and log settings.**

   **The link causes the OS to launch the application associated with the selected resource. For example, to open an HTTP link, your system opens the link in the default browser.**

8. To find out more information about the agent application, click **About**.

# Manually deploying and upgrading the KACE Agent on Linux devices

You can manually deploy or upgrade the KACE Agent on Linux devices as needed.

## *Manually deploy the KACE Agent on Linux devices*

You can manually deploy the KACE Agent on Linux devices by copying the Agent installation files to the devices and running installation commands.

1. Copy the KACE Agent installation file to the device.

**See Obtaining Agent installation files.**

2. If you want to register the agent with the appliance:
   - Use the `KACE_HOST` and `KACE_TOKEN` environment variables to specify the appliance host name and agent token before you run the installation file, or:
   - Manually change the installation file name using the following syntax:
     `<agent_installation_filename>_<appliance_hostname>+<agent_token>.<extension>`

   **You can obtain the agent token string from the *Agent Token Detail* page. For more details, see Registering KACE Agent with the appliance.**
3. Open a terminal window from **Applications** > **System Tools**.
4. At the command prompt, set the name of the server and install the Agent:

   ```
   sudo KACE_SERVER=kace_sma_name rpm -Uvh ampagent-x.x.xxxxx-x.i386.rpm
   ```

   **The Agent is installed in the following directories:**
   - `/opt/quest/kace/bin/` where the Agent executable files are installed.
   - `/var/quest/kace/` where the Agent configuration, logs, and other data is stored.

The device information appears in the appliance **Inventory** within a few minutes. See Managing applications on the Software page.

## *Deploy the KACE Agent on Linux devices at startup or login*

You can schedule the Agent to be deployed when users start or log in to Linux devices.

- Set the name by adding the following command to the root directory:

  ```
  export KACE_SERVER=kace_sma_name
  ```

  The `export` call must precede the call to the installer. For example: `export KACE_SERVER=kace_sma_name rpm -Uvh kace_sma_agent-12345.i386.rpm`

  The system looks for the value of **host** in these locations in the order shown:

  1. The installer file
  2. `KACE_SERVER` (environment variable)
  3. The `amp.conf` file

  If you want to register the agent with the appliance:
  - Use the `KACE_HOST` and `KACE_TOKEN` environment variables to specify the appliance host name and agent token before you run the installation file, or:
  - Manually change the installation file name using the following syntax:
    `<agent_installation_filename>_<appliance_hostname>+<agent_token>.<extension>`

  You can obtain the agent token string from the *Agent Token Detail* page. For more details, see Registering KACE Agent with the appliance

  **CAUTION: If you leave the host value empty, you must set the environment variable. Otherwise, the Agent does not connect to the appliance. Quest recommends that you use the fully qualified domain name as the hostname.**

### Upgrade the KACE Agent on Linux devices

You can manually upgrade the KACE Agent on Linux devices by running commands on the devices.

1. Copy the KACE Agent installation file to the device. See Obtaining Agent installation files.
2. If you want to register the agent with the appliance:
   - Use the `KACE_HOST` and `KACE_TOKEN` environment variables to specify the appliance host name and agent token before you run the installation file, or:
   - Manually change the installation file name using the following syntax:
     `<agent_installation_filename>_<appliance_hostname>+<agent_token>.<extension>`

   **You can obtain the agent token string from the *Agent Token Detail* page. For more details, see Registering KACE Agent with the appliance.**
3. Open a terminal window from **Applications** > **System Tools**.
4. At the command prompt, enter:

```
rpm -uvh kace_sma_agent-linux_buildnumber.rpm
```

## Performing Agent operations on Linux devices

You can run commands on Agent-managed Linux devices to perform various Agent operations.

### Start and stop the Agent on Linux devices

You can run commands on Linux devices to start and stop the Agent. This procedure is useful in troubleshooting Agent-related issues.

1. Open a terminal window from **Applications** > **System Tools**.
2. To start the Agent, enter:

```
/opt/quest/kace/bin/AMPTools start
```

3. To stop the Agent, enter:

```
/opt/quest/kace/bin/AMPTools stop
```

### Manually remove the Agent from Linux devices

You can remove the Agent from Linux devices manually by running commands on the devices.

1. Open a terminal window from **Applications** > **System Tools**.
2. At the command prompt, enter:

```
sudo rpm -e ampagent
```

3. **Optional**: Remove the `kace` directory:

```
rm -rf  /var/quest/kace/
```

### Verify that the Agent is running on Linux devices

You can run a command on Linux devices to determine whether the Agent is running.

1. Open a terminal window from **Applications** > **System Tools**.
2. At the command line prompt, enter:

```
ps aux | grep AMPAgent
```

**This output indicates that the process is running:**

```
root 6100 0.0 3.9 3110640 20384 ? Ssl Mar03 0:00 /opt/quest/kace/bin/AMPAgent
--daemon
```

### View the Agent version on Linux devices

You can run a command on Linux devices to verify the version of the Agent installed on those devices.

1. Open a terminal window from **Applications** > **System Tools**.
2. At the command prompt, enter:

   ```
   rpm -q ampagent
   ```

   The version number is displayed.

### Collecting inventory information

You can manually collect inventory on Linux devices by forcing inventory updates.

See Forcing inventory updates.

## Manually deploying and upgrading the KACE Agent on Mac devices

You can manually deploy or upgrade the Agent on Mac devices as needed.

This section provides information for manually deploying the KACE Agent on Mac OS X devices. Additional options are described in Use shell scripts to deploy the KACE Agent.

**NOTE:** Some commands must be run as **root**.

**NOTE:** Proceed with `su` or `sudo` as required.

### Deploy or upgrade the KACE Agent to Mac devices using the Agent installer

You can manually deploy the KACE Agent on Mac devices by copying the Agent installation files to the devices and running the installer.

1. Copy the KACE Agent installation file to the device.

   **See Obtaining Agent installation files.**

2. If you want to register the agent with the appliance:
   - Use the `KACE_HOST` and `KACE_TOKEN` environment variables to specify the appliance host name and agent token before you run the installation file, or:
   - Manually change the installation file name using the following syntax:
     `<agent_installation_filename>_<appliance_hostname>+<agent_token>.<extension>`

   **You can obtain the agent token string from the *Agent Token Detail* page. For more details, see Registering KACE Agent with the appliance.**

3. Double-click **ampagent-x.x.build_number.dmg**.
4. Double-click **AMPAgent.pkg**.
5. Follow the instructions in the installer.

   **Be sure to enter the name of your appliance.**

The installer creates the following directories on your device:

- `/Library/Application Support/Quest/KACE/bin` where the Agent executable files are installed.
- `/Library/Application Support/Quest/KACE/data/` where the Agent configuration, logs, and other data is stored.

## *Deploy the Agent to Mac devices using the terminal window*

You can manually deploy the KACE Agent on Mac devices by copying the Agent installation files to the devices and running commands.

1. Copy the KACE Agent installation file to the device.

   **See Obtaining Agent installation files.**

2. If you want to register the agent with the appliance:
   - Use the `KACE_HOST` and `KACE_TOKEN` environment variables to specify the appliance host name and agent token before you run the installation file, or:
   - Manually change the installation file name using the following syntax:
     `<agent_installation_filename>_<appliance_hostname>+<agent_token>.<extension>`

   **You can obtain the agent token string from the *Agent Token Detail* page. For more details, see Registering KACE Agent with the appliance.**

3. Open a terminal window from **Applications > Utilities**.
4. At the command prompt, enter the following commands to set the name of the server and install the Agent:

```
hdiutil attach ./ampagent-x.x.xxxxx-all.dmg

sudo sh -c 'KACE_SERVER=kace_sma_name installer -pkg /Volumes/Quest_KACE/
AMPAgent.pkg -target /'

hdiutil detach '/Volumes/Quest_KACE'
```

## *Use shell scripts to deploy the KACE Agent*

You can run shell scripts to deploy the Agent to Mac devices.

When using shell scripts to deploy the Agent, you can use the following command line options:

- `hdiutil attach ./ampagent-6.x.xxxxx-all.dmg`
- `sudo sh -c 'KACE_SERVER=kace_sma_name installer -pkg`
- `/Volumes/Quest_KACE/AMPAgent.pkg -target /'`
- `hdiutil detach '/Volumes/Quest_KACE'`

> **NOTE:** The export call must proceed the install call. For example: `sudo export KACE_SERVER=kace_sma_name installer -pkg '/Volumes/Dell KACE/AMPAgent.pkg' -target /`

The system looks for the value of **host** in these locations in the following order shown:

1. The installer file
2. `KACE_SERVER` (environment variable)
3. The `amp.conf` file

If you want to register the agent with the appliance:

- Use the `KACE_HOST` and `KACE_TOKEN` environment variables to specify the appliance host name and agent token before you run the installation file, or:
- Manually change the installation file name using the following syntax:
  `<agent_installation_filename>_<appliance_hostname>+<agent_token>.<extension>`

You can obtain the agent token string from the *Agent Token Detail* page. For more details, see Registering KACE Agent with the appliance

For information about using shell scripts and command lines, go to http://developer.apple.com.

**CAUTION: If you leave the host value empty, you must set the environment variable. Otherwise, the Agent will not connect to the appliance. Quest KACE recommends that you use the fully qualified domain name as the hostname.**

# Performing other Agent operations on Mac devices

You can run commands on Agent-managed Mac devices to perform various operations.

## *Start or stop the Agent on Mac devices*

You can run commands on Mac devices to start and stop the Agent. This procedure is useful in troubleshooting Agent-related issues.

1. Open a terminal window from **Applications** > **Utilities**.
2. Type the following:

   ```
   cd "Library/Application Support/Quest/KACE/bin"
   ```

3. To start the Agent, enter:

   ```
   ./AMPTools start
   ```

4. To stop the Agent, enter:

   ```
   ./AMPTools stop
   ```

## *Manually remove the Agent from Mac devices*

You can remove the Agent from Mac devices manually by running commands on the devices.

1. Open a terminal window from **Applications** > **Utilities**.
2. Type the following:

   ```
   sudo "/Library/Application Support/Quest/KACE/bin/AMPTools" uninstall
   ```

The Agent is removed.

## *Verify that the Agent is running on Mac devices*

You can run a command on Mac devices to determine whether the Agent is running.

1. Open a terminal window from **Applications** > **Utilities**.
2. Enter the following command:

   ```
   ps aux | grep AMPAgent
   ```

   **This output indicates that the process is running:**

   ```
   root 2159 0.0 1.1 94408 12044 p2 S 3:26PM 0:10.94 /Library/Application Support/
   Quest/KACE/AMPAgent
   ```

## Verify the version of the Agent on Mac devices

You can run a command on Mac devices to verify the version of the Agent installed on those devices.

1. Open a terminal window from **Applications** > **Utilities**.
2. Enter the following command:

   ```
   cat /Library/Application\ Support/Quest/KACE/data/version
   ```

   The version number is displayed.

## Collecting inventory information from Mac devices

You can manually collect information from Mac devices by forcing inventory updates.

See Forcing inventory updates.

## Manage the KACE Agent on Mac devices using the menu bar

You can view the status of the KACE Agent, force inventory, and display agent information using the Mac menu bar.

To access the KACE Agent status using the Mac menu bar, you must enable the **Agent Status On Device** option in the *Agent and Communication Settings* section. For more information, see Configure Agent communication and log settings.

1. On the device where the KACE Agent is running, in the Mac menu bar, click .

   **The indicator in the bottom-right corner of the icon indicates if the agent status:**

   - : The agent is connected to the appliance.
   - : The agent is snoozed.
   - : The agent has pending actions.
   - : The agent is disconnected from the appliance.

   **The agent menu appears.**
2. To find out if the agent is connected to the appliance, observe the Status icon in the menu.

   **This is the same indicator that appears on the Agent icon, that tells you whether the agent is connected, snoozed, has pending actions, or disconnected from the appliance, as described above.**
3. To run the device inventory, click **Inventory** in the menu.
4. To restart the agent, click **Restart Agent** in the menu.
5. To temporarily suspend the agent's activity during a specific time period, click **Snooze Agent**, and select a time period in the menu. You can snooze the agent for 15 minutes, 30 minutes, one hour, or two hours.

   **NOTE:** You can only snooze the agent if the **Agent Snooze on Device** option is enabled in the *Agent and Communication Settings* section on the appliance, and if the maximum number of snoozes is not reached. For more information, see Configure Agent communication and log settings.

   **Snoozing an agent does not stop any ongoing agent processes on the device. It only prevents the agent from starting a new process. If an agent snooze is not possible, for example, due to configuration, an error message appears.**
6. To access any agent-related links, click **Shortcuts** in the menu, and then click a link, as applicable. Any standard Uniform Resource Identifier (URI) links are supported, such as `https`, `ssh`, and `ftp` URLs.

   **This menu item only appears when your system administrator specifies one or more links. For more information, see Configure Agent communication and log settings.**

**The link causes the OS to launch the application associated with the selected resource. For example, to open an HTTP link, your system opens the link in the default browser.**

7. To find out more information about the agent application, click **About**.
8. To remove the agent application from the Mac menu bar, click **Quit**.

   **The agent icon is removed from the menu bar. To display it again, log off, then log on. Alternatively, you can install the agent again from the `Application` directory.**

## Viewing information collected by the Agent

You can view inventory information collected by the Agent on the *Device Detail* page.

See Managing inventory information.

# Using Agentless management

Use Agentless device management if you want to manage devices without the need to deploy and maintain the KACE Agent software on those devices.

## About Agentless device management

Agentless device management is a method of managing devices without the need to deploy and maintain the KACE Agent software on those devices.

Agentless management uses SSH, SNMP, and other methods to connect to Agent-intolerant devices, such as printers, network devices, and storage devices, and report the collected inventory information to the appliance Administrator Console. Using Agentless management is useful for operating system versions and distributions that are not supported by the KACE Agent, and where Agentless management is preferred over installing the Agent.

There are some differences between the features that are supported for Agent devices and Agentless devices. See Features available for each device management method.

### *Operating systems supported by Agentless management*

Agentless management supports a variety of device operating systems.

The following table shows the device operating systems that are supported by Agentless management:

| Operating system |
|---|
| CentOS |
| Chrome OS |
| Debian |
| Fedora |
| FreeBSD |
| Mac OS X |
| Oracle Enterprise Linux |

| Operating system |
| --- |
| Red Hat Enterprise Linux* |
| SUSE* |
| Solaris |
| Ubuntu* |
| Windows |
| Windows Server |

*Most recent versions can also be managed with the KACE Agent.

**NOTE:** For non-computer devices such as assets, or devices without operating systems that Agentless management supports, you can map SNMP (Simple Network Management Protocol) OIDs (Object Identifiers) to particular fields in the inventory table. As a result, you can identify specific devices to be inventoried so that you can expand the inventory of Agentless-managed devices. See Using SNMP Inventory Configurations to identify specific SNMP objects and non-computer devices to add to inventory.

### *About enabling Agentless management on Agent-managed devices*

Agentless management can be enabled for any discovered device, including devices that have the KACE Agent installed.

However, using both methods for managing a single device is not recommended. If both methods are enabled for a device, both the device, and its software, appear twice on inventory lists. As a result, it is better to not to enable Agentless management on Agent-managed devices.

## Managing Agentless devices

To manage devices without installing KACE Agent software, you can enable Agentless management using Discovery information or by entering device connection details manually.

Features available to Agentless devices differ from those features available to Agent-managed devices. See Features available for each device management method.

### *Enable Agentless management using Discovery information*

You can enable Agentless management using Discovery information.

1. Go to the *Discovery Results* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Discovery Results**.
2. Select the check box next to one or more devices.
3. Select **Choose Action** > **Provision** > **Agentless: Automatic**.

    **Agentless management is enabled for the selected devices and one of the following icons appears next to the device names:**

| |
| --- |
| : Agentless management is enabled for the device. |

 : Agentless management is enabled for the device, but the device is not currently reachable.

Depending on the device, the appliance uses various connection types to run commands on the selected devices, obtain inventory information, and display that information on the *Device Detail* page. Information is updated according to the inventory schedule for Agentless devices. See:

- Managing inventory information
- Schedule inventory data collection for managed devices

## *Enable Agentless management by entering device information manually*

You can enable Agentless management by entering device information manually.

You can choose from the following connection types: SSH, SNMP, WinRM, and VMware. WinRM is the connection type to use for Windows devices.

1. Go to the *Devices* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **Dashboard**.
2. Select **Choose Action** > **New** > **Agentless Device** to display the *Agentless Device Connection Details* page.
3. Provide information according to the type of connection.

   - **To set up SSH connections with devices, provide the following information:**

| Option | Description |
|---|---|
| **Name** | The hostname or IP address of the device. |
| **Asset Subtype** | The asset subcategory, if applicable. This information enables you to identify and manage subtypes of assets, such as Device assets that are computers, printers, routers, and Software assets that run on Windows, Mac, or Linux systems in the inventory. See About Asset Subtypes, custom fields, and device detail preferences.<br>**NOTE:** In a default installation, Device Assets include two Asset Subtypes for printer devices: *Laser Printer: Color* and *Laser Printer: Monochrome*. Each of these subtypes provides a common set of fields that apply to most printers. The appliance also comes with a set of printer templates for typical SNMP-enabled printer models, based on these Asset Subtypes. You can edit these templates or add new ones, as needed. When you apply a printer template to a device, the data defined in the template, such as toner levels or descriptions, is collected for the printer in the next inventory cycle. For more information, see About printer templates. |
| **Connection Type** | The connection method to use to connect to the device and obtain inventory information, in this case, SSH. |
| **Port** | The port number the appliance uses to connect to the device. No input is required for the following the default port number (22). |
| **Credentials** | The details of the service account required to connect to the device and run commands. Select existing credentials from the drop-down list, or select **Add new credential** to add credentials not already listed.<br>See Add and edit User/Password credentials. |

| Option | Description |
|---|---|
| **Sudo Password** | The name of a service user account with permission to connect to devices. Using a service account and Sudo Password is useful when you want to avoid using root credentials to access devices. On some devices, however, higher privileges enable the appliance to retrieve more detailed inventory information. |
| **Operating System** | The operating system of the device. |
| **Shell** | The shell to use during connections. See Shell support for SSH connections. |
| **Log Level** | The level of information to display on the *Device Detail* page. To see only the most important messages, select **Critical**. To see all messages, select **Debug**. |
| **Enable Inventory** | The inventory collection option. If this option is selected, the appliance collects inventory information for the device according to the Agentless device inventory schedule. If this option is cleared, inventory information is not collected. In both cases, however, Agentless devices are counted. |
| **DNS Server** | The hostname of the DNS server to use when identifying the device hostname and other information. Providing the DNS server information enables the appliance to match the device to existing inventory information during updates. If the appliance cannot detect the device due to changes made to its hostname or IP address, inventory fails. |
| **Relay Device** | The name of the device that you want to use as a relay for agentless device inventory.<br>A relay device that is used during discovery as a relay is used for agentless inventory, when a new device is provisioned automatically from discovery results. You can select a relay device on the *Discovery Schedule Detail* page. For more information, see Add a Discovery Schedule to perform a quick "what and where" scan of your network. |

- **To set up SNMP connections with devices, provide the following information:**

| Option | Description |
|---|---|
| **Name** | The hostname or IP address of the device. |
| **Asset Subtype** | The asset subcategory, if applicable. This information enables you to identify and manage subtypes of assets, such as Device assets that are computers, printers, or routers, and Software assets that run on Windows, Mac, or Linux systems in the inventory. See About Asset Subtypes, custom fields, and device detail preferences.<br>**NOTE:** In a default installation, Device Assets include two Asset Subtypes for printer devices: *Laser Printer: Color* and *Laser Printer: Monochrome*. Each of these subtypes provides a common set of fields that apply to most printers. The appliance also comes with a set of printer templates for typical SNMP-enabled printer models, based on these Asset Subtypes. You can edit these templates or add new ones, as needed. When you apply a printer template to a device, the data defined in the template, such as toner levels or descriptions, is collected for the printer in the next inventory cycle. For more information, see About printer templates. |
| **Connection Type** | The connection method to use to connect to the device and obtain inventory information, in this case, SNMP. |

| Option | Description |
|---|---|
| | SNMP (Simple Network Management Protocol) is a protocol for monitoring managed devices on a network. To enable SNMP, port 161 must be open on the appliance and on the device.<br>SNMP scan results include all SNMP capable devices. Remote shell extensions enable the appliance to connect, run commands, and capture information that can be managed as inventory. For more information about SNMP options, see Add a Discovery Schedule for SNMP-enabled non-computer devices. |
| **SNMP Version** | The version of SNMP to use for connections. SNMPv1 and SNMPv2c do not use authentication or encryption.<br>SNMP v3 uses authentication and encryption algorithms to increase the security of SNMP communications. When you configure the SNMP v3 options, the appliance performs an SNMP v3 scan on selected devices. If that scan fails, the appliance attempts an SNMP v1 scan using the specified **Public String** |
| **Read Community** | (SNMP v1, SNMP v2c) The community string to query. The default is **Public**. The Public String is required if authentication is not required. When authentication is required, the scan returns SNMP enabled with no system data. |
| **Credentials** | The details of the service account required to connect to the device and run commands using SNMP v3. Select existing credentials from the drop-down list, or click **Add new credential** to add credentials not already listed. Credentials are not required for SNMPv1 and SNMPv2c.<br>See Add and edit User/Password credentials. |
| **Inventory Configurations** | One or more inventory configurations for the new SNMP agentless device, such as *Brother Laser Printer: Color*, and others. |
| **Inventory Type** | The method used to collect inventory information.<br>• **Inventory**: Collect a subset of device information, such as the IP Address, MAC Address, and device name.<br>• **Inventory/Walk**: Conduct a full SNMP walk to collect inventory information. The full walk results appear on the *Device Detail* page.<br>**NOTE:** SNMP inventory walk does not support non-English characters on Windows devices. If it encounters non-English characters, the SNMP inventory process reports an error and stops loading inventory information. |
| **Log Level** | The level of information to display on the *Device Detail* page. To see only the most important messages, select **Critical**. To see all messages, select **Debug**. |
| **Enable Inventory** | The inventory collection option. If this option is selected, the appliance collects inventory information for the device according to the Agentless device inventory schedule. If this option is cleared, inventory information is not collected. In both cases, however, Agentless devices are counted. |
| **DNS Server** | The hostname of the DNS server to use when identifying the device hostname and other information. Providing the DNS server information enables the appliance to match the device to existing inventory information during updates. If the appliance cannot detect the device due to changes made to its hostname or IP address, inventory fails. |

| Option | Description |
|---|---|
| **Relay Device** | The name of the device that you want to use as a relay for agentless device inventory.<br>A relay device that is used during discovery as a relay is used for agentless inventory, when a new device is provisioned automatically from discovery results. You can select a relay device on the *Discovery Schedule Detail* page. For more information, see Add a Discovery Schedule to perform a quick "what and where" scan of your network. |

- **To set up WinRM connections with devices, provide the following information:**

| Option | Description |
|---|---|
| **Name** | The hostname or IP address of the device. |
| **Asset Subtype** | The asset subcategory, if applicable. This information enables you to identify and manage subtypes of assets, such as Device assets that are computers, printers, or routers, and Software assets that run on Windows, Mac, or Linux systems in the inventory. See About Asset Subtypes, custom fields, and device detail preferences.<br>**NOTE:** In a default installation, Device Assets include two Asset Subtypes for printer devices: *Laser Printer: Color* and *Laser Printer: Monochrome*. Each of these subtypes provides a common set of fields that apply to most printers. The appliance also comes with a set of printer templates for typical SNMP-enabled printer models, based on these Asset Subtypes. You can edit these templates or add new ones, as needed. When you apply a printer template to a device, the data defined in the template, such as toner levels or descriptions, is collected for the printer in the next inventory cycle. For more information, see About printer templates. |
| **Connection Type** | The connection method to use to connect to the Windows device and obtain inventory information, in this case, WinRM. |
| **Port** | The port number the appliance uses to connect to the device. No input is required for the following default port number: 5985. |
| **Credentials** | The details of the service account required to connect to the device and run commands. Select existing credentials from the drop-down list, or select **Add new credential** to add credentials not already listed.<br>See Add and edit User/Password credentials. |
| **Require Kerberos** | If selected, Kerberos is required for authentication. NTLM will not be used as an alternative when Kerberos is unavailable.<br>Using Kerberos requires DNS Lookup to be enabled in the same discovery configuration. The DNS Server is also required in the local appliance network settings. |
| **Log Level** | The level of information to display on the *Device Detail* page. To see only the most important messages, select **Critical**. To see all messages, select **Debug**. |
| **Enable Inventory** | The inventory collection option. If this option is selected, the appliance collects inventory information for the device according to the Agentless device inventory schedule. If this option is cleared, inventory information is not collected. In both cases, however, Agentless devices are counted. |

| Option | Description |
|---|---|
| **DNS Server** | The hostname of the DNS server to use when identifying the device hostname and other information. Providing the DNS server information enables the appliance to match the device to existing inventory information during updates. If the appliance cannot detect the device due to changes made to its hostname or IP address, inventory fails. |
| **Inventory Hyper-V or Virtual Machine Manager** | Select this option to allow the appliance to import a Microsoft Hyper-V or System Center Virtual Machine Manager infrastructure using agentless management. For more information about this feature, see Add a Discovery Schedule for a Microsoft Hyper-V or System Center Virtual Machine Manager. |
| **Relay Device** | The name of the device that you want to use as a relay for agentless device inventory.<br>A relay device that is used during discovery as a relay is used for agentless inventory, when a new device is provisioned automatically from discovery results. You can select a relay device on the *Discovery Schedule Detail* page. For more information, see Add a Discovery Schedule to perform a quick "what and where" scan of your network. |

- **To set up a VMware® device, provide the following information:**

| Option | Description |
|---|---|
| **Name** | The host name or IP address of the ESXi host or the vCenter Server. |
| **Asset Subtype** | The asset subcategory, if applicable. This information enables you to identify and manage subtypes of assets, such as VMware devices. For example, hypervisors (ESXi hosts). See About Asset Subtypes, custom fields, and device detail preferences. |
| **Connection Type** | The connection method to use to connect to the VMware device and obtain inventory information. |
| **VMware Type** | The VMware device type: **ESXi** or **vCenter Server**.<br>**NOTE:** vCenter Server devices do not count against the total number of device licenses. That is because these device instances are only used to establish relationships between the vCenter Servers, ESXi hosts, and the virtual machines running on them. |
| **Credentials** | The details of the service account required to connect to the device and run commands. Select existing credentials from the drop-down list, or select **Add new credential** to add credentials not already listed. An account with read-only access can be used. See Add and edit User/Password credentials. |
| **Log Level** | The level of information to display on the *Device Detail* page. To see only the most important messages, select **Critical**. To see all messages, select **Debug**. |
| **Enable Inventory** | The inventory collection option. If this option is selected, the appliance collects inventory information for the device according to the Agentless device inventory schedule. If this option is cleared, inventory information is not collected. In both cases, however, Agentless devices are counted. |

| Option | Description |
|---|---|
| **DNS Server** | The hostname of the DNS server to use when identifying the device hostname and other information. Providing the DNS server information enables the appliance to match the device to existing inventory information during updates. If the appliance cannot detect the device due to changes made to its hostname or IP address, inventory fails. |

4. Click **Test Connection**.

   **The connection status appears.**
5. Click **Save**.

   **The Agentless device is added. If** *Enable Inventory* **is selected, inventory information is updated according to the Agentless device inventory schedule. See Schedule inventory data collection for managed devices.**

## *Shell support for SSH connections*

Operating systems vary in their support of shells used for SSH connections between the appliance and managed devices.

The following table shows the shells available for SSH connections for each operating system.

**Table 22. Shell support for SSH connections by operating system**

| Operating system | Default shell | Supported shells |
|---|---|---|
| **CentOS** | bash | bash, sh |
| **Debian Linux** | bash | bash, sh |
| **Fedora** | bash | bash, sh |
| **FreeBSD** | csh | bash, csh, sh |
| **Mac OS X** | sh | bash, sh |
| **openSUSE/SLES™** | bash | bash, sh |
| **Oracle Enterprise Linux** | bash | bash, sh |
| **Red Hat® Enterprise Linux®** | bash | bash, sh |
| **Ubuntu** | bash | bash, sh |

## *Edit Agentless device connection details or delete Agentless devices*

You can edit the device connection details for Agentless devices and you can delete Agentless devices as needed.

1. Go to the *Devices* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Inventory**, then click **Dashboard**.

2. Click the name of an Agentless device that was entered manually to display the *Device Detail* page.
3. In the *Summary* section, click **Edit** in the *Device Entry Type* row to display the *Agentless Device Connection Details* page.
4. Do one of the following:

   - **Modify the connection details as needed, then click Save. See Enable Agentless management by entering device information manually.**
   - **To delete the device, click Delete.**
   - **For Agentless devices enrolled in KACE Cloud Mobile Device Managed (MDM), to remove the device's association with KACE Cloud MDM and revert to Agent-only inventory records, click Remove Agentless Integration.**

# Using SNMP Inventory Configurations to identify specific SNMP objects and non-computer devices to add to inventory

You can identify specific SNMP (Simple Network Management Protocol) objects and non-computer devices to be inventoried so that you can expand or limit the inventory to fit your needs. In addition, the appliance enables you to map SNMP OIDs (Object Identifiers) to particular fields in the appliance inventory table, using Asset Subtypes.

**IMPORTANT: For SNMP devices, you must assign the appropriate Asset Subtype when the device is configured. You cannot add or change SNMP Asset Subtypes after they have been configured.**

SNMP is one of the possible methods that appliance Agentless Inventory uses to extract data for inventory and integration into the appliance. The appliance uses the RFC1213 MIB (Management Information Base) as the primary data gathering layer, because it contains data that is specific to all SNMP-capable devices. All SNMP-capable devices expose RFC1213 data. For more information, go to http://tools.ietf.org/html/rfc1213.

With the appliance SNMP inventory configuration feature, you can define an additional set of OIDs to be collected during inventory beyond the standard RFC1213 data. This enables instant extensibility and robustness to what would otherwise be limited in terms of the amount of data that could be gathered from each device.

**Related Topics**

About Asset Subtypes, custom fields, and device detail preferences

## *Obtain a list of object identifiers (OIDs) using the Administrator Console*

If you do not have a vendor-provided management information base (MIB) or a generally available MIB for an object, you can obtain a list of object identifiers by using the appliance to probe the object.

You can define an additional set of OIDs to be collected during inventory beyond the standard RFC1213 data, which expands the amount of data that can be gathered from each device. To find these OIDs, you can use a MIB browser on MIBs you have obtained elsewhere. With the appliance, you can perform an SNMP full walk either through device discovery or device inventory if you do not have access to a MIB otherwise.

1. Perform an SNMP full walk for an object.

   - **Scan using a Discovery Schedule. See Discovering devices on your network.**
   - **Scan using inventory data collection. See Schedule inventory data collection for managed devices.**

2. Go to the *Device Detail* page for the scanned object:

   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Inventory**, then click **Dashboard**.
c. Click the name of the object on the *Devices* list page.

3. Click **SNMP Data** in the *Inventory* section to display the results of the full walk.
4. Collect the relevant OIDs from the list.

Map the OIDs to fields in the appliance inventory table so that their information can be integrated into inventory. See Map Object Identifiers to fields in the inventory table.

## Map Object Identifiers to fields in the inventory table

You can map SNMP (Simple Network Management Protocol) OIDs (Object Identifiers) to particular fields that you have created as Asset Subtypes. You can use the resulting SNMP Inventory Configurations to expand your inventory information to include data from non-computer devices.

- You have identified the relevant OIDs to be contained in the configuration:
  - You have used a MIB browser on a vendor-supplied Management Information Base.
  - You have performed an SNMP Full Walk on a target object with the appliance, and have reviewed the OIDs displayed in **SNMP Data** of the *Inventory Information* section of the object's *Device Detail* page. See Discovering devices on your network.
- You have created appropriate Asset Subtypes for the non-computers devices you want to manage in inventory. See Add Asset Subtypes and select Device Detail page preferences.

The *SNMP Inventory Configurations* list page provides you with the tool to create new mappings or manage existing ones.

After you have determined the OID data you want to collect, you select a subtype for the device from categories that are the same as those on the *Device Detail* page. You then select a property of that category, the result of which maps the OID to a field in the inventory table. The SNMP object appears in the device inventory after the next scan.

For example, if you had a printer in inventory, added manually or through a discovery schedule, you could use an SNMP Inventory Configuration to have the printer report cartridge ink levels to the appliance. In this case, you would use an Asset Subtype of *Printer* that you have created as a subtype of device, with a field named *Toner Level*.

1. Go to the *SNMP Inventory Configurations* list page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **SNMP Inventory Configurations**.
2. Select **Choose Action > New**.
3. Type a name for the configuration in the *Name* field.

   **IMPORTANT: For SNMP devices, you must assign the appropriate Asset Subtype when the device is configured. You cannot add or change SNMP device subtypes after they have been configured.**
4. Select an Asset Subtype that identifies the type of device you want to inventory.
5. Map an OID to an appliance inventory field:
   a. Click the Add button: +.

      **A new row appears under the headings.**
   b. Enter the OID in the text box under *Object Identifier (OID)*.
   c. Select a category from the drop-down list under *Category*.

      **The categories match those identified on the** *Asset Subtype Detail* **page.**
   d. Select a property from the drop-down list under *Property*.

**The properties that appear are dependent on the subtype and the category you selected.**

e. Click **Save** at the end of the row.

6. Map as many additional OIDs as you want for your purposes, and click **Save** at the bottom left of the page.

Apply the configuration to an object. See Apply an SNMP Inventory Configuration to a device.

## Apply an SNMP Inventory Configuration to a device

You can apply an SNMP Inventory Configuration to a device so that the additional data can be collected during the next scan for that device.

You have created the configuration. See Map Object Identifiers to fields in the inventory table.

**NOTE:** You can apply SNMP Inventory Configurations only to SNMP-managed Agentless devices.

1. Go to the *Devices* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory** to display the *Devices* page.
2. Select the check boxes next to one or more devices.
3. Select **Choose Action > Apply SNMP Configurations** to display the *Apply SNMP Configurations* dialog.
4. Drag the configurations you want to apply into the *Apply these SNMP configurations* box.

   **You can search for a particular configuration by starting to type its name into the** *Search SNMP Configurations* **field.**

5. Click **Apply SNMP Configurations**.

   **The** *Devices* **list page reappears after the configuration is applied.**

The information appears for the device after the next regularly scheduled reporting time or forced inventory update.

**Related topics**

Schedule inventory data collection for managed devices

Forcing inventory updates

## About printer templates

The appliance also comes with a set of printer templates for typical SNMP (Simple Network Management Protocol) printer models. You can apply these SNMP configurations to printer devices, as needed.

The *SNMP Inventory Configurations* list page displays the available printer templates. When you apply a printer template to a device, the data defined in the template, such as toner levels or descriptions, is collected for the printer in the next inventory cycle.

A default installation includes a set of templates for the following laser printers, with two variation for each brand to accommodate monochrome and color printers: Brother, Canon, HP, Lexmark, and Xerox.

You can edit or create these templates, as needed. To create or edit a printer template, you must have the relevant SNMP OIDs (Object Identifiers) for the fields that exist as the associated Asset Subtypes. The appliance comes with two Asset Subtypes that capture printer-specific fields such as toner levels: *Laser Printer: Color* and *Laser Printer: Monochrome*. For more information about mapping OIDs, see Map Object Identifiers to fields in the inventory table. For details about Asset Subtypes and to find out how they relate to SNMP configurations, see About Asset Subtypes, custom fields, and device detail preferences.

# Adding devices manually in the Administrator Console or by using the API

You can add devices to inventory manually, either within the Administrator Console or by using the inventory API (application programming interface).

Adding devices manually is useful when you want to track device information, but you do not want to manage devices by installing the KACE Agent or using Agentless management.

Inventory for manual devices must be updated or uploaded manually. The appliance does not receive scheduled inventory updates from manual devices.

## About managing devices

Managing devices is the process of using the appliance to collect and maintain information about devices on your network and performing tasks such as monitoring device status, creating reports, and so on.

To add devices to the appliance inventory, you can:

- **Install the KACE Agent on devices**. Devices are automatically added to inventory after the Agent is installed on them and the Agent reports inventory to the appliance. See Provisioning the KACE Agent.
- **Enable Agentless management for devices**. Agentless management is especially useful for devices that cannot have the KACE Agent installed, such as devices with unsupported operating systems. See Managing Agentless devices.
- **Upload inventory information for devices manually**. See Adding devices manually in the Administrator Console or by using the API.

**NOTE:** Your product license agreement entitles you to manage a specified number of devices that are classified as Managed Computers, Assets, and Monitored Servers. Devices count toward these limits even if such devices are MIA (missing in action) or no longer in use. However, devices that are added to inventory manually, or through the API, do not count toward license limits. See View product licensing information.

For information about the features available to devices, see Features available for each device management method.

## Tracking changes to inventory settings

If History subscriptions are configured to retain information, you can view the details of the changes made to settings, assets, and objects.

This information includes the date the change was made and the user who made the change, which can be useful during troubleshooting. See About history settings.

### About inventory change history

Change history for devices begins when there is a change to the information collected during the first report.

The first time a managed device reports inventory to the appliance, the information is considered to be a baseline report. As such, it is not recorded in the change history.

## Add devices manually with the Administrator Console

You can add devices to the appliance inventory manually by entering device information on the *Device Detail* page.

Once created, manual records are not touched or modified by the appliance or Agents. Subsequently, the fields in a manual record can only be updated manually by an administrator.

1. Go to the *Devices* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Dashboard**.
2. Select **Choose Action** > **New** > **Manual Device** to display the *Device Detail* page.
3. Do one of the following:
    - **Under** *Import device.xml***, click Choose File to find and import an XML file that includes device inventory information. See Valid XML schema for Windows and Upload an XML file using the Administrator Console.**

      In the *Summary* section, enter a *Name* for the device, then skip to step 10.
    - **In the** *Summary* **section, provide the following information:**

| Item | Description | Database field |
|---|---|---|
| **System Name** | The hostname or IP address of the device. | NAME |
| **System Description** | A description of the device. | SYSTEM_DESCRIPTION |
| **Model** | The device model. | CS_MODEL |
| **Chassis Type** | The type of device, such as desktop or laptop. | CHASSIS_TYPE |
| **IP Address** | The IP address of the device. | IP |
| **MAC** | The device's Media Access Control (MAC) address number. | MAC |
| **OS Name** | The operating system of the device, such as Windows, Mac OS X, or Linux. | OS_NAME |
| **Service Pack** | The service pack version number (Windows only). | SERVICE_PACK |
| **Device Timezone** | The KACE Agent installed on the device uses this timezone. | TZ_AGENT |
| **User** | A user associated with this device. | USER |
| **Domain** | The domain of the device. | CS_DOMAIN |
| **Notes** | Any additional information you want to provide. | NOTES |

4. In the *Hardware* section, provide the following information:

| Item | Description | Database field |
|---|---|---|
| **RAM Maximum** | The maximum amount of random-access memory (RAM) available. | RAM_MAX |

| Item | Description | Database field |
|---|---|---|
| **RAM Total** | The total amount of random-access memory (RAM) on the device. | RAM_TOTAL |
| **RAM Used** | The amount of random-access memory (RAM) in use on the device. | RAM_USED |
| **System Manufacturer** | The device manufacturer. | CS_MANUFACTURER |
| **System Model** | The device model. | CS_MODEL |
| **Service Tag** | Information used to identify device service. | SERVICE_TAG |
| **Asset Tag** | Information used to identify device hardware. | ASSET_TAG |
| **Motherboard Primary Bus** | The main bus. | MOTHERBOARD_PRIMARY_BUS |
| **Motherboard Secondary Bus** | The peripheral bus. | MOTHERBOARD_SECONDARY_BUS |
| **Architecture** | The architecture of the device operating system, such as x86 or x64. | SYS_ARCH |
| **Virtual Device** | Used to identify devices that are virtual, such as devices running on VMware platforms. Not displayed for physical devices, such as laptops and servers. | VIRTUAL |
| **Processors** | The CPU count, type, and manufacturer. | PROCESSORS |
| **CD/DVD Drives** | The configuration of CD-ROM and DVD-ROM drives installed on the device. | CDROM_DEVICES |
| **Sound Devices** | Information about audio devices on the device. | SOUND_DEVICES |
| **Monitors** | The type and manufacturer of the monitor attached to the device. This field is not displayed for virtual devices. | MONITOR |
| **Video Controllers** | Information about video controllers on the device. | VIDEO_CONTROLLERS |
| **BIOS Name** | The BIOS name. | BIOS_NAME |
| **BIOS Release Date** | The date the BIOS version was released. | BIOS_RELEASE_DATE |
| **BIOS Version** | The BIOS version. | BIOS_VERSION |
| **BIOS Manufacturer** | The BIOS manufacturer. | BIOS_MANUFACTURER |

| Item | Description | Database field |
|---|---|---|
| **BIOS Description** | The BIOS description. | BIOS_DESCRIPTION |
| **BIOS Identification Code** | The BIOS identification code. | BIOS_IDENTIFICATION_CODE |
| **BIOS Serial Number** | The BIOS serial number. | BIOS_SERIAL_NUMBER |

5. In the *Printers* section, specify printer information related to the device.
6. In the *Agent* section, specify the version number of the KACE Agent installed on the device.
7. In the *User* section, provide user information.

| Item | Description | Database field |
|---|---|---|
| **User Logged** | The user currently logged in to the device. This entry includes the username and the domain to which the user belongs. | USER_LOGGED |
| **User Fullname** | The full name of the user who owns the device. | USER_FULLNAME |
| **User Domain** | The domain to which the user belongs. | USER_DOMAIN |
| **Last User** | The name of the most recent user who logged in to the device. Some devices might have multiple users. | USER |

8. In the *Operating System* section, provide information about the operating system installed on the device.

| Item | Description | Database field |
|---|---|---|
| **Operating System Version** | The version number of the operating system. | OS_VERSION |
| **Operating System Build Version** | The build number of the operating system. | OS_BUILD |
| **Number** | The number of the operating system. | OS_NUMBER |
| **Operating System Major Version** | The number that identifies the major version of the operating system. | OS_MAJOR |
| **Operating System Minor Version** | The number that identifies the minor version of the operating system. | OS_MINOR |
| **Minor Version (2)** | Additional operating system version information. | OS_MINOR2 |
| **Internet Explorer Version** | The version of Internet Explorer installed on the device. | IE_VERSION |
| **.NET Versions** | The version or versions of .NET installed on the device. | DOT_NET_VERSIONS |

| Item | Description | Database field |
|---|---|---|
| **Operating System Architecture** | The architecture of the device operating system, such as x86 or x64. | OS_ARCH |
| **Operating System OS Name** | The name of the device operating system. | OS_NAME |
| **Edge Version** | The version of Microsoft Edge installed on the device. | EDGE_VERSION |
| **Family** | The product family of the operating system. | OS_FAMILY |
| **Service Pack** | | |
| **Operating System Installed On** | The date the operating system was installed. | OS_INSTALLED_DATE |
| **Last Startup** | The last time the operating system was turned off. | LAST_REBOOT |
| **Last System Shutdown** | The last time the operating system was turned off. | LAST_SHUTDOWN |
| **Uptime Since Last Reboot** | The length of time the operating system has been running. | LAST_REBOOT |
| **Domain** | The domain of the device. | CS_DOMAIN |
| **System Directory** | The location of the system directory. | SYSTEM_DIRECTORY |
| **Registry Size** | The size of the registry. | REGISTRY_SIZE |
| **Registry Maximum Size** | The maximum size of the registry. | REGISTRY_MAX_SIZE |
| **WMI Status** | The status of the Windows Management Instrumentation (WMI) service (Windows Devices only). | WMI_STATUS |

9. Click **Save**.

   The manual device icon appears in the device's **Status** column on the *Devices* page:  . Inventory for manual devices must be updated manually.

# Adding devices manually using the API

You can add devices to the appliance manually by creating an XML file and uploading that file to the appliance using the API (application programming interface). Adding devices in this way is useful for devices that might not be able to run the KACE Agent for security reasons, and devices that cannot connect to the LAN (Local Area Network) to report inventory.

The XML file you create can be modeled on the sample script in this section.

Devices that are added to inventory through the API do not count toward the license limit. See View product licensing information.

Application inventory that is uploaded through the API is displayed on the *Software page*, but it is not displayed on the *Software Catalog* page. See:

- Managing applications on the Software page
- Managing Software Catalog inventory

> **NOTE:** The inventory API supports HTTP and HTTPS communications, depending on your appliance configuration. To upload inventory information, use the following URL: `http://`**appliance_hostname**`/service/wsapi.php`, where **appliance_hostname** is the host name of your appliance.

## Submit inventory information using the API

To submit inventory using the API, you first need to generate an XML file that contains the inventory information.

For examples, see:

- Valid XML schema for Windows
- Example using the XML schema for Windows devices
- Valid XML schema for Linux and Mac devices

After you generate an XML file with the expected content, you can submit inventory using the API.

1. (Required) Request a session key:

   **Submit `keyreq=true` in the body of the request to get a session string in response.**

2. (Required) Construct the authentication token:
   a. Construct the `auth` string as:

      **`session_string + '|' + MD5 of API password`**

   b. Run MD5 on the `auth` string.

3. (Required for new devices) Request a device UUID:

   **Submit `req=newuuid&key=$auth` in the body of the request to get a UUID in response.**

4. (Required) Submit inventory XML data:

   Submit `req=loadxml&key=$auth&KUID=$uuid&version=6.0` in the `GET` line and inventory XML in the body of the request.

   See Sample Perl script.

## Sample Perl script

You can use Perl scripts to upload XML files with device inventory information to the appliance.

The following is a sample Perl script that uploads a user-created XML file to the appliance. For information about using this script, contact Quest Support at https://support.quest.com/contact-support.

```
#!/usr/bin/perl
use strict;
use warnings;
use WWW::Curl::Easy;
use XML::Simple;
use Data::Dumper;
use Digest::MD5 qw(md5 md5_hex md5_base64);
    # Curl Output Handler ...
    my $response;
    sub write_data($$$$) {
```

```
   $response = shift;
   return length($response);
}
# ------------------------------------------------------
# Appliance Configuration ...
# ------------------------------------------------------
my $password = "xxx"; # password set in Settings -> Security Settings
my $host = "hostname";       # hostname or IP address here
my $http = "https";        # HTTP or HTTPS
# ------------------------------------------------------
# Build XML Package ...
# ------------------------------------------------------
my $simple = new XML::Simple(keeproot => 1, forcearray => 1);
my $data = $simple->XMLin("machine.xml");
my $uuid = $data->{MachineStruct}->[0]->{MAC}->[0];
# ------------------------------------------------------
# Setup CURL stuff ...
# ------------------------------------------------------
my $url = "$http://$host/service/wsapi.php";
my $ch = WWW::Curl::Easy->new;
$ch->setopt(CURLOPT_URL, $url);  # set url to post to
$ch->setopt(CURLOPT_SSL_VERIFYPEER, 0);  # ok for self-signed ca
$ch->setopt(CURLOPT_VERBOSE, 0);
$ch->setopt(CURLOPT_WRITEFUNCTION, \&write_data); # return into a variable
$ch->setopt(CURLOPT_HEADER, 0);
$ch->setopt(CURLOPT_TIMEOUT, 40);  # times out after 4s
$ch->setopt(CURLOPT_POST, 1);
$ch->setopt(CURLOPT_COOKIEFILE, '/tmp/cookiefile.txt');
# ------------------------------------------------------
# STEP 1 - Request Session from the appliance ...
# ------------------------------------------------------
$ch->setopt(CURLOPT_POSTFIELDS, "keyreq=true"); # add POST fields
my $out = $ch->perform;
if ( $out != 0 ) {
        die ("Error: $out " .
        $ch->strerror($out) .
        " " .
        $ch->errbuf . "\n");
}
my $sess = $response;
# ------------------------------------------------------
# STEP 2 - Build Authorization Token ...
# ------------------------------------------------------
my $auth = md5_hex("$sess|".md5_hex($password));
# ------------------------------------------------------
# STEP 3 - Request new UUID from the appliance (if creating a new
#          device record.  If editing an existing device
#          be sure it is set in the XML ...
# ------------------------------------------------------
if ( 1 ) {
        print "Using UUID From XML File: $uuid\n";
} else {
        $ch->setopt(CURLOPT_POSTFIELDS,"req=newuuid&key=$auth");
        $out = $ch->perform;
        if ( $out != 0 ) {
              die ("Error: $out " .
                    $ch->strerror($out) .
                    " " .
                    $ch->errbuf . "\n");
        }
```

```
        $uuid = $response;
        $data->{MachineStruct}->[0]->{MAC}->[0] = $uuid;
        $data->{MachineStruct}->[0]->{NAME}->[0] = "WSAPI-" . $uuid;
        print "Created New UUID: $uuid\n";
        }
# convert Simple XML hash back to XML string ...
my $xml = $simple->XMLout(
        $data,
        KeepRoot => 1,
        NoAttr => 1,
);
# ----------------------------------------------------
# STEP 4 - Send XML to the appliance ...
# ----------------------------------------------------
my @curlHeader = ("Content-Type: text/xml");
$url = "$http://$host/service/wsapi.php?req=loadxml&key=$auth&KUID=
 $uuid&version=6.0";
$ch->setopt(CURLOPT_URL, $url); # set url to post to
$ch->setopt(CURLOPT_HTTPHEADER, \@curlHeader);
$ch->setopt(CURLOPT_POSTFIELDS, $xml);
$out = $ch->perform;
if ( $out != 0 ) {
        die ("Error: $out " . $ch->strerror($out) . " " . $ch->errbuf . "\n");
}
print "Loaded $uuid to the appliance ($host)\n";
```

## *Valid XML schema for Windows*

Files used to upload inventory information for Windows devices must conform to valid XML schemas.

The following is an example of a valid XML schema for Windows devices.

```
<?xml version="1.0" encoding="utf-8"?>
<MachineStruct xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="">
  http://www.w3.org/2001/XMLSchema-instance"
<NAME>@@__m_computerSystemName__@@</NAME>
<IP>@@__m_IPAddress__@@</IP>
<MAC>@@__m_versionKaceId__@@</MAC>
<OS_NAME>@@__m_operatingSystemCaption__@@</OS_NAME>
<OS_NUMBER>@@__m_operatingSystemVersion__@@</OS_NUMBER>
<OS_MAJOR>@@__m_operatingSystemVersionMajor__@@</OS_MAJOR>
<OS_MINOR>@@__m_operatingSystemVersionMinor__@@</OS_MINOR>
<SERVICE_PACK>@@__m_operatingSystemCsdVersion__@@</SERVICE_PACK>
<USER>@@__m_userAccountName__@@</USER>
<USER_FULLNAME>@@__m_userAccountFullName__@@</USER_FULLNAME>
<DOMAIN>@@__m_computerSystemDomain__@@</DOMAIN>
<OS_VERSION>@@__m_operatingSystemVersion__@@</OS_VERSION>
<OS_BUILD>@@__m_operatingSystemBuildNumber__@@</OS_BUILD>
<OS_INSTALLED_DATE>@@__m_operatingSystemInstallDate__@@</OS_INSTALLED_DATE>
<LAST_REBOOT>@@__m_operatingSystemLastBootupTime__@@</LAST_REBOOT>
<LAST_SHUTDOWN>@@__m_operatingSystemLastBootupTime__@@</LAST_SHUTDOWN>
<UPTIME>@@__m_operatingSystemUptime__@@</UPTIME>
<SYSTEM_DIRECTORY>@@__m_operatingSystemWindowsDirectory__@@</SYSTEM_DIRECTORY>
<SYSTEM_DESCRIPTION>@@__m_operatingSystemDescription__@@</SYSTEM_DESCRIPTION>
<RAM_TOTAL>@@__m_physicalMemoryTotalSize__@@</RAM_TOTAL>
<RAM_USED>@@__m_operatingSystemUsedPhysicalMemory__@@</RAM_USED>
<CS_MANUFACTURER>@@__m_computerSystemManufacturer__@@</CS_MANUFACTURER>
<CS_MODEL>@@__m_computerSystemModel__@@</CS_MODEL>
<CHASSIS_TYPE>@@__m_systemEnclosureChassisType__@@</CHASSIS_TYPE>
<TZ_AGENT>@@__m_versionTimeZone__@@</TZ_AGENT>
<USER_LOGGED>@@__m_computerSystemUserName__@@</USER_LOGGED>
```

```
<CS_DOMAIN>@@__m_computerSystemDomain__@@</CS_DOMAIN>
<USER_NAME>@@__m_userAccountName__@@</USER_NAME>
<USER_DOMAIN>@@__m_userAccountDomain__@@</USER_DOMAIN>
<BIOS_NAME>@@__m_biosName__@@</BIOS_NAME>
<BIOS_VERSION>@@__m_biosVersion__@@</BIOS_VERSION>
<BIOS_MANUFACTURER>@@__m_biosManufacturer__@@</BIOS_MANUFACTURER>
<BIOS_DESCRIPTION>@@__m_biosDescription__@@</BIOS_DESCRIPTION>
<BIOS_SERIAL_NUMBER>@@__m_biosSerialNumber__@@</BIOS_SERIAL_NUMBER>
<MOTHERBOARD_PRIMARY_BUS>@@__m_motherboardDevicePrimaryBusType__@@
  </MOTHERBOARD_PRIMARY_BUS>
<MOTHERBOARD_SECONDARY_BUS>@@__m_motherboardDeviceSecondaryBusType__@@
  </MOTHERBOARD_SECONDARY_BUS>
<PROCESSORS>CPU Chip Count: @@__m_processorCount__@@
CPU Core Count: @@__m_processorCoreCount__@@
@@__m_processorList__@@ </PROCESSORS>
<SOUND_DEVICES>@@__m_soundDeviceDescription__@@</SOUND_DEVICES>
<CDROM_DEVICES>@@__m_CDROMDeviceName__@@</CDROM_DEVICES>
<VIDEO_CONTROLLERS>@@__m_videoControllerName__@@</VIDEO_CONTROLLERS>
<REGISTRY_SIZE>@@__m_registryCurrentSize__@@</REGISTRY_SIZE>
<REGISTRY_MAX_SIZE>@@__m_registryMaximumSize__@@</REGISTRY_MAX_SIZE>
<DISK_DRIVES>
@@__m_logicalDiskDriveList__@@ </DISK_DRIVES>
<NETWORK_INTERFACES>
@@__m_networkAdapterConfigurationList__@@ </NETWORK_INTERFACES>
<PRINTERS>@@__m_printerList__@@</PRINTERS>
<STARTUP_PROGRAMS>
@@__m_startupProgramsList__@@ </STARTUP_PROGRAMS>
<PROCESSES>
@@__m_processList__@@ </PROCESSES>
<NT_SERVICES>
@@__m_servicesList__@@ </NT_SERVICES>
<INSTALLED_software>
@@__m_installedProgramsList__@@ </INSTALLED_software>
<CLIENT_VERSION>@@__m_appVersion__@@</CLIENT_VERSION>
</MachineStruct>
```

## *Example using the XML schema for Windows devices*

You can view an example of a file that conforms to the valid XML schema for Windows devices.

The following is an example of valid XML that uses the schema in Valid XML schema for Windows.

```
<?xml version="1.0" encoding="utf-8"?>
<MachineStruct xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <NAME>TestComputer</NAME>
  <IP>10.10.10.10</IP>
  <MAC>F1234567-C2D2-4055-85BB-294E6A3D22D9</MAC>
  <OS_NAME>Microsoft Windows 7 Professional</OS_NAME>
  <OS_NUMBER>6.1.7601.17514</OS_NUMBER>
  <OS_MAJOR>6</OS_MAJOR>
  <OS_MINOR>1</OS_MINOR>
  <SERVICE_PACK>Service Pack 1</SERVICE_PACK>
  <USER>Administrator</USER>
  <USER_FULLNAME>Tom Silver</USER_FULLNAME>
  <DOMAIN>WORK</DOMAIN>
  <OS_VERSION>6.1.7601</OS_VERSION>
  <OS_BUILD>17514</OS_BUILD>
  <OS_INSTALLED_DATE>2017-08-30 14:22:39 -0400</OS_INSTALLED_DATE>
  <LAST_REBOOT>2017-08-30 14:25:05 -0400</LAST_REBOOT>
  <LAST_SHUTDOWN>2017-08-30 14:25:05 -0400</LAST_SHUTDOWN>
```

```
  <UPTIME>4 days </UPTIME>
  <SYSTEM_DIRECTORY>C:\WINDOWS</SYSTEM_DIRECTORY>
  <SYSTEM_DESCRIPTION>Windows 7 Machine</SYSTEM_DESCRIPTION>
  <RAM_TOTAL>512.00MB</RAM_TOTAL>
  <RAM_USED>180MB</RAM_USED>
  <CS_MANUFACTURER>VMware, Inc.</CS_MANUFACTURER>
  <CS_MODEL>VMware Virtual Platform</CS_MODEL>
  <CHASSIS_TYPE>Other</CHASSIS_TYPE>
  <USER_LOGGED>Tom</USER_LOGGED>
  <CS_DOMAIN>WORK</CS_DOMAIN>
  <USER_NAME>Administrator</USER_NAME>
  <USER_DOMAIN>Work</USER_DOMAIN>
  <BIOS_NAME>PhoenixBIOS 4.0 Release 5.5     </BIOS_NAME>
  <BIOS_VERSION>INTEL  - 6040000</BIOS_VERSION>
  <BIOS_MANUFACTURER>Phoenix Technologies LTD</BIOS_MANUFACTURER>
  <BIOS_DESCRIPTION>PhoenixBIOS 4.0 Release 5.5  </BIOS_DESCRIPTION>
  <BIOS_SERIAL_NUMBER>VMware-56 4d bd d3 5e 4f a5 4e-6a ce a0 d3 39 bd ae 02
    </BIOS_SERIAL_NUMBER>
  <MOTHERBOARD_PRIMARY_BUS>PCI</MOTHERBOARD_PRIMARY_BUS>
  <MOTHERBOARD_SECONDARY_BUS>ISA</MOTHERBOARD_SECONDARY_BUS>
  <PROCESSORS>CPU Chip Count: 1
CPU Core Count: 0
CPU0: Intel Celeron processor (0 cores)  </PROCESSORS>
  <SOUND_DEVICES>Creative AudioPCI (ES1371,ES1373) (WDM)
</SOUND_DEVICES>
  <CDROM_DEVICES>TSSTcorp DVD+-RW TS-U633F
</CDROM_DEVICES>
  <VIDEO_CONTROLLERS>VMware SVGA II
</VIDEO_CONTROLLERS>
  <REGISTRY_SIZE>1MB</REGISTRY_SIZE>
  <REGISTRY_MAX_SIZE>86MB</REGISTRY_MAX_SIZE>
  <DISK_DRIVES>
    <DiskDrive>
      <NAME>Drive C: (Physical Disk) FileSystem: NTFS Used: 2.08GB Total: 39.99GB</NAME>
      <DISK_SIZE>39.9906</DISK_SIZE>
      <DISK_USED>2.07966</DISK_USED>
      <DISK_FREE>37.9109</DISK_FREE>
      <PERCENT_USED>5.2</PERCENT_USED>
    </DiskDrive>
  </DISK_DRIVES>
  <NETWORK_INTERFACES>
    <NetworkInterface>
      <NIC>AMD PCNET Family PCI Ethernet Adapter - Packet Scheduler
Miniport</NIC>
      <MAC>00:0C:29:BD:AE:03</MAC>
      <IP>192.168.220.132</IP>
      <DHCP_ENABLED>True</DHCP_ENABLED>
    </NetworkInterface>
  </NETWORK_INTERFACES>
  <PRINTERS></PRINTERS>
  <STARTUP_PROGRAMS>
    <StartupProgram>
      <NAME>desktop</NAME>
    </StartupProgram>
    <StartupProgram>
      <NAME>VMware Tools</NAME>
      <COMMAND_EXE>C:\Program Files\VMware\VMware Tools\VMwareTray.exe</COMMAND_EXE>
      <COMMAND_ARGS />
      <FILE_INFO>
        <FILE_NAME>VMwareTray.exe</FILE_NAME>
```

```
      <FILE_DESCRIPTION>VMware Tools tray application</FILE_DESCRIPTION>
      <FILE_VERSION>8.4.6.16648</FILE_VERSION>
      <PRODUCT_NAME>VMware Tools</PRODUCT_NAME>
      <PRODUCT_VERSION>8.4.6 build-385536</PRODUCT_VERSION>
      <COMPANY_NAME>VMware, Inc.</COMPANY_NAME>
    </FILE_INFO>
  </StartupProgram>
  <StartupProgram>
    <NAME>VMware User Process</NAME>
    <COMMAND_EXE>C:\Program Files\VMware\VMware Tools\VMwareUser.exe</COMMAND_EXE>
    <COMMAND_ARGS />
    <FILE_INFO>
      <FILE_NAME>VMwareUser.exe</FILE_NAME>
      <FILE_DESCRIPTION>VMware Tools Service</FILE_DESCRIPTION>
      <FILE_VERSION>8.4.6.16648</FILE_VERSION>
      <PRODUCT_NAME>VMware Tools</PRODUCT_NAME>
      <PRODUCT_VERSION>8.4.6 build-385536</PRODUCT_VERSION>
      <COMPANY_NAME>VMware, Inc.</COMPANY_NAME>
    </FILE_INFO>
  </StartupProgram>
</STARTUP_PROGRAMS>
<PROCESSES>
  <MachineProcess>
    <NAME>konea.exe</NAME>
    <COMMAND_EXE>C:\Program Files (x86)\Quest\KACE\konea.exe</COMMAND_EXE>
    <COMMAND_ARGS/>
    <FILE_INFO>
      <FILE_NAME>konea.exe</FILE_NAME>
      <FILE_DESCRIPTION>konea</FILE_DESCRIPTION>
      <FILE_VERSION>255.239.6</FILE_VERSION>
      <PRODUCT_NAME>KACE Agent</PRODUCT_NAME>
      <PRODUCT_VERSION>255.239.6</PRODUCT_VERSION>
      <COMPANY_NAME>Quest Software Inc.</COMPANY_NAME>
    </FILE_INFO>
  </MachineProcess>
</PROCESSES>
<NT_SERVICES>
  <NtService>
    <NAME>Alerter</NAME>
    <DISPLAY_NAME>Alerter</DISPLAY_NAME>
    <STATUS>SERVICE_STOPPED</STATUS>
    <STARTUP_TYPE>SERVICE_DISABLED</STARTUP_TYPE>
    <DESCRIPTION />
    <LOGON_AS_USER>NT AUTHORITY\LocalService</LOGON_AS_USER>
    <CAN_INTERACT_WITH_DESKTOP>False</CAN_INTERACT_WITH_DESKTOP>
    <COMMAND_EXE>C:\WINDOWS\system32\svchost.exe</COMMAND_EXE>
    <COMMAND_ARGS> -k LocalService</COMMAND_ARGS>
    <FILE_INFO>
      <FILE_NAME>svchost.exe</FILE_NAME>
      <FILE_DESCRIPTION>Generic Host Process for Win32 Services</FILE_DESCRIPTION>
      <FILE_VERSION>6.1.7600.16385 (win7_rtm.090713-1255)</FILE_VERSION>
      <PRODUCT_NAME>Microsoft® Windows® Operating System</PRODUCT_NAME>
      <PRODUCT_VERSION>6.1.7600.16385</PRODUCT_VERSION>
      <COMPANY_NAME>Microsoft Corporation</COMPANY_NAME>
    </FILE_INFO>
  </NtService>
</NT_SERVICES>
<INSTALLED_software>
  <software>
    <DISPLAY_VERSION>5.2.38916</DISPLAY_VERSION>
```

```
      <HELP_LINK />
      <README />
      <INSTALL_DATE>20170830</INSTALL_DATE>
      <PUBLISHER>Quest Software Inc.</PUBLISHER>
      <UNINSTALL_STRING />
      <URLINFO_ABOUT />
      <DISPLAY_NAME>Quest KACE Agent</DISPLAY_NAME>
   </software>
  </INSTALLED_software>
  <CLIENT_VERSION>8.0.xxxxx</CLIENT_VERSION>
</MachineStruct>
```

## *Valid XML schema for Linux and Mac devices*

Files used to upload inventory information for Linux and Mac devices must use valid XML schemas.

The following is an example of an XML schema for Linux and Mac devices.

```
<?xml version="1.0" encoding="utf-8"?>
            <MachineStruct>
                  <NAME>@@__m_versionHostName__@@</NAME>
                  <CLIENT_VERSION>@@__m_appVersion__@@</CLIENT_VERSION>
                  <IP>@@__m_IPAddress__@@</IP>
                  <MAC>@@__m_versionKaceId__@@</MAC>
                  <OS_NAME>@@__m_operatingSystemCaption__@@</OS_NAME>
                  <OS_NUMBER>@@__m_operatingSystemVersion__@@</OS_NUMBER>
                  <OS_MAJOR>@@__m_operatingSystemVersionMajor__@@</OS_MAJOR>
                  <OS_MINOR>@@__m_operatingSystemVersionMinor__@@</OS_MINOR>
                  <SERVICE_PACK></SERVICE_PACK>
                  <INSTALL_DATE></INSTALL_DATE>
  <OS_ARCH>@@__m_operatingSystemOSArchitecture__@@</OS_ARCH>
                  <OS_FAMILY>@@__m_operatingSystemOSFamily__@@</OS_FAMILY>
                  <OS_VERSION>@@__m_operatingSystemVersion__@@</OS_VERSION>
                  <OS_BUILD>@@__m_operatingSystemBuildNumber__@@</OS_BUILD>
                  <DOMAIN>@@__m_userAccountDomain__@@</DOMAIN>
                  <CS_DOMAIN>@@__m_userAccountDomain__@@</CS_DOMAIN>
  <LAST_REBOOT>@@__m_operatingSystemLastBootupTime__@@</LAST_REBOOT>
                  <TZ_AGENT>@@__m_versionTimeZone__@@</TZ_AGENT>
                  <UPTIME>@@__m_operatingSystemUptime__@@</UPTIME>
  <RAM_TOTAL>@@__m_operatingSystemTotalVisibleMemorySize__@@</RAM_TOTAL>
  <RAM_USED>@@__m_operatingSystemUsedPhysicalMemory__@@</RAM_USED>
                  <CS_MANUFACTURER>@@__m_biosManufacturer__@@</CS_MANUFACTURER>
                  <CS_MODEL></CS_MODEL>
                  <USER_LOGGED>@@__m_userAccountName__@@</USER_LOGGED>
                  <USER>@@__m_userAccountName__@@</USER>
                  <USER_NAME>@@__m_userAccountName__@@</USER_NAME>
                  <USER_FULLNAME>@@__m_userAccountFullName__@@</USER_FULLNAME>
                  <USER_DOMAIN>@@__m_userAccountDomain__@@</USER_DOMAIN>
                  <BIOS_NAME>@@__m_biosName__@@</BIOS_NAME>
                  <BIOS_VERSION>@@__m_biosVersion__@@</BIOS_VERSION>
                  <BIOS_MANUFACTURER>@@__m_biosManufacturer__@@</BIOS_MANUFACTURER>
                  <BIOS_DESCRIPTION>@@__m_biosName__@@</BIOS_DESCRIPTION>
      <BIOS_SERIAL_NUMBER>@@__m_biosSerialNumber__@@</BIOS_SERIAL_NUMBER>
                  <MOTHERBOARD_PRIMARY_BUS></MOTHERBOARD_PRIMARY_BUS>
                  <MOTHERBOARD_SECONDARY_BUS></MOTHERBOARD_SECONDARY_BUS>
                  <PROCESSORS>@@__m_processorList__@@</PROCESSORS>
                  <SOUND_DEVICES>@@__m_soundDeviceDescription__@@</SOUND_DEVICES>
                  <CDROM_DEVICES>@@__m_CDROMDeviceName__@@</CDROM_DEVICES>
                  <MONITOR>@@__m_desktopMonitorDescription__@@</MONITOR>
  <VIDEO_CONTROLLERS>@@__m_videoControllerName__@@</VIDEO_CONTROLLERS>
                  <DISK_DRIVES>
```

```
@@__m_logicalDiskDriveList__@@</DISK_DRIVES>
    <NETWORK_INTERFACES>
@@__m_networkAdapterConfigurationList__@@</NETWORK_INTERFACES>
     <PRINTERS>@@__m_printerList__@@</PRINTERS>
     <STARTUP_PROGRAMS>
@@__m_startupProgramsList__@@</STARTUP_PROGRAMS>
     <PROCESSES>
@@__m_processList__@@</PROCESSES>
     <INSTALLED_software>
@@__m_installedProgramsList__@@</INSTALLED_software>
   </MachineStruct>
```

## *Upload an XML file using the Administrator Console*

You can upload an XML file that contains device inventory information using the Administrator Console. This type of information is referred to as manual inventory information.

The KACE Agent is installed on the device that is having its inventory information added.

You create the XML file on the device to be inventoried, then move to the appliance to upload the file.

Manual inventory information appears on the *Software* page but it does not appear on the *Software Catalog* page. See:

- Managing applications on the Software page
- Managing Software Catalog inventory

1. Generate an XML file that contains the information.
    a. On a device where the KACE Agent is installed, open a command prompt or terminal window.
    b. Go to the Quest KACE installation directory.

        **For example:**

        - Windows 32-bit systems: `C:\Program Files\Quest\KACE`
        - Windows 64-bit systems: `C:\Program Files (x86)\Quest\KACE`
        - Mac OS X systems: `/Library/Application Support/Quest/KACE/bin`
        - Linux systems: `/opt/quest/kace/bin`

    c. Enter the following command:

        **`KInventory -machine -output` filename**

    Where **filename** is the path to the XML file you want to create. If the path contains spaces, enclose the entire path in double quotation marks.

    The Agent collects the inventory data and generates the XML file.
2. On the appliance Administrator Console, go to the *Devices* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Dashboard**.
3. Select **Choose Action** > **New** > **Manual Device** to display the *Device Detail* page.
4. Under *Import Device*, click **Browse**.
5. Select the file, then click **Open** or **Choose**.
6. Click **Save**.

The device's information is added to inventory. If you uploaded an XML file, the appliance ignores all other information on the page and uses the XML file for inventory information.

# Forcing inventory updates

You can force managed devices to update their inventory information outside of the regularly scheduled reporting times.

To force inventory updates, one of the following conditions must be met:

- The KACE Agent must be installed on the devices and there must be an active messaging protocol connection between the appliance and the devices.
- Agentless management must be enabled for the devices.

You cannot force an update on devices that are not either Agent-managed or Agentless-managed devices.

Any Managed Installations associated with selected devices are always deployed in order, regardless of whether their specified software packages come from the Software Catalog or the Software list.

## Force inventory updates from the appliance

You can use the appliance Administrator Console to force devices to report inventory.

1. Go to the *Devices* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Dashboard**.
2. Select the check boxes next to the devices whose inventory you want to update.

    **To avoid overwhelming the appliance, do not select more than 50 devices to update at once.**
3. Select **Choose Action** > **Force Inventory**.

Inventory information is updated.

## Force inventory updates from Windows devices

You can force Windows devices to report inventory by running commands on the devices.

1. Log in to the Windows device and open a command prompt.
2. Go to one of the following directories:
    - On 32-bit systems: `C:\Program Files\Quest\KACE\`
    - On 64-bit systems: `C:\Program Files (x86)\Quest\KACE\`

    **NOTE:** For Windows Vista and later, use *Run as Administrator* when running the command.
3. Enter the following command:

```
runkbot 4 0
```

Inventory information is updated.

## Force inventory updates from Mac OS X devices

You can force Mac OS X devices to report inventory by running commands on the devices.

1. Log in to the Mac OS X device and open a terminal from **Applications** > **Utilities**.
2. Go to the following directory:

```
/Library/Application Support/Quest/KACE/bin/
```

3. Enter the following command:

```
sudo ./runkbot 2 0
```

Inventory information is updated.

## Force inventory updates from Linux devices

You can force Linux devices to report inventory by running commands on the devices.

1. Log in to the Linux device and open a terminal from **Applications** > **System Tools**.
2. Go to the following directory:

```
/opt/quest/kace/bin/
```

3. Enter the following command:

```
sudo ./runkbot 2 0
```

Inventory information is updated.

# Managing MIA devices

Devices that are under management but that have not communicated with the appliance in the last 1 to 90 days are considered to be MIA (missing in action) or out-of-reach. You can configure MIA device settings and manage MIA devices as needed.

**NOTE:** Your product license agreement entitles you to manage a specified number of devices that are classified as Managed Computers, Monitored Devices, and Assets. Be aware that devices count toward these limits even if devices are MIA (missing in action) or no longer in use. However, devices that are added to inventory manually, or through the API, do not count toward license limits. See View product licensing information.

**NOTE:** To increase your license capacity, go to the Quest website: https://quest.com/buy.

## Configure MIA settings

You can configure the appliance to automatically delete MIA devices from inventory after devices have not checked in for a specified number of days. Automatically deleting MIA devices can reduce the need to delete MIA devices manually.

Be aware that the process that deletes MIA devices runs daily at 03:45, and it can delete up to 100 devices during a single run. If there are more than 100 MIA devices to be deleted, or if you must delete devices immediately, consider deleting devices manually.

1. Go to the *Devices* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Dashboard**.
2. Select **Choose Action** > **Configure MIA Settings** to display the *MIA Settings* page.
3. Provide the following information:

| Option | Description |
|---|---|
| **Automatically Remove MIA Devices** | Archive or delete managed devices that are MIA (missing in action) after the specified period of time. Clear the check box to prevent MIA devices from being Archived or deleted automatically. |
| **After n days** | The number of days MIA devices remain in inventory if *Automatically Relete MIA Devices* is selected. Managed devices that do not communicate with the appliance for the specified number of days are automatically deleted or archived, as specified. |
| **Archive MIA Asset-Devices** | Select this option to archive the MIA devices after the specified number of days. |
| **Delete MIA Devices** | Select this option to permanently delete the MIA devices after the specified number of days. |

4. Click **Save**.

   **Devices are deleted when the deletion process runs daily at 03:45. The process can delete up to 100 devices during a run.**

If there are more than 100 MIA devices to be deleted, or if you must delete devices immediately, consider deleting devices manually. See Delete MIA devices manually.

# Apply labels to MIA devices

You can use labels to manage groups of MIA devices.

1. Go to the *Devices* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **Dashboard**.
2. **Optional**: To view MIA devices: In the *View By* drop-down list, which appears above the table on the right, select **MIA**, then select the number of syncs the device missed, or the number of days the device has been missing.
3. Select the check box next to one or more devices.
4. Select **Choose Action** > **Apply Labels** to display the *Apply Labels* dialog.
5. Search for labels, or drag a listed label into *Apply these labels*, and click **Apply Labels**.

# Delete MIA devices manually

You can delete MIA devices manually as needed.

To configure the appliance to automatically delete MIA devices, see Configure MIA settings.

1. Go to the *Devices* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Inventory**, then click **Dashboard**.

2. **Optional**: To view MIA devices: In the *View By* drop-down list, which appears above the table on the right, select **MIA**, then select the number of syncs the device missed, or the number of days the device has been missing.
3. Select the check box next to one or more devices.
4. Select **Choose Action** > **Delete**, then click **Yes** to confirm.

# Troubleshoot devices that fail to appear in inventory

If Agent-managed devices do not appear in inventory, verify Agent and appliance configuration.

By default, KACE Agents installed on managed devices communicate with the appliance using HTTP over ports 80 and 443. If network connectivity is in place, but newly installed Agents do not connect to the appliance, there might be problems with the default `kbox` hostname in DNS.

1. Install the Agent with hostname or IP address correctly specified:

   **Windows**

   ```
   msiexec /qn /i ampagent-6.x.xxxxx-x86.msi HOST=my_kace_sma
   ```

   **Mac OS X**

   ```
   hdiutil attach ampagent-6.x.xxxxx-all.dmg
   sudo sh -c 'KACE_SERVER=my_kace_sma installer -pkg /Volumes/Quest_KACE/AMPAgent.pkg
    -target /'
   hdiutil detach /Volumes/Quest_KACE
   ```

   **Linux (RHEL and SLES)**

   ```
   export KACE_SERVER=my_kace_sma
   export KACE_SERVER=my_kace_smasudo rpm -ivh ampagent-6.x.xxxxx.xxxx.xx.rpm
   ```

2. To correct the server name for a device that is already installed, use the AMPTools utility:

   **Windows**

   32-bit systems: `"C:\Program Files\Quest\KACE\AMPTools" host=my_kace_sma`

   64-bit systems: `"C:\Program Files (x86)\Quest\KACE\AMPTools" host=my_kace_sma`

   **Mac OS X**

   ```
   /Library/Application\ Support/Quest/KACE/bin/AMPTools host=my_kace_sma
   ```

   **Linux**

   ```
   /opt/quest/kace/bin/AMPTools host=my_kace_sma
   ```

3. Verify that you are able to ping the appliance, and reach it through a web browser at `http://`**appliance_hostname**.
4. Verify that Internet Options are not set to use proxy. Verify that proxy is excluded for the local network or **appliance_hostname**.
5. Verify that no firewall or anti-spyware applications are blocking communication between the appliance and any of the Agent components, including:

**Table 23. KACE Agent components for each operating system**

| Operating system | Agent components |
|---|---|
| **Windows** | ACUConfig.exe<br>AMPAgent.exe<br>AMPKickstart.exe<br>AMPTools.exe |

| Operating system | Agent components |
|---|---|
| | AMPWatchDog.exe<br>Inventory.exe<br>KCopy.exe<br>KDeploy.exe<br>KInventory.exe<br>konea.exe<br>kpatch.exe<br>KSWMeterSvc.exe<br>KUserAlert.exe<br>runkbot.exe |
| **Mac OS X and Linux** | AMPAgent<br>AMPAgentBootup<br>AMPctl<br>AMPTools<br>AMPWatchDog<br>Inventory<br>KBoxClient<br>KCopy<br>KDeploy<br>KInventory<br>konea<br>kpatch<br>KSWMeterSvc<br>KUpdater<br>KUserAlert<br>runkbot |

6. Verify that the following processes are running:
   - **Windows: AMPAgent.exe, AMPWatchDog.exe, konea.exe.**
   - **Mac and Linux: AMPAgent, konea.**

If, after verifying these items, the Agent still fails to connect to the appliance, contact Quest Support at https://support.quest.com/contact-support.

# Obtaining Dell warranty information

The appliance periodically runs a background service that gathers and updates Dell warranty information on the Dell devices that are in your appliance inventory.

This service runs every four hours. If you have multiple organizations, the service selects a different organization in a round-robin fashion and collects warranty information on approximately 100 devices per organization. Over time, warranty information is gathered and updated for all Dell devices.

You can update Dell warranty information any time, and you can run reports to track warranty information.

**NOTE:** The Dell warranty information is available only for Dell computers that are in inventory. In addition, the appliance must be able to reach the following domain to gather warranty information: **api.dell.com**. See Make necessary websites accessible to the appliance.

# Obtain Dell warranty information on a single Dell device instantly

You can obtain warranty information for any managed Dell device in your inventory from the Administrator Console.

If you have many Dell devices, it might take a while to update the warranty information through the appliance's background service.

1. Go to the *Devices* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Dashboard**.
2. In the list of devices, click the name of a Dell device to display the *Device Detail* page.
3. In the *Inventory Information* section, expand **Hardware**.

    **Dell warranty information appears under the *Dell Service Information* section.**
4. Click **Refresh**.

The warranty information is updated immediately.

# Renew a Dell warranty

You can access the Dell Support website to renew warranties on Dell devices in inventory.

1. Go to the *Devices* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Dashboard**.
2. In the list of devices, click the name of a Dell device to display the *Device Detail* page.
3. In the *Inventory Information* section, expand **Hardware**.
4. Select the **support.dell.com** link in the *Dell Service Information* section.

    **You are directed to the Dell Support website where you can renew your warranty if it is out of date or view additional information.**

# Run Dell warranty reports

You can run reports that show the warranty status of the Dell devices in the inventory. If the Organization component is enabled on your appliance, you can run these reports at the organization level and at the System level.

1. Go to the *Reports* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Reporting**, then click **Reports**.

2. In the *View By* drop-down list, which appears above the table on the right, select **Dell Warranty** to display the Dell Warranty reports.
3. In the *Generate Report* column, click a report type to run the report.

**See About reports.**

# Managing applications on the Software page

Applications that are found on managed devices are listed on the *Software* page.

# About the Software page

The *Software* page shows all the applications installed on managed devices and any applications that have been added to inventory manually or uploaded using the inventory API.

If the Organization component is enabled on your appliance, you manage applications for each organization separately.

The information and features accessible from the *Software* page differ from information and features available from the *Software Catalog* page. See Differences between the Software page and the Software Catalog page.

## View items in Software page inventory

You can view items that have been added to inventory on the *Software* page. If the Organization component is enabled on your appliance, you view *Software* page inventory for each organization separately.

1. Go to the *Software* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **Software**.

# Tracking changes to inventory settings

If History subscriptions are configured to retain information, you can view the details of the changes made to settings, assets, and objects.

This information includes the date the change was made and the user who made the change, which can be useful during troubleshooting. See About history settings.

# Adding and deleting applications in Software page inventory

Applications are added to the *Software* page inventory automatically when managed devices upload inventory information to the appliance. In addition, you can add applications to the *Software* page manually as needed.

# Add applications to Software page inventory manually

You can manually add applications to the *Software* page inventory list as needed.

Usually, it is best to have applications added to the appliance inventory automatically, than to add applications to the appliance manually. However, adding applications manually is useful if you want to add an application that is not currently installed on managed devices. You can manually add the application, then create a Managed Installation for it, and deploy it to managed devices.

If you add applications manually, you might want to include a Custom Inventory rule so that information about the applications is current and packages are not reinstalled each time Agents check in. See Writing custom inventory rules.

**TIP:** Applications that are added manually are displayed on the *Software* page, but they are not displayed on the *Software Catalog* page. You cannot add applications manually to the *Software Catalog* page.

1. Go to the *Software Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **Software**.
   c. Select **Choose Action > New**.
2. Provide general information: *Name*, *Version*, *Publisher*.

   **For proper downstream reporting, enter this information consistently across software inventory.**
3. Provide the following information:

| Option | Description |
|---|---|
| **Assign To Label** | (Optional) The label associated with the item. |
| **Notes** | Any additional information you want to provide. |
| **Supported Operating Systems** | The operating systems on which the application runs. Applications are deployed only to devices with the selected operating systems.<br>a. Click **Manage Operating Systems**.<br>b. In the **Operating Systems** dialog box that appears, select the OS versions in the navigation tree, as applicable.<br>You have an option to select OS versions by their family, product, architecture, release ID, or build version. You can choose a specific build version, or a parent node, as needed. Selecting a parent node in the tree automatically selects the associated child nodes. This behavior allows you to select any future OS versions, as devices are added or upgraded in your managed environment. For example, to select all build current and future versions associated with the Windows 10 x64 architecture, under **All > Windows > Windows 10**, select **x64**. |
| **Custom Inventory Rule** | (Optional) The custom inventory rules to apply to the application. Custom inventory rules enable you to detect applications and other items on a device and capture details for reporting.<br>For example, the appliance first verifies whether an application is present on a device before deploying that application. In some instances, however, installed programs do not register in *Add/Remove Programs* or in standard areas of the registry. In such cases, the appliance might not be able to detect the presence of the application without additional information from the administrator. Therefore, the appliance might |

| Option | Description |
|---|---|
| | repeat the installation each time the device connects. Custom Inventory rules can prevent this.<br>The following rule verifies that the version of the Network Associates VirusScan installed on a device is newer than a given version before deploying it:<br>`RegistryValueGreaterThan(HKEY_LOCAL_MACHINE\Software\Network Associates\TVD\Shared Components\VirusScan Engine\4.0.xx,szDatVersion,4.0.44)`<br>See Getting values from a device (Custom Inventory Field). |

4. Next to *Upload and Associate File*, click **Browse** or **Choose File** to locate a file, then click **Open** or **Choose**.

   **To distribute applications using Managed Installations or File Synchronizations, you need to associate the actual application files with the application.**

5. To prevent the file from being copied to Replication Shares, select **Don't Replicate Associated File**.

   **This is useful for large files that you do not want users to install from Replication Shares, such as software suites.**

6. **Optional**: Select a *Category* and *Threat Level* for the software.
7. Click **Save**.

**Related topics**

Using software threat levels and categories

## Delete applications

Deleting applications from the *Software* page removes them from the *Software* page inventory, and also removes Managed Installations or File Synchronizations that are associated with applications.

However, if the deleted applications are installed on managed devices, the records for those applications are recreated, with new IDs, when the devices update inventory information. Managed Installations and File Synchronizations that were associated with the deleted applications, however, are not recreated.

1. Go to the *Software* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **Software**.
2. Select the check box next to one or more applications.
3. Select **Choose Action** > **Delete**, then click **Yes** to confirm.

# Creating Software assets

To set up License Compliance for applications that appear on the *Software* page, you first need to add Software assets for those applications. After you create Software assets, you can associate them with License assets.

You can create assets for applications that have been added to the appliance automatically or manually.

**NOTE:** Software assets are not required to set up License Compliance for applications on the *Software Catalog* page.

If the Organization component is enabled on your appliance, you create Software assets for each organization separately.

# Add Software assets in the Inventory section

You can add Software assets for one or more applications by selecting the applications in the *Inventory* section on the *Software* list.

Software assets can also be added from the *Assets* section. See Add Software assets in the Assets section.

1. Go to the *Software* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Software**.
2. Select the check box next to one or more applications.
3. Select **Choose Action** > **Create Asset**.

    **The assets are created, and they appear on the *Assets* page.**

# Add Software assets in the Assets section

You can add Software assets one-at-a-time in the *Assets* section.

Software assets can also be added from the *Inventory* section. See Add Software assets in the Inventory section.

1. Go to the *Assets* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Asset Management**, then click **Assets**.
2. Select **Choose Action** > **New** > **Software** to display the *Software Asset Detail* page.
3. Complete the asset fields as follows:
    a. In the *Name* field, enter a name for the asset.

        **For example, Office Pro SW Asset.**

    b. **Optional**: In the *Software* field, select the name of the application to associate with the asset. To search for items, begin typing in the field.
    c. **Optional**: In the *Software Label* field, select a label in the *Select label* drop-down list. The list is empty unless you have created a Smart Label. To filter the labels list, enter a few characters of the label name in the *Filter* field.
4. Click **Save**.

The new asset appears on the *Assets* page.

# Attach digital assets to applications and select supported operating systems

To distribute applications to managed devices using Managed Installations or User Console downloads, you need to attach the appropriate digital assets to applications. Digital assets are the files required for deployment, such as installers. In addition, you need to select the supported operating systems for the application. You perform these tasks on the *Software* detail page.

To associate multiple files with an application, create a ZIP file that contains the files, then associate the resulting archive file with the application.

**TIP:** Digital assets can be attached to applications displayed on the *Software* page, but they cannot be attached to items in the *Software Catalog* page.

1. Go to the *Software Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Software**.
    c. Click the name of a software application.
2. Do one of the following:
    - **Next to** *Upload and Associate File***, click Browse or Choose File.**
    - **Next to** *Upload and Associate Client Drop File***, click Browse or Choose File. This option is available only if you have copied files to the appliance or organization Client Drop location, and those files are larger than the size specified in the appliance's** *Client Drop File Size Filter* **or the organization's in the Client Drop Size. If the Organization component is enabled on your appliance, files are available to the selected organization only. To make files available to multiple organizations, copy the files to the Client Drop location for each organization. Copy files to the appliance Client Drop location.**
3. Locate the file to upload, then click **Open** or **Choose**.
4. In the *Supported Operating Systems* section, select the operating systems on which the application can be installed.
    a. Click **Manage Operating Systems**.
    b. In the **Operating Systems** dialog box that appears, select the OS versions in the navigation tree, as applicable.

        **In the Operating Systems dialog box that appears, select the OS versions in the navigation tree, as applicable.**

    You have an option to select OS versions by their family, product, architecture, release ID, or build version. You can choose a specific build version, or a parent node, as needed. Selecting a parent node in the tree automatically selects the associated child nodes. This behavior allows you to select any future OS versions, as devices are added or upgraded in your managed environment. For example, to select all build current and future versions associated with the Windows 10 x64 architecture, under **All** > **Windows** > **Windows 10**, select **x64**.

    **NOTE:** If no operating systems are selected, the application cannot be distributed to managed devices. Deployments such as Managed Installations can be created, but they can be deployed only if the correct supported operating system information is provided.
5. Modify other details as necessary, then click **Save**.

    **NOTE:** The table at the bottom of the *Software Detail* page shows which devices have the software installed.

# Copy files to the appliance Client Drop location

You can upload large files, such as application files and backup files, to the appliance by copying them to the Client Drop location on the appliance. Copying files to the Client Drop location is an alternative to uploading files

through the Administrator Console using the default HTTP mechanism, which can result in browser timeouts for large files.

- Enable file sharing (Samba). See Configure security settings for the appliance.
- If the Organization component is enabled on your appliance, enable file sharing for each organization. See Configure Admin-level or organization-specific General Settings.
- If the Organization component is not enabled on your appliance, configure the Client Drop File Size Filter setting for the appliance. See Configure appliance General Settings without the Organization component.
- If the Organization component is enabled on your appliance, configure the Client Drop Size setting for each organization. See Configure Admin-level or organization-specific General Settings.

1. In a file system navigator, go to the Client Drop location on the appliance:
   - **In Windows Explorer, enter a UNC path with the appliance host name or IP address. For example: `\\kbox\clientdrop`. Use two backslashes to indicate that the location is a Samba path.**
   - **On Mac OS X, Go > Connect to Server, then enter the SMB address in the** *Server Address* **field.**
   - **On Linux, select Search, then enter the SMB address.**

   **The `client Share` and `clientdrop Share` folders are displayed.**

   **NOTE:** If the Organization component is enabled, each organization has a separate Client Drop location. For example:
   - ORG1: clientdrop
   - ORG2: clientdrop_2
   - ORG3: clientdrop_3
2. If prompted, provide your login credentials for the Client Drop location. These credentials are specified in the appliance security settings. See Configure security settings for the appliance.

   **TIP:** If you are connecting from a Windows device, type \admin in the *Username* field. This prevents the system from using workgroup\admin or domain\admin during authentication.
3. Copy your files to the Client Drop location. If the Organization component is enabled on your appliance, copy the files to the Client Drop location for the organization where you want to select the files.

   **The files are available as follows:**
   - **Application files**: Files are available for selection on the *Software Detail* page provided that they are larger than the size configured for the appliance in the *Client Drop File Size Filter* or for the organization in the Client Drop Size. If the Organization component is enabled on your appliance, files are available to the selected organization only. To make files available to multiple organizations, copy the files to the Client Drop location for each organization.
   - **Appliance backup files**: Appliance backup files that are placed in any Client Drop location are automatically identified as appliance backup files, and they become available for selection on the *Backup Settings* page within five minutes.

If you are uploading application files to be selected on the *Software Detail* page, verify the *Client Drop* location filter setting. The filter setting determines whether files are displayed on the *Software Detail* page, based on their size. See Configure appliance General Settings without the Organization component or Add or edit organizations.

# Using software threat levels and categories

Threat levels and categories can be used to indicate the relative safety of applications and to classify applications.

This information is made available for tracking purposes only. The appliance does not enforce policies based on threat levels or categories.

Software categories classify software as belonging to a specified group, such as software drivers or security applications. For applications listed on the *Software* page, categories are assigned manually. For applications listed on the *Software Catalog* page, software categories are assigned to applications automatically.

## Assign threat levels to applications

You can assign threat levels to applications that are listed on the *Software* page. Threat levels cannot be assigned to items listed on the *Software Catalog* page.

1. Go to the *Software* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Software**.
2. Select the check box next to one or more applications.
3. Select **Choose Action** > **Set Threat Level**, then select a threat level.

## Assign categories to applications

You can assign categories to applications that are listed on the *Software* page. Categories are assigned automatically to applications listed on the *Software Catalog* page.

1. Go to the *Software* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Software**.
2. Select the check box next to one or more applications.
3. Select **Choose Action** > **Set Category**, then select a category.

# Finding and labeling applications

You can use Advanced Search and labels to manage your software inventory.

## About finding applications using Advanced Search

Advanced Search enables you to specify values for each field present in software inventory and search the entire inventory for that particular value or combination of values.

For example, you could use Advanced Search to find devices with a specific operating system that have a specific application installed. See Searching at the page level with advanced options.

# Add manual software labels

You can add manual labels in the *Inventory* section as needed. This is useful when you want to group software applications by manually applying labels to them.

1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
2. Do one of the following:
   - **Select Inventory > Software to display the** *Software* **page.**
   - **Select Inventory > Software Catalog to display the** *Software Catalog* **page.**
3. Select **Choose Action** > **Add Label**.
4. In the *Add Label* window, enter a name for the label.

   **TIP:** Avoid using backslashes (\) in label names. If you need to use a backslash in a label name, add a second backslash (\\) to escape it.
5. Click **Save**.

# Apply manual labels to or remove labels from software

You can apply manual labels to, or remove manual labels from, software in the appliance inventory as needed.

Add a manual label. See Add manual software labels.

1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
2. Do one of the following:
   - **Select Inventory > Software to display the** *Software* **page.**
   - **Select Inventory > Software Catalog to display the** *Software Catalog* **page.**
3. Select the check box next to one or more applications.
4. Do one of the following:
   - **Select Choose Action > Apply Label, then select the label to apply.**
   - **Select Choose Action > Remove Label, then select the label to remove.**

For more information about labels, see Managing manual labels.

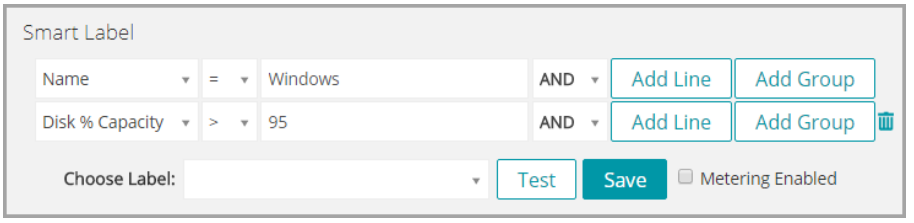
# Add software Smart Labels

You can add software Smart Labels on the *Software* page as needed. This is useful when you want to automatically group applications based on whether they meet the criteria of the Smart Label.

For example, you could use a Smart Label to group all copies of an application purchased from a particular vendor. The label would be applied automatically to applications you have already purchased from the vendor, as well as any you might purchase in the future. See Managing Smart Labels.

**NOTE:** Smart Labels cannot be applied to applications on the *Software Catalog* page.

1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
2. Select **Inventory > Software** to display the *Software* page.
3. Click the **Smart Label** tab above the application list on the right to display the *Smart Label* panel.




4. Specify the criteria required to find applications from a particular vendor:

```
Vendor Contact | contains | Smith
```

5. Click **Test**.

   **Items that match the specified criteria are displayed.**
6. Adjust the criteria as needed until the results are what you expect.
7. In the *Choose label* drop-down list, do one of the following:
   - **Select an existing label to associate with the Smart Label. Type in the *Choose label* field to search for existing labels.**

     **NOTE:** If you select a label group instead of a label, you will not be able to apply the Smart Label to a patching schedule. Patching schedules can only use Smart Labels based on a single item.
   - **Enter a new name for the Smart Label in the *Choose label* field, then press Enter or Return.**

   **NOTE:** Press **Enter** or **Return** after you enter a new Smart Label name to move the text from the search field to the label field.
8. Click **Create**.

Smart Labels are automatically applied to or removed from applications when the applications are updated on the *Inventory* > *Software* page, based on whether the applications meet the specified criteria.

# Managing the ITNinja feed

The ITNinja feed enables you to view systems-management content from ITNinja in the Administrator Console. You enable and disable the ITNinja feed by changing your data sharing settings.

Sponsored by Quest KACE, ITNinja.com (formerly AppDeploy.com) is a product-agnostic IT-focused community website. It is the Internet's leading destination for IT professionals to share information and ask questions about system-management related topics. The website provides a question and answer section and a blogging platform. If you choose to share anonymous usage data with ITNinja, the ITNinja feed appears on pages such as the software, Managed Installation, and File Synchronization detail pages in the Administrator Console. The feed is not available on *Software Catalog* detail page. See Enable the ITNinja feed.

# Enable the ITNinja feed

To enable the ITNinja feed, configure the appliance settings to share anonymous usage data with Quest.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **General Settings**.
3. In the *Share With Quest* section, select the *Share summary usage data...* and *Share detailed usage data...* check boxes.
4. Click **Save**.

For more information on appliance General Settings, see Configure appliance General Settings with the Organization component enabled.

# Viewing ITNinja information

If the ITNinja feed is enabled, you can view ITNinja information related to Managed Installations, File Synchronizations, and software on detail pages in the Administrator Console.

See Enable the ITNinja feed.

**NOTE:** ITNinja information is available for software on the *Software* page, but it is not available for software on the *Software Catalog* page.

## *View ITNinja information for software*

You can view ITNinja information on the *Software Detail* page.

The ITNinja feed must be enabled. See Enable the ITNinja feed.

1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
2. Select **Inventory** > **Software** to display the *Software* page.
3. Click the name of an application to display the *Software Detail* page.
4. Scroll down to the ITNinja section.

## *View ITNinja information for Managed Installations*

You can view ITNinja information for Managed Installations.

The ITNinja feed must be enabled. See Enable the ITNinja feed.

1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
2. Click **Distribution** to display the *Managed Installations* page.
3. Click the name of a Managed Installation to display the *Managed Installation Detail* page.
4. Scroll down to the ITNinja section.

### *View ITNinja information for File Synchronizations*

You can view ITNinja information for File Synchronizations.

The ITNinja feed must be enabled. See Enable the ITNinja feed.

1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
2. Select **Distribution > File Synchronizations** to display the *File Synchronizations* page.
3. Click the name of a File Synchronization to display the *File Synchronization Detail* page.
4. Scroll down to the ITNinja section.

## Disable the ITNinja feed

To prevent the ITNinja feed from being displayed in the Administrator Console, change the appliance settings that share data with Quest. This disables the ITNinja feed.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **General Settings**.
3. In the *Share With Quest* section, clear the *Share detailed usage data...* check box.
4. Click **Save**.

For more information on appliance General Settings, see Configure appliance General Settings with the Organization component enabled.

# Managing Software Catalog inventory

Applications that have been identified as present on managed devices, and that match application definitions in the Software Catalog, are referred to as Software Catalog inventory.

# About the Software Catalog

The Software Catalog is a database that contains standardized information about more than 60,000 Windows and Mac applications and software suites. Information in the catalog includes the name, version, publisher, and category of each application or suite, as well as the operating system on which the application or suite runs.

The Software Catalog is available to all KACE SMAs running version 5.5 or higher. The catalog is continually updated and maintained by Quest to ensure that it is comprehensive, accurate, and up-to-date.

When managed devices that are running Agent version 5.5 or higher report application inventory, that inventory information is compared to items in the Software Catalog. Standardized application inventory information is then displayed under the *Software Catalog* tab.

The Software Catalog enables you to:

- Identify the software installed on devices and view standardized information about that software. See Viewing Software Catalog information.
- Enable metering to gather detailed information about software usage. See Using software metering.
- Associate license information with software in the Software Catalog. This enables you to monitor software license compliance and usage for devices. See Add License assets for Software Catalog inventory.
- Identify and mark software as Not Allowed. This enables you to prevent the use of software marked as Not Allowed. See Using Application Control.

The catalog contains information about software designed to run on Windows and Mac operating systems only. Software designed to run on Linux and other unsupported operating systems are not available in the catalog.

# Application classifications

Applications that appear on the Software Catalog page are classified as Discovered, Not Discovered (Cataloged), and Uncataloged. The classification determines the kinds of actions you can perform and the type of information that is available for the applications.

### Discovered applications

Discovered applications are executables in the appliance inventory that match the definitions of applications in the Software Catalog. You can enable metering for Discovered applications and suites, mark them as Not Allowed, and add license information for them. In addition, the Discovered application list can be exported in CSV format. You can export the Discovered application list, the Uncataloged list, and the Locally Cataloged list; you cannot export the entire Software Catalog.

### Not Discovered applications

Applications that do not exist in the appliance inventory, but that do exist in the Quest KACE Software Catalog, are referred to as Not Discovered applications. You can enable metering for Not Discovered applications, mark them as Not Allowed, and add license information for them. However, because the applications have not been found in the local appliance inventory, the Not Discovered application list cannot be exported in CSV format.

### Uncataloged applications

Uncataloged applications are executables that are in the appliance inventory but that do not appear in the Software Catalog. You can view applications that are listed as Uncataloged on the *Software Catalog* page. However, you cannot enable metering for Uncataloged applications, mark them as Not Allowed, or add license information for them.

Uncataloged applications must be added to the local or public Software Catalog before they can be metered, marked as Not Allowed, or associated with license information. See Adding applications to the Software Catalog.

**NOTE:** If data retention is disabled for Uncataloged applications, the Uncataloged applications list is empty. See Configure Admin-level or organization-specific General Settings.

# About cataloged applications

Cataloged applications are executables that are in the official Software Catalog database. This includes both applications that appear in the appliance inventory (Discovered applications) and applications that do not appear in the inventory (Not Discovered applications).

# About Locally Cataloged applications

Applications that are not in the official version of the Software Catalog, but that have been added to the local version on the appliance, are referred to as Locally Cataloged applications.

## About Not Allowed applications

Not Allowed applications are applications that have been marked as Not Allowed on the *Software Catalog* page.

Windows and Mac applications can be marked as Not Allowed only if they are classified as Discovered, Not Discovered, or Locally Cataloged applications. Applications that are Uncataloged cannot be marked as Not Allowed until they are added to the Software Catalog. Applications that are marked as Not Allowed can be blocked or denying access on managed devices if those devices have an Application Control-enabled label applied to them.

See Using Application Control.

## Application categories

Applications in the Software Catalog are grouped into categories, such as Productivity Applications and Antivirus Utilities.

These categories are useful for Reporting and License Compliance. In addition, applications in the *Operating System* category cannot be metered.

## How Software Catalog information is collected

At a specified interval, the appliance collects information about every executable installed on managed devices. This information includes the executable's publisher, published date, file size, and registry information.

The information is compared to information in the Software Catalog to determine whether Discovered applications are Cataloged or Uncataloged. See Schedule metering and inventory collection intervals.

## How the Software Catalog is used with the Organization component

Each appliance has a single Software Catalog. If the Organization component is enabled on your appliance, all organizations use the same Software Catalog that is installed on the appliance. In addition, Locally Cataloged applications are available to all organizations.

Uncataloged applications, and settings such as metering and license configuration, however, are organization-specific. For example, if you enable metering for an application in one organization, it is enabled only for that organization. You enable metering and other settings separately for each organization.

Similarly, Discovered applications are also organization-specific. Applications are marked as Discovered only if they are found in the inventory of the organization.

## How Software Catalog information is localized

The application categories in the Software Catalog are localized to match the appliance locale setting. However, application names, such as Microsoft Excel, are not localized.

## How you can help improve the Software Catalog

The Software Catalog is continually updated as new information or new applications become available and as cataloging requests are received. You can help improve the catalog by sharing your appliance inventory information with Quest KACE and the ITNinja community.

The Quest KACE catalog team uses this information to identify new applications and standardize application names and versions. See Configure data sharing preferences.

# Differences between the Software page and the Software Catalog page

Both the Software page and the Software Catalog page use the application information reported by managed devices. However, the two pages represent separate inventory systems, and the way you perform software management tasks differs for each system.

For more information about managing information on the *Software* page, see Managing applications on the Software page. The following table compares the *Software* page and the *Software Catalog* page:

| Task | Software page | Software Catalog page |
|---|---|---|
| **Inventory collection process** | Uses the classic inventory collection process available in version 5.4 of the appliance. Managed devices that are running Agent version 5.4 and lower report inventory only to the *Software* page; they do not report inventory to the *Software Catalog* page.<br>Managed devices that are running Agent version 5.5 and higher report inventory to both the *Software* page and the *Software Catalog* page. | Uses an inventory collection process introduced in version 5.5 of the appliance. This process gathers information about every executable installed on managed devices.<br>Managed devices must be running Agent version 5.5 or higher to report inventory to the *Software Catalog* page. |
| **Viewing software inventory information** | The *Software* page displays information about all of the applications found on managed devices or added to appliance inventory manually or through WSAPI. | Software inventory information is presented on the *Software Catalog* page as:<br>• **Discovered**: Applications installed on managed devices that match application information in the Software Catalog.<br>• **Not Discovered**: Applications in the Software Catalog that are not installed on managed devices.<br>• **Uncataloged**: Applications that are installed on managed devices but that are not in the Software Catalog.<br>Inventory information added to the appliance manually or through WSAPI is not available under the *Software Catalog* page. |
| **Metering applications** | Not available. | Enabled for each application separately on the *Software Catalog* page or on the *Software Catalog Detail* page. |

| Task | Software page | Software Catalog page |
|---|---|---|
| **Tracking license information for applications** | Enabled by creating a Software asset and a License asset for the application. License information appears on the License Compliance Dashboard widget. It does not appear on the *Licence Compliance* page. | Enabled by creating a License asset and associating it with an application in the Software Catalog. License information appears on both the *License Compliance* page and the License Compliance Dashboard widget. See About License Compliance for Software Catalog applications. |
| **Marking applications as Not Allowed** | Not available. | Available as a flag that is set on the *Software Catalog Detail* page. See Mark applications and suites as Not Allowed. |
| **Adding digital assets to applications** | Available on *Software Detail* pages; used for deploying software to managed devices. See Attach digital assets to applications and select supported operating systems. | Not available. |
| **Distributing software in Managed Installations or File Synchronizations** | Available for applications that have digital assets associated with them. See Distributing software and using Wake-on-LAN. | Not available. |
| **View ITNinja tips and information** | Available on *Software Detail* pages. See Managing the ITNinja feed . | Not available. |
| **Viewing summary license information** | Available on the *License Compliance* and *Software License Configuration* chart on the *Dashboard* page. See About Dashboard widgets. | Available on the *License Compliance* and *Software License Configuration* chart on the *Dashboard* page. See About Dashboard widgets. |
| **Setting threat levels for software** | Available on the *Software* list. See Using software threat levels and categories. | Not available. |
| **Setting software categories** | Available on *Software Detail* pages. See Assign categories to applications. | Predefined by the Quest KACE Software Catalog team. |

# Viewing Software Catalog information

You can view application information on the Software Catalog page.

# View lists of Discovered and Not Discovered applications

On the *Software Catalog* list, you can view Discovered and Not Discovered applications.

**Discovered applications are executables in the inventory that match the definitions of applications in the Software Catalog. You can enable metering for Discovered applications and suites, mark them as Not Allowed, and add license information for them. In addition, the Discovered application list can be exported in CSV format. You can export the Discovered application list, the Uncataloged list, and the Locally Cataloged list; you cannot export the entire Software Catalog.**

Applications that do not exist in the inventory, but that do exist in the Quest KACE Software Catalog, are referred to as Not Discovered applications. You can enable metering for Not Discovered applications, mark them as Not Allowed, and add license information for them. However, because the applications have not been found in the local inventory, the Not Discovered application list cannot be exported in CSV format.

1. Go to the *Software Catalog* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Software Catalog**.
2. Click the **Discovered** tab.

    **The list is filtered to show only those applications that are classified as Discovered. Information for Discovered applications includes:**

| Item | Description |
|---|---|
| **Name** | The name and version of the application. If the application is a suite, the name appears in bold. For example, **Microsoft Office 2010 Professional**. |
| **Publisher** | The application's publisher. This information is normalized to ensure accurate reporting. For example, Microsoft Corp. and Microsoft Inc. are reported as Microsoft Corporation. |
| **Category** | The category of the application as established by the Software Catalog team. |
| **Installed** | The number of managed devices that have the application installed. Click a number to view device information. |
| **Licenses** | The number of licenses available for the application. This information is available only if a License asset has been associated with the application. See Add License assets for Software Catalog inventory. |
| **Variance** | The number of unused licenses remaining. This information is available only if a License asset has been associated with the application. |
| **Recently Added** | The number of devices on which the application has been added in the past seven days. |
| **Recently Removed** | The number of devices from which the application has been removed in the past seven days. |

3. Click the **Not Discovered** tab.

    The list is filtered to show only those applications that are classified as Not Discovered. Information for Not Discovered applications includes:

| Item | Description |
|---|---|
| **Name** | The name and version of the application. If the application is a suite, the name appears in bold. For example, **Microsoft Office 2010 Professional**. |
| **Publisher** | The application's publisher. This information is normalized to ensure accurate reporting. For example, Microsoft Corp. and Microsoft Inc. are reported as Microsoft Corporation. |
| **Category** | The category of the application as established by the Software Catalog team. |
| **Platform** | The operating system on which the application is designed to run. For example, Windows. |

4. To include or exclude a software catalog item from the *License Compliance* page, or from selected reports, select it in the list, click **Choose Action**, and select one of the following options, as required:
   - **Exclude from License Compliance**
   - **Include in License Compliance**
   - **Exclude from Reports**
   - **Include in Reports**
5. To view additional details, click the application name.

**See View details of Software Catalog applications.**

**TIP:** On the *Software Catalog* page, you can search for applications using Advanced Search and Custom Views based on Advanced Search criteria. See Searching at the page level with advanced options.

# View the list of Uncataloged applications

On the *Software Catalog* list, you can view applications that are Uncataloged.

Uncataloged applications are executables that are in the appliance inventory but that do not appear in the Software Catalog. You can view applications that are listed as Uncataloged on the *Software Catalog* list. However, you cannot enable metering for Uncataloged applications, mark them as Not Allowed, or add license information for them. Uncataloged applications must be added to the local or public Software Catalog before they can be metered, marked as Not Allowed, or associated with license information.

Information that is available for Uncataloged applications differs from information that is available for applications whose titles are listed in the public version of the Software Catalog. For example, some information that is available for Cataloged applications might not be available for Uncataloged applications. The information available for Uncataloged applications is limited to the information collected from managed devices.

1. Go to the *Software Catalog* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **Software Catalog**.
2. Click the **Uncataloged** tab.

**The list is filtered to show only those applications that are classified as Uncataloged. Information available for Uncataloged applications includes:**

| Item | Description |
|---|---|
| **Name** | The name and version of the application. |

| Item | Description |
|---|---|
| **Installed** | The number of managed devices that have the application installed. |
| **File Name** | The name of the application executable file. |
| **File Version** | The version number of the application. |
| **Publisher** | The application's publisher. |

3. To include or exclude a software catalog item from the *License Compliance* page, or from selected reports, select it in the list, click **Choose Action**, and select one of the following options, as required:
   - **Exclude from License Compliance**
   - **Include in License Compliance**
   - **Exclude from Reports**
   - **Include in Reports**
4. To view additional details, click the application name.

**See View details of Software Catalog applications.**

# View the list of Locally Cataloged applications

You can use Advanced Search to sort the *Software Catalog* page to show applications that have been added to the local version of the Software Catalog.

Applications that are not in the official version of the Software Catalog, but that have been added to the local version on the appliance, are referred to as Locally Cataloged applications. Locally cataloged applications can be metered, marked as Not Allowed, and associated with License assets.

1. Go to the *Software Catalog* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **Software Catalog**.
2. Click the **Advanced Search** tab above the list on the right, then specify the criteria required to view Locally Cataloged applications:

```
Software Catalog: Local Catalog Only | is | True
```

3. Click **Search**.

**The list is filtered to show only those applications that are Locally Cataloged. Information available for Locally Cataloged applications includes:**

| Item | Description |
|---|---|
| **Name** | The name and version of the application. If the application is a suite, the name appears in bold. For example, **Microsoft Office 2010 Professional**. |
| **Type** | The classification of the application in the Software Catalog. Locally Cataloged applications are classified as Discovered. |
| **Installed** | The number of managed devices that have the application installed. |

| Item | Description |
|---|---|
| **Publisher** | The application's publisher. This information is normalized to ensure accurate reporting. For example, Microsoft Corp. and Microsoft Inc. are reported as Microsoft Corporation. |
| **Category** | The category of the application as established by the Software Catalog team. |
| **Platform** | The operating system on which the application is designed to run. For example, Windows. |

4. To view additional details, click the application name.

**See View details of Software Catalog applications.**

# View details of Software Catalog applications

You can view details of Discovered, Not Discovered, Uncataloged, and Locally Cataloged suites and applications.

To view details of Uncataloged applications, data retention for Uncataloged applications must be enabled. You cannot view details of Uncataloged applications if data retention is disabled. See Configure Admin-level or organization-specific General Settings.

**TIP:** For information about license compliance, go to the *License Compliance* page. See View License Compliance information for Software Catalog applications.

1. Go to the *Software Catalog* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **Software Catalog**.
2. Click the name of a suite or application to display the *Software Catalog Detail* page.

**Information on this page includes:**

| Item | Description |
|---|---|
| **Summary** | |
| Not allowed | Indicates if the suite or application is marked as Not Allowed. Marking applications as Not Allowed prevents them from running on Agent-managed devices. |
| Metered | Indicates if metering is enabled for the suite or application. If metering is enabled for the application, usage data is collected for Agent-managed devices that also have metering enabled. See Enabling and configuring metering for devices and applications. |
| Installed | The number of Agent-managed devices on which the suite or application is installed. |
| Licenses | The number of License assets associated with the suite or application. |
| Expired Licenses | The number of expired License assets associated with the suite or application. |
| Exclude from License Compliance | Indicates if the suite or application appears on the *License Compliance* page. |

| Item | Description |
|---|---|
| Exclude from Reports | Indicates if the suite or application appears on selected reports. |
| **Properties** | |
| Publisher | The publisher of the suite or application. This information is normalized to ensure accurate reporting. For example, Microsoft Corp. and Microsoft Inc. are reported as Microsoft Corporation. |
| Platform | The operating system on which the suite or application is designed to run. For example, Windows. |
| Software Type | Indicates if the suite or application is an individual application, such as Microsoft Word, or a suite of applications, such as Microsoft Office. |
| Publisher License Type | The suggested license type for the suite or application. |
| Category | The category of the suite or application as established by the Software Catalog team.<br>For applications that are Locally Cataloged, this is specified when the cataloging request is submitted. |
| Application ID or Suite ID | A code that identifies the suite or application. |
| General Availability | The date the suite or application was first released to customers. |
| End of Life | The date that support for the suite or application was discontinued. |
| MSRP ($) | The Manufacturer's Suggested Retail Price of the suite or application. |
| Metering Enabled | The date and time when metering was enabled for the suite or application. |
| **Versions or Applications Installed** | |
| File Name | For applications, the name of the executable file. |
| Product Name | For suites, the suite name. |
| Version | The version number associated with the suite or application. |
| Category | The category of the suite or application as established by the Software Catalog team.<br>For applications that are Locally Cataloged, this is specified when the cataloging request is submitted. |
| Language | The language for which the suite or application is designed. For example, English. Applications that are not designed for a specific language are designated as Language Neutral. |

| Item | Description |
|---|---|
| Installed | The number of managed devices that have the suite or application installed. Click a number to view device information. |
| App-V | Refers to Microsoft Application Virtualization (App-V) which manages applications without installing them on devices. |
| Associated Files | One or more files that are associated with the selected version and attached to the software catalog. To attach a file, click +, and select the file location. You can edit or delete attached files, as needed.<br>• To associate a file with a software version, navigate to the file using a file browser.<br>• Alternatively, for larger files, use a Samba share.<br>• Provide a note about the file. For example, Script Host 5.8 - x86 or Script Host 5.8 - x64<br>• To copy the file to the Replication Share, ensure the **Replicate Associated File** check box is selected. |
| Replicated | Indicates if the files are copied to the Replication Share. |
| Notes | A note about the attached file, if one is provided. |
| **Licenses** | Available only if a License asset has been added for the suite or application. |
| Name | The name of the license, such as **Office Professional PO #1234**. This is the name that you use to find the asset. If you plan to have multiple licenses associated with an application consider including a purchase order number or purchase date. |
| Count | The number of installations or seats the license allows. For example, 50. |
| Mode | The mode of the License asset. The mode is used in the License Compliance chart that is displayed on the *Dashboard* of the Administrator Console. Values that are marked as ignored on the *Asset Detail* page are shown with a usage level of 100 percent. |
| Key, Unit Cost, and Expiration | Additional information about the license. You can modify and edit the default information, which can be captured for a License Asset Type. |
| Vendor | The name of the Vendor asset you want to associate with the suite or application. the *Vendor* drop-down list is empty unless you have added a Vendor asset. To search for a vendor, begin typing in the list. |
| Order Number | The purchase order number associated with the license. |
| Purchased | The date the license was obtained. Click in the field, then select a date on the calendar. |
| **Metering** | |

| Item | Description |
|---|---|
| Last Used (days ago) | The number of managed devices that have launched the suite or application in the past 24 hours. |
| 1-7 | The number of managed devices that have launched the suite or application in the past 7 days. |
| 8-30 | The number of managed devices that have launched the suite or application in the past 8-30 days. |
| 31-90 | The number of managed devices that have launched the suite or application in the past 31-90 days. |
| Not Used | The number of managed devices that have not launched the suite or application in the last 90 days. |

# Adding applications to the Software Catalog

Quest reviews its extensive data warehouse and automatically adds new applications to the Software Catalog as needed. If an application does not yet appear in the catalog, however, you can send a cataloging request to the Quest catalog team for consideration.

A cataloging request is a form you can submit to request that an application that is not included in the Software Catalog (Uncataloged) be added to the public Software Catalog. When Quest receives a cataloging request, that request is evaluated to determine whether or not the application should become part of the public Software Catalog. In addition, applications are automatically added to the local version of the Software Catalog on the appliance when cataloging requests are submitted.

As an alternative, if you have applications that are internal to your organization, and you do not want those applications to be added to the public Software Catalog, you can add them to your local version of the Software Catalog. See Submit cataloging requests.

## Submitting cataloging requests automatically adds applications to the local Software Catalog

When you submit a cataloging request for an application, the application is automatically and immediately added to the local version of the Software Catalog on your appliance.

The application then becomes Locally Cataloged, and it can be metered, marked as Not Allowed, and associated with License assets.

If the Organization component is enabled on your appliance, you can submit cataloging requests from any organization, and the title is added to your local appliance Software Catalog immediately. It is available to all of your organizations.

**IMPORTANT: Cataloging requests can be submitted only if data retention for Uncataloged applications is enabled for the organization. See Configure Admin-level or organization-specific General Settings.**

# How Locally Cataloged applications change to Cataloged applications

Applications that are Locally Cataloged change to Cataloged applications when they are added to the public version of the Software Catalog.

Locally Cataloged applications are added to the public version of the Software Catalog when:

- You submit a cataloging request to the Quest KACE catalog team and the application is accepted into the Software Catalog.
- Another customer submits a cataloging request to the Quest KACE catalog team and the application is accepted into the Software Catalog.
- The Software Catalog team pro-actively adds the application to the Software Catalog.

When the Software Catalog that contains the application is updated on your appliance the name of the application might change. For example, if the characteristics, such as the name of the executable, file size, version, and other information of the Cataloged application match the characteristics of your Locally Cataloged application, the local information is replaced by catalog information. If the name of the application matches, but the file size or other information differs significantly, the new application is added but it does not replace the local catalog information.

In other words, the information in the public Software Catalog always takes precedence over local catalog information. Local Catalog applications that match applications in the public Software Catalog are replaced by public Software Catalog entries. However, this does not affect any information you have added for the application, such as licensing information, and it does not change settings such as metering or Not Allowed.

# How custom names are resolved when Locally Cataloged applications are added to the Software Catalog

Application names might be standardized when custom applications are added to the public Software Catalog.

If you use custom names for local applications, the custom names are replaced with standard names when the application is added to the public Software Catalog. For example, if an application named **Updater** was not in the public catalog, you could create a local entry for that application. You could name that application, **MyUpdater**, and it would appear as **MyUpdater** in the local catalog. However, if the application was subsequently added to the public catalog, and the official name was determined to be **RealTime Updater**, the name **MyUpdater** would be replaced with **RealTime Updater** when the public catalog was updated. This name change does not affect metering, license, or history settings. However, if you have custom views or searches based on the old application name, you need to update those views and searches if you want to continue to use them.

# Submit cataloging requests

You can submit cataloging requests for Uncataloged applications as needed. Requests are processed continuously and approved or denied at the discretion of the Quest KACE Software Catalog team.

Data retention for Uncataloged applications is enabled. You cannot submit cataloging requests if data retention is disabled. See Configure Admin-level or organization-specific General Settings.

Some applications, such as supporting executables for applications that are already cataloged, cannot be cataloged. In addition, if you have an Uncataloged application that has several versions, you need to submit cataloging requests for each version separately. You cannot associate multiple executables with a single cataloging request.

**TIP:** You can help improve the cataloging request process by sharing your inventory data with Quest. The Software Catalog team uses this data to identify new applications and standardize application names and versions. See Configure data sharing preferences.

1. Go to the *Software Catalog* list:

a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
b. On the left navigation bar, click **Inventory**, then click **Software Catalog**.

2. Click the **Uncataloged** tab above the list on the left.
3. Click an application name to display the *Software Detail* page.
4. Click **Add to catalog** to display the *Add to Catalog* form.
5. Provide the following information:

| Option | Description |
|---|---|
| **Software Title** | The name you want to use to identify the application. See How custom names are resolved when Locally Cataloged applications are added to the Software Catalog. |
| **Category** | The category of the application. Categories can be useful for organizing and managing applications. |

6. Select sharing options and provide contact information:

| Option | Description |
|---|---|
| **Sharing** | The cataloging option:<br>• **Add software title to this appliance and share with the Quest KACE catalog**: Submit the request to Quest and add the title to the local version of the Software Catalog.<br>• **Add software title to this appliance only**: Add the title to the local version of the Software Catalog, but do not submit the title to the Quest KACE Software Catalog. |
| **Contact Details** | Provide your contact information. The Software Catalog team uses this information to contact you if they have questions about the request. |

7. Click **Save**.

The cataloging request is sent to Quest. The button, **Remove from local Software Catalog**, appears on the *Software Catalog Detail* page. When cataloging requests are added to the public Software Catalog, and that catalog is updated on your appliance, the **Remove from local software catalog** button no longer appears on the *Software Catalog Detail* page. Tracking for cataloging requests is not currently available.

**NOTE:** Information for titles that are added to the public catalog might differ from the information originally submitted. This is because titles are standardized when they are added to the public catalog.

# Cancel cataloging requests and remove local cataloging

You can cancel cataloging requests and remove applications from the local Software Catalog if certain conditions are met.

- No License assets are associated with the applications. You must remove applications from License assets before you can remove applications from the catalog.
- Applications have not been accepted by the Software Catalog team or added to the public catalog. For example, if you submit a request, then cancel it the same day, the likelihood that the Software Catalog team would have accepted it is low, so the request might be canceled. However, if you submit a request, and then cancel that request after a few days or weeks, the Software Catalog team might already have

approved the request and made the title part of the public Software Catalog. In that case, the add to catalog request cannot be canceled.

You can remove Locally Cataloged applications only. Cataloged applications cannot be removed from the catalog.

1. Go to the *Software Catalog* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Software Catalog**.
2. Click an application name to display the *Software Catalog Detail* page.
3. If the application is associated with a License asset:
    a. On the *Software Catalog Detail* page, in the *Licenses* section, click the name of the License asset to display the *License Asset Detail* page.
    b. In the *Applies to Cataloged Software* field, select the name of the application, then click **Remove**.
    c. Click **Save**.
4. Return to the *Software Catalog Detail* page.
5. Click **Remove from local software catalog**.

The title is removed from the local version of the Software Catalog and **Add to catalog** button appears on the *Software Catalog Detail* page.

# Managing License assets for Software Catalog applications

License assets can be associated either with items in the Software Catalog or with items listed on the *Software* page. However, they cannot be associated with both Software Catalog and *Software* page items at once.

If you have existing License assets, you can migrate them from items on the *Software* page to items on the *Software Catalog* page. This enables you to take advantage of features available through the Software Catalog, including License Compliance. See Migrate License assets to applications in the Software Catalog.

## Add License assets for Software Catalog inventory

You can add License assets for applications in the Software Catalog inventory. Adding License assets enables you to view license compliance information on the *License Compliance* list and on the License Compliance *Dashboard* widget.

Software Catalog applications must be classified as *Discovered*, *Not Discovered*, or *Locally Cataloged*. You cannot add License assets for applications classified as *Uncataloged*.

When you associate License assets with applications, you can also view license information on the *Software Catalog Detail* page. If the Organization component is enabled on your appliance, you manage license information for each organization separately.

**TIP:** To add License assets for multiple applications at once, you can import the information from spreadsheets or CSV files. See Example: Import license data from prepared spreadsheets.

1. Go to the *Software Catalog* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Inventory**, then click **Software Catalog**.

2. Click the name of an application to display the *Software Catalog Detail* page.
3. Near the bottom of the page, click **Add New License** to display the *License Asset Detail* page.
4. On the *License Asset Detail* page, on the *General* tab, provide the following information:

| Option | Description |
|---|---|
| **Subtype** | The Asset Subtype to associate with the license. See About Asset Subtypes, custom fields, and device detail preferences. |
| **Asset Status** | The license status, if applicable. You can select a default asset status, or a custom one (if they exist). A default installation of the appliance includes the following asset statuses:<br>• **Active**: Any asset that is deployed, active, or in use.<br>• **Disposed**: An asset that is no longer available for use.<br>• **Expired**: A software license or contract asset that has expired.<br>• **In Stock**: A recently received asset.<br>• **Missing**: Any asset that cannot be located.<br>• **Repair**: An asset that is being repaired.<br>• **Reserved**: An asset that is set aside for a specific person or use.<br>• **Retired**: Any asset that reached its end-of-life state, or is no longer in use.<br>• **Stolen**: An asset that has been reported as stolen.<br>For more information, see View and configure asset lifecycle settings. |
| **Location** | The name of the location where the asset is located. See Managing locations. |
| **Name** | The name of the license, such as **Office Professional PO #1234**. This is the name that you use to find the asset. If you plan to have multiple licenses associated with an application, provide the purchase order number or purchase date in the fields below to differentiate the licenses. |
| **License Count** | The number of installations or seats the license allows. For example, 50. |
| **Applies to Cataloged Software** | Applications in the Software Catalog inventory to which the license applies. You can associate License assets with multiple applications in the Software Catalog if necessary. However, it is not necessary to associate a License asset with multiple versions of the same application because the appliance does this automatically to support upgrades and downgrades. You can simply associate the current version with the License asset when you add the license information.<br>In addition, if you assign applications from different publishers, such as Microsoft Office and Adobe Acrobat, to the same License asset, the total number of seats specified in the License asset is assigned to each application. For example, if the License asset has 100 seats, both Microsoft Office and Adobe Acrobat are assigned 100 seats. |
| **Applies to Software** | Leave this field blank. A software license cannot be associated with applications from the *Software Catalog* inventory and the *Software* page inventory at the same time. For more information on how to create license assets for cataloged software, see Add License assets for Software page inventory. |

| Option | Description |
|---|---|
| **License Mode** | The mode of the License asset. For applications that require licenses, and to display license usage information on the *License Compliance* page, select either *Enterprise* or *Unit License*.<br><br>**NOTE:** Most modes, including *Not Specified*, *Client License*, *Subscription*, *Shareware*, *Freeware*, *OpenSource*, *No Licensing*, and *Site License*, are not used for License Compliance.<br><br>The license mode is used in these sections of the Administrator Console:<br>• The *License Compliance* list. See View License Compliance information for Software Catalog applications.<br>• The License Compliance chart that is displayed on the *Dashboard*. Values that are marked as ignored on the *Asset Detail* page are shown with a usage level of 100 percent. See About Dashboard widgets. |

5. Click **Next**.
6. On the *License Asset Detail* page, on the *Purchase* tab, provide the following information:

| Option | Description |
|---|---|
| **Contract** | The contract asset associated with the license. |
| **Applies to Cataloged Software** | Applications in the Software Catalog inventory to which the license applies. You can associate License assets with multiple applications in the Software Catalog if necessary. However, it is not necessary to associate a License asset with multiple versions of the same application because the appliance does this automatically to support upgrades and downgrades. You can simply associate the current version with the License asset when you add the license information.<br><br>In addition, if you assign applications from different publishers, such as Microsoft Office and Adobe Acrobat, to the same License asset, the total number of seats specified in the License asset is assigned to each application. For example, if the License asset has 100 seats, both Microsoft Office and Adobe Acrobat are assigned 100 seats. |
| **Product Key** | The product key associated with the license. You can modify and edit the default information, which can be captured for a License Asset Type. |
| **Unit Cost** | The unit cost associated with the license. You can modify and edit the default information, which can be captured for a License Asset Type. |
| **Vendor** | The name of the Vendor asset you want to associate with the application. the *Vendor* drop-down list is empty unless you have added a Vendor asset. To search for a vendor, begin typing in the list.<br><br>**NOTE:** Assigning multiple vendors to a single software License asset is not recommended because it can result in inaccurate License Compliance information. |
| **Purchase Order Number** | The purchase order number associated with the license. |
| **Purchase Date** | The date the purchase was made. Click in the field, then select a date on the calendar. |

| Option | Description |
|---|---|
| **Purchase** | Select one or more purchase records associated with this license. See Managing purchase records. |

7. Click **Next**.
8. On the *License Asset Detail* page, on the *Maintenance* tab, provide the following information:

| Option | Description |
|---|---|
| **Includes Upgrade Rights** | Indicates if the license includes upgrade rights. Upgrade rights refer to the ability to upgrade to a newer version of the licensed software, when such versions become available. For more information, see About license upgrades. Select one of the following options:<br>• **Yes**: Upgrade rights are calculated by comparing the number of existing licenses for the selected software with the counts of available licenses for newer versions of the same software.<br>• **Yes - Select from list**: Choose one or more software versions for which you want to grant upgrade rights. Under *Upgrade Software list*, click **Select cataloged software to add**. The list that appears is populated with higher versions of the selected software to which the license can be upgraded. When you click an entry in the list, your selection appears in the *Upgrade Software list* box. You can add one or more versions, as needed. To delete an item from the list, select it in the *Upgrade Software list* box, and click **Remove**.<br>• **No**: If you do not want to grant upgrade rights to the selected software, select this option. |
| **Includes Maintenance** | Whether the license entitles users to upgrade the installed version of the application. See About License Compliance for Software Catalog applications. |
| **Expiration Date** | If the license includes maintenance, the expiration date of the maintenance period.<br>The appliance License Compliance feature leverages Software Catalog information, such as application release dates. If new application versions are released during the maintenance period, they are automatically covered by this License asset. |
| **Includes Downgrade Rights** | Indicates if the license includes downgrade rights. Downgrade rights refer to the ability to apply licenses for newer software versions to older versions of the same software. For more information, see About license downgrades. Select one of the following options:<br>• **Yes**: Downgrade rights are calculated by comparing the number of existing licenses for the selected software with the counts of available licenses for older versions of the same software.<br>• **Yes - Select from list**: Choose one or more software versions for which you want to grant downgrade rights. Under *Downgrade Software list*, click **Select cataloged software to add**. The list that appears is populated with lower versions of the selected software to which the license can be downgraded. When you click an entry in the list, your selection appears in the *Downgrade Software list* box. You can add one or more versions, as needed. To delete an item from the list, select it in the *Downgrade Software list* box, and click **Remove**.<br>• **No**: If you do not want to grant downgrade rights to the selected software, select this option. |

9. Click **Next**.
10. On the *License Asset Detail* page, on the *Related* tab, provide the following information:

| Option | Description |
|---|---|
| **Department** | The business group or department that owns the application. |
| **Cost Center** | The cost center associated with the department that owns the application. |
| **Approved for Device** | The devices that are approved to use the license. This information is used in License Compliance reporting. For example, if devices have the application installed, but are not on the list of approved devices, the devices are listed in the report titled, *Unapproved Software Installation*. However, the appliance does not enforce license compliance. For example, the appliance does not prevent applications from being installed on managed devices if a license is expired or otherwise out of compliance. |
| **Barcodes** | Add or edit barcodes associated with this license, as required. For more information, see Add barcodes to assets. |

11. Click **Next**.
12. On the *License Asset Detail* page, on the *Custom* tab, provide additional custom data. You can modify the License Asset Type to include as many additional fields as necessary to meet your business objectives. For more information, see Add or customize Asset Types.
13. Click **Next**.
14. On the *License Asset Detail* page, on the *Notes* tab, provide the following information:

| Option | Description |
|---|---|
| **Notes** | Any additional information you want to provide. |
| **License Text** | Any supplemental information about the license, such as a license number. |

15. Click **Save**.

    **The new License asset appears on the *Licenses* page. The *License Count* number does not change until you update the asset. However, the number in the *Installed* column changes when managed devices that have the software installed check in to the appliance. This enables you to track the number of licenses that have been purchased and installed.**

Perform the following optional tasks:

- Enable metering for Software Catalog inventory. When metering is enabled, the *License Compliance* page shows whether applications have or have not been used in the past 90 days. See About software metering.
- Set license usage warning thresholds. These thresholds are used by the License Compliance Dashboard widget to identify license compliance issues.

# Migrate License assets to applications in the Software Catalog

If you have existing License assets, you can migrate or transfer them from applications on the *Software* page to applications on the *Software Catalog* page. This enables you to take advantage of enhanced features available through the Software Catalog.

To migrate licenses, change the assignment from an application on the *Software* list to an application on the *Software Catalog* list.

License assets can be associated either with applications on the *Software Catalog* list or with applications on the *Software* list. However, they cannot be associated with both types of applications at once.

1. Go to the *Assets* list:

a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
b. On the left navigation bar, click **Asset Management**, then click **Assets**.

2. Click the name of a license associated with a *Software* list application to display the *License Asset Detail* page.

   **A note appears in the top section stating that the license needs to be transferred to apply to a Software Catalog item.**
3. In the top section, click **Transfer Now**.
4. In the *Applies to Cataloged Software* section, select the application you want to associate with the license.
5. Click **Save** at the bottom of the page.

# Associate Managed Installations with Cataloged Software

You can add one or more Managed Installations to Software Catalog items to manage the deployment of these applications to end-user devices.

1. Go to the *Software Catalog* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **Software Catalog**.
2. Click the name of an application to display the *Software Catalog Detail* page.
3. Near the bottom of the page, click one of the following buttons:
   - **Add New Managed Install**, to install the selected Software Catalog using a Managed Installation.
   - **Add New Managed Uninstall**, to uninstall the selected Software Catalog using a Managed Installation.
4. On the *Managed Installation Detail* page that appears, specify the applicable details. For more information, see the following sections:
   - Create Managed Installations for Windows devices
   - Create Managed Installations for Mac OS X devices
   - Create Managed Installations for RPM files

# Using software metering

You can manage software metering information using the KACE appliance.

## About software metering

Software metering enables you to collect information about how applications are installed and used on the Windows and Mac devices that you manage.

Information collection includes Windows Store applications, such as Bing Travel. Metering is not available for applications installed other operating systems, such as Linux. In the Software Catalog, metering can be enabled for applications that are listed as Discovered and Not Discovered and for applications that are Locally Cataloged.

Metering cannot be enabled for operating system software, applications installed on unsupported operating systems, such as Linux, or for applications that are listed as Uncataloged in the Software Catalog.

### *About Classic Metering*

Classic Metering is the metering system that was available on the appliance prior to version 5.5. If you upgraded to version 5.5 from version 5.4 or lower, and you enabled metering prior to the upgrade, you can continue to access Classic Metering in the 5.5 release.

However, the Software Catalog metering system, which provides more detailed information than Classic Metering, replaced Classic Metering in the 6.0 release. Classic Metering is no longer available in version 6.0 and higher.

## About metering information

When you enable metering for applications, information is collected for devices on which the applications are installed provided that metering is also enabled for the devices.

The following information is collected:

- Version information
- Information about suites
- Number of installations
- Usage and launch information

See Viewing Software Catalog metering information.

In addition, you can configure the frequency at which metering information is gathered and the length of time metering information is retained. See Configure options for metering Software Catalog applications.

### *About the scripts that collect metering information*

The software metering service is bundled with the KACE Agent and installed on managed devices. When metering is enabled, scripts run to collect metering info.

These collection scripts vary, depending on the operating system:

- **Windows**: On Windows devices, metering is an event-driven process that monitors Windows assets using WMI (Windows Management Instrumentation) events.
- **Mac**: On Mac devices, the metering script identifies process events asynchronously using NSWorkspace notification center.

Information, including the application filename, version, and file size are compared to the information in the Software Catalog to identify the application.

### *How suites are metered*

If metering is enabled for a suite, such as Microsoft Office, the system checks to determine whether any of the applications in the suite are running on managed devices that have metering enabled. Usage information is reported for the suite as a whole, as well as for each individual application.

Managed devices that have any application in the suite installed, as determined by an *Add/Remove programs* entry, are counted as having the suite installed. Devices do not need to have every application in the suite installed to count as having the suite installed.

When metering is enabled for a suite, it is also enabled for the individual applications that are part of the suite. You cannot enable or disable metering for individual applications in suites.

# Enabling and configuring metering for devices and applications

To obtain metering information for Software Catalog applications, you need to enable metering for applications and for the devices on which those applications are installed.

## *Choosing the devices and applications to meter*

Enabling metering on devices simply makes it possible to collect metering information, and it does not significantly increase server or network activity.

Therefore, Quest recommends that you enable metering for all of the Windows and Mac devices you manage. However, be selective when choosing the applications that you want to meter. Storing the metering information for a large number of applications could significantly increase disk space requirements and impact system performance.

## *Enabling metering on devices*

To enable software metering on a managed devices, you need to apply a metering-enabled label to the devices.

To apply a metering-enabled label to devices, do one of the following:

- Apply the built-in label, *MeteredDevices*, to your devices. This label has the metering option enabled. See Setting up and using labels to manage groups of items.
- Create a manual label for metering and apply it to devices. See Enable metering on devices using manual labels.
- Create a Smart Label for metering (applied to devices automatically). See Disable metering for devices using Smart Labels.

**TIP:** To enable metering on managed devices, you can use manual labels or Smart Labels, but you must use labels. Metering can be enabled at the label level only; metering cannot be enabled in the settings of individual devices.

## *Enable metering on devices using manual labels*

To enable metering on devices, you can enable metering for a manual label, and then apply that label to devices.

1. Go to the *Smart Labels* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, in the **Home** section, click **Label Management**.
    c. On the Label Management panel, click **Labels**.
2. Select **Choose Action** > **New Manual Label** to display the *Label Detail* page.

    **TIP:** Avoid using backslashes (\) in label names. If you need to use a backslash in a label name, add a second backslash (\\) to escape it.

3. Provide the following information:

| Option | Description |
|---|---|
| **Name** | The name of the label. |
| **Description** | Any additional information you want to provide. |

| Option | Description |
|---|---|
| **Alternate Location** | (Optional) The alternate download location for Managed Installations, File Synchronizations, and other deployments that are performed on items assigned to this label. The location you specify replaces the string KACE_ALT_LOCATION.<br>**CAUTION: You should not have a device in two labels that both specify a value in this field.** |
| **Path** | If you specify an alternate download location, specify the path to the location. |
| **Login**<br>**Password** | If you specify an alternate download location, specify the username and password for the location. |
| **Restrict Label Usage To** | The type of label. To create a label that enables metering, select the *Device Inventory* check box. You can select additional label types as needed, but Metering can be enabled only if the *Devices* label type is selected. |
| **Meter Software Usage** | Enable metering on devices that have the label assigned. This enables metering on the devices only. To meter software, you need to also enable metering for individual applications. |
| **Allow Application Control** | Enable Application Control on devices. Software marked as Not Allowed is prevented from running on devices to which the label is applied.<br>See Using Application Control. |
| **Label Group** | (Optional) The label group to which the label is assigned. To assign the label to a label group, click **Edit** next to the *Label Group* field, then select a label group. This is useful if you have a large number of labels and you want to organize them into sub-labels. For example, you could include the labels of your licensed applications in a group label named *Licenses*. In addition, labels inherit any restrictions of the groups to which they belong. |

4. Click **Save**.

   **The *Labels* page appears, and the new label appears on the list. The metering icon appears in the metering column next to the label:** .
5. Manually apply the label to managed devices:
   a. Click **Inventory**.

      **The *Devices* page appears.**
   b. Select the check box next to one or more devices.
   c. Select **Choose Action > Label > Apply Labels**.

      **One of the following metering icons appears next to the device name on the *Devices* list:**

| Icon | Description |
|---|---|
| | Metering is enabled on the device, and the KACE Agent is scheduled to report metering information for Software Catalog applications that also have metering enabled. See Enabling and configuring metering for devices and applications.<br>It might take as long as 24 hours for the appliance to display metering information in the Administrator Console, depending on the metering interval. To change the metering interval, see Enable metering for Software Catalog applications. |

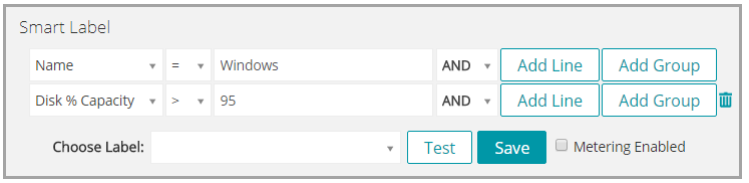
| Icon | Description |
|---|---|
|  | Metering is scheduled to begin. This icon appears when the metering label is applied to a device, but that device has not yet reported metering information to the appliance. If the metering label has been applied to devices running Linux or other operating systems that are not supported, metering icons are not displayed. |

## *Enable metering on devices using Smart Labels*

You can enable metering using Smart Labels provided that the Smart Label is a device label.

Smart Labels are applied to and removed from managed devices when the appliance processes device inventory. So if you create a Smart Label that enables metering on devices, it might take time for the Smart Label to be applied to devices and for devices to report metering information. Metering is enabled for devices that match the Smart Label criteria only after devices are inventoried and the Smart Label is applied.

1. Go to the *Smart Labels* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, in the **Home** section, click **Label Management**.
    c. On the Label Management panel, click **Smart Labels**.
2. Select **Choose Action > New > Device Smart Label** to display the device Smart Label panel.
3. Specify the search criteria using the available fields.
    - **To add a row, click Add line.**
    - **To add a subset of rules, select AND or OR from the operator drop-down list at the right of the Smart Label criteria, then click Add Group.**




4. Click **Test** to display items that match the specified criteria.
5. Adjust the criteria as needed until the results are what you expect.
6. Select the *Metering Enabled* check box below the Smart Label criteria.
7. In the *Choose label* drop-down list, do one of the following:
    - **Select an existing label to associate with the Smart Label. Type in the *Choose label* field to search for existing labels.**

      **NOTE:** If you select a label group instead of a label, you will not be able to apply the Smart Label to a patching schedule. Patching schedules can only use Smart Labels based on a single item.

    - **Enter a new name for the Smart Label in the *Choose label* field, then press Enter or Return.**

      **NOTE:** Press **Enter** or **Return** after you enter a new Smart Label name to move the text from the search field to the label field.

8. Click **Create**.

**When managed devices are inventoried, the Smart Label is applied if the devices match the specified criteria. When the label is applied to a device, one of the following metering icons appears next to the device name on the *Devices* list:**

| Icon | Description |
|---|---|
|  | Metering is enabled on the device, and the KACE Agent is scheduled to report metering information for Software Catalog applications that also have metering enabled. See Enabling and configuring metering for devices and applications.<br>It might take as long as 24 hours for the appliance to display metering information in the Administrator Console, depending on the metering interval. To change the metering interval, see Enable metering for Software Catalog applications. |
|  | Metering is scheduled to begin. This icon appears when the metering label is applied to a device, but metering information is not yet available to the appliance. If the metering label has been applied to devices running Linux or other operating systems that are not supported, metering icons are not displayed. |

## *Enable metering for Software Catalog applications*

You can enable metering for applications that are listed as Discovered or Not Discovered in the Software Catalog, as well as for applications that are Locally Cataloged. When you enable metering for applications, those applications are identified as metered.

However, you also need to enable metering for the devices on which the applications are installed. In other words, you have to enable metering both on the device and on the application to obtain metering information.

When metering is enabled for an application, and for devices on which the application is installed, metering information is displayed on the *Software Catalog Detail* page for the application. Metering information is also displayed on the detail page of managed devices that have the application installed. See Viewing Software Catalog metering information.

**CAUTION: Metering is not available for operating system software, applications installed on unsupported operating systems, such as Linux, or for applications that are listed as Uncataloged in the Software Catalog. However, you can enable metering for Uncataloged applications after you add the applications to the local version of the Software Catalog.**

1. Go to the *Software Catalog* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Software Catalog**.
2. Select the check box next to an application that is Discovered, or Not Discovered.
3. Select **Choose Action > Enable Metering**.

A metering icon appears in the metering column next to the selected applications:  . Provided that metering is enabled for devices with the application installed, metering information is reported according to the metering schedule. See:

- Enabling metering on devices
- Configure options for metering Software Catalog applications

## *Configure options for metering Software Catalog applications*

You can configure metering options, such as the frequency at which metering information is gathered, and the length of time metering information is retained in the appliance database.

If the Organization component is enabled on your appliance, you configure settings for each organization separately.

1. Do one of the following:
   - **If the Organization component is enabled on your appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page next to the login information. Then click Organizations. To display the organization's information, click the organization's name.**

     On the *Organization Detail* page that appears, locate the *Communication and Agent Settings* section.
   - **If the Organization component is not enabled on your appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`. Then select Settings > Provisioning., and click Communication Settings on the *Provisioning* panel.**

     The *Communication Settings* page appears.
2. In the *Agent and Communication Settings* section, specify the following settings:

| Option |
|---|
| **Agent Logging** |
| **Agent Inventory** |
| **Agentless Inventory** |
| **Catalog Inventory** |
| **Metering** |
| **Scripting Update** |

3. Click **Save**.
4. To configure data retention settings for metering, go to the Admin-level *General Settings* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **General Settings**.
5. In the *Data Retention* section, select the options for retaining data on the appliance.

| Option | Description |
|---|---|
| **Retain Metering Data** | The number of months that metering data is retained in the appliance database. Metering data that is older than the selected number of months is deleted from the database on the first day of every month. See About metering information. |

6. At the bottom of the page, click **Save** or **Save and Restart Services**, depending on whether the Organization component is enabled on your appliance.
7. If you have multiple organizations, repeat the preceding steps for each organization.

# Viewing Software Catalog metering information

You can view metering information on the *Software Catalog Detail* page and on the *device detail* page.

**NOTE:** Metering information is available only if metering is enabled for devices and applications. For information, see Enabling and configuring metering for devices and applications.

## View metering information on the Software Catalog Detail page

You can view metering information for Software Catalog applications on the *Software Catalog Detail* page.

The amount of metering information available on the *Software Catalog Detail* page is determined by the metering data retention settings. See About metering information.

1. Go to the *Software Catalog* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Software Catalog**.
2. **Optional**: Click the metering column header to sort the list by applications that are metered:  .
3. Click the name of a metered application to display the *Software Catalog Detail* page.

**Information on this page includes:**

| Column name | Description |
|---|---|
| **Versions or Applications Installed** | |
| File Name | For applications, the name of the executable file. |
| Product Name | For suites, the suite name. |
| Version | The version number associated with the application. |
| Language | The language for which the application is designed. For example, English. Applications that are not designed for a specific language are designated as Language Neutral. |
| Installed | The number of managed devices that have the application installed. Click a number to view device information. |
| **Metering** | |
| Last Day | The number of managed devices that have launched the application in the past 24 hours. |
| 1-7 Days Ago | The number of managed devices that have launched the application in the past 7 days. |
| 8-30 Days Ago | The number of managed devices that have launched the application in the past 8-30 days. |

## View metering information on the Device Detail page

You can view metering information for Software Catalog applications on the *Device Detail* page.

1. Go to the *Devices* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General

Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Inventory**, then click **Dashboard**.

2. Click the name of a managed device that has metering enabled to display the *Device Detail* page.
3. In the *Software* section, click **Metered Software** to expand the panel.

**Information in this section includes:**

| Column name | Description |
|---|---|
| **Application** | The name of the metered application. Click the application name to go to the detail page for the application. |
| **Version** | The version of the application installed. Major versions are listed separately in the Software Catalog, and they are metered separately. For example, version **4.1** and version **4.2** of an application appear as separate entries. This enables you to manage them and meter their usage separately. Minor versions, such as **4.123**, **4.134**, and **4.145** appear under the same entry, such as **4.x**. Each version grouped under the **4.x** entry is listed on the detail page for the application. |
| **Hours Used** | The length of time the application has been running on the device in the past seven days, expressed as a decimal. For example, 0.75 indicates that the application has been running for 45 minutes. |
| **Launches** | The number of times the application has been launched on the device in the past seven days. |
| **Last Launch** | The date and time of the most recent launch in the past seven days. |

**NOTE:** If new applications are installed between the time the inventory is collected from a device and the time the metering report is generated, those applications are not reported until the next time inventory is collected.

# Disabling metering for Software Catalog applications and managed devices

Disabling metering for applications and devices stops the system from saving metering data for those applications and devices. Metering data that has already been saved, however, is retained.

## *Disable metering for Software Catalog applications*

If metering is enabled for Software Catalog applications, you can disable it as needed.

1. Go to the *Software Catalog* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **Software Catalog**.
2. Select the check box next to an application.
3. Select **Choose Action** > **Disable Metering**.

Metering is disabled and the metering icon is removed from the metering column next to the selected applications. Metering data, however, is retained.

## *Disabling metering for devices*

If metering is enabled for devices, you can disable it as needed.

### Disable metering for devices using manual labels

If metering is enabled for devices using manual labels, you can disable it by disabling metering in the label details.

1. Go to the *Labels* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, in the **Home** section, click **Label Management**.
    c. On the Label Management panel, click **Labels**.
2. Select the check box next to a metering label.
3. Select **Choose Action** > **Disable Metering**.

Metering is disabled on all the devices to which the label is applied. Metering data, however, is retained.

### Disable metering for devices using Smart Labels

If metering is enabled for devices using Smart Labels, you can disable it by disabling metering in the Smart Label details.

1. Go to the *Smart Label Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, in the **Home** section, click **Label Management**.
    c. On the Label Management panel, click **Smart Labels**.
    d. Click the name of a Smart Label.
2. Clear the *Enable Metering* check box.

Metering is disabled on all the devices to which the label is applied. Metering data, however, is retained.

# Managing metering and scheduling inventory collection

Metering is available for Software Catalog applications only. Metering is not available for applications that appear on the *Software* page.

For information about enabling metering, see About metering information.

## *Schedule metering and inventory collection intervals*

Metering and inventory collection intervals determine the frequency with which metering and inventory information is collected from managed devices. If the Organization component is enabled on your appliance, you can schedule the metering and inventory collection intervals separately for each organization.

1. Do one of the following:
    - **If the Organization component is enabled on your appliance, log in to the appliance System Administration Console, `https://`appliance_hostname`/system`, or select System in the drop-down list in the top-right corner of the page next to the login information. Then click Organizations. To display the organization's information, click the organization's name.**

On the *Organization Detail* page that appears, locate the *Communication and Agent Settings* section.

- **If the Organization component is not enabled on your appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`. Then select Settings > Provisioning., and click Communication Settings on the *Provisioning* panel.**

  The *Communication Settings* page appears.

2. In the *Agent and Communication Settings* section, specify the following settings:

| Option | Suggested Setting | Notes |
|---|---|---|
| **Agent Logging** | Enabled | Whether the appliance stores scripting results provided by Agents installed on managed devices. Agent logs can consume as much as 1GB of disk space in the database. If disk space is not an issue, enable *Agent Logging* to keep all log information for Agent-managed devices. These logs can be useful during troubleshooting. To save disk space, and enable faster Agent communication, disable *Agent Logging*. |
| **Agent Inventory** | 12 hours | The frequency at which Agents on managed devices report inventory. This information is displayed in the *Inventory* section. |
| **Agentless Inventory** | 1 Day | The frequency at which Agentless devices report inventory. This information is displayed in the *Inventory* section. |
| **Catalog Inventory** | 24 hours | The frequency at which managed devices report inventory to the *Software Catalog* page. |
| **Metering** | 4 hours | The frequency at which managed devices report metering information to the appliance. Requires metering to be enabled on devices and applications. |
| **Scripting Update** | 4 hours | The frequency at which Agents on managed devices request updated copies of scripts that are enabled on managed devices. This interval does not affect how often scripts run. |

3. Click **Save**.

# Using Application Control

Application Control enables you to mark applications as Not Allowed and block them or prevent them from running on Agent-managed Windows and Mac devices. This is useful if you want to restrict specific applications from running in your environment.

Application Control enables you to:

- Prevent specific applications from running on Agent-managed Windows or Mac devices. This feature is not available for Linux or Agentless devices. See Requirements for blocking applications.
- Create reports on applications that are marked as Not Allowed. See Create reports showing applications marked as Not Allowed.
- Search for applications that are marked as Not Allowed using *Advanced Search*. See Searching for information and filtering lists.

Applications marked as Not Allowed are organization-specific. If the Organization component is enabled on your appliance, you mark applications as Not Allowed for each organization separately.

# Requirements for blocking applications

Application Control requirements must be met for applications to be blocked.

To block applications and prevent them from being launched on managed devices, you must:

- **Install the KACE Agent version 6.0 or higher on devices**. Application Control is not available for Agent versions lower than 6.0, and it is not available for Linux or Agentless devices. See Updating the KACE Agent on managed devices.
- **Apply a label that has Application Control enabled, to devices**. This enables the Agent to monitor application launches, including applications that are marked as Not Allowed. See Apply the Application Control label to devices.
- **Mark applications as Not Allowed**. Windows and Mac applications can be marked as Not Allowed only if they are in the Software Catalog as Discovered, Not Discovered, or Locally Cataloged applications. Applications that are Uncataloged cannot be marked as Not Allowed until they are added to the Software Catalog. See Adding applications to the Software Catalog. Linux applications cannot be marked as not allowed.
- **Specify the version of the application to be blocked**. For example, if you want to block all versions of Adobe Acrobat®, you must mark all versions of the application as Not Allowed. For example, Acrobat 8.x, Acrobat 9.x, and so on. However, when you mark a suite as Not Allowed, all of the applications in the suite are also marked as Not Allowed. If an application that runs on both Windows and Mac devices is marked as Not Allowed, that application is blocked on both Windows and Mac devices.

# How applications are blocked

When an application that is marked as Not Allowed is launched on a managed device that has an Application Control-enabled label applied, the Agent terminates the application and displays a message on the device.

The message shows the application name and indicates that the application has been terminated because it is on the Not Allowed list. Applications that are terminated are identified in the local database that records software usage.

# About denying access to application editions that share executable files

Some applications have different editions, such as Pro and Standard, that share the same executable file. If such applications are blocked, they are blocked for all editions that share the executable file.

# Applications that cannot be blocked

Some applications, such as plug-ins to other applications, cannot be blocked.

The following applications can be marked as Not Allowed but they cannot be blocked or prevented from running on managed devices:

- Browser plug-ins or external DLLs
- Microsoft Visual Studio® plug-ins such as Infragistics
- Java® applications

# Apply the Application Control label to devices

To enable Application Control on devices, you need to apply the *ApplicationControlDevices* label, or any label that has Application Control enabled, to devices.

After the label is applied to devices, applications that have been marked as Not Allowed are blocked or prevented from running on the devices.

1. Go to the *Devices* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Dashboard**.
2. Select the check boxes next to one or more devices.
3. Select **Choose Action** > **Apply Labels**.
4. Select the **ApplicationControlDevices** label.

The label appears next to device names on the *Devices* page.

# Mark applications and suites as Not Allowed

You can mark individual applications, and application suites, as Not Allowed to prevent them from running on Agent-managed devices.

When you mark a suite as Not Allowed, the applications in that suite are also marked as Not Allowed. If you want to mark only some of the applications in a suite as Not Allowed, remove the Not Allowed designation from the suite, then mark the individual applications as Not Allowed.

1. Go to the *Software Catalog* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Software Catalog**.
2. Select the check box next to one or more applications.
3. Select **Choose Action** > **Mark Not Allowed**.

The applications are marked as Not Allowed, and the Not Allowed icon appears next to the application names:  .

# View applications and suites that are marked as Not Allowed

You can view applications and suites that are marked as Not Allowed on the *Software Catalog* page.

1. Go to the *Software Catalog* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Inventory**, then click **Software Catalog**.

2. Do one of the following:
   - **Click the Discovered or Not Discovered tab above the list on the left, then click the Not Allowed button on the *Software Catalog* page to sort the results by applications that are marked as Not Allowed:**  .
   - **Click the Advanced Search tab above the list on the right, then specify the criteria required for to view applications marked as Not Allowed:**

     ```
     Software Catalog: Not Allowed | is | True
     ```
3. Click **Search**.

# Create reports showing applications marked as Not Allowed

You can create reports that show the applications that are marked as Not Allowed, and the devices on which those applications are installed.

1. Go to the *Reports* list by doing one of the following:
   - **If your appliance has the Organization component enabled, and you want to access a System-level report:**

     Log in to the appliance System Administration Console, `https://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page. Then click **Reporting**. System-level reports include consolidated reports that aggregate information from all organizations, as well as standard reports for various appliance components.
   - **If your appliance does not have the Organization component enabled, or if you want to access an organization-level report, log in to the appliance Administrator Console, `https://`appliance_hostname`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information. Then click Reporting.**

     Organization-level reports include standard reports for various appliance components. If the Organization component is enabled on your appliance, these reports provide information specific to the selected organization.

   **The *Reports* list appears.**
2. Select **Choose Action > New (Wizard)** to display the *Report Title* page.
3. Specify the following settings:

| Option | Description |
|---|---|
| **Title** | Not Allowed Software. |
| **Category** | Software. |
| **Description** | Software marked as Not Allowed. |
| **Show Line Numbers** | (Optional) Select the check box to add a column with line numbers to the report. |
| **Topic** | Software Catalog - Discovered Software. |

| Option | Description |
|---|---|
| **Subtopic** | Device |

4. Click **Next** to display the *Fields to Display* page.
5. Select report fields, such as:
   - **Name: The name of the application.**
   - **Installed On: The number of devices on which the application is installed.**
   - **Category: The category of the application.**
   - **Device: Information about the devices on which the application is installed.**
6. Click **Next** to display the *Column Order* page.
7. Drag the columns to set the order in which you want columns to appear in the report, then click **Next** to display the *Sort and Breaks* page.
8. Select Sort and Break options, then click **Next** to display the *Filters* page.
9. Click **Specify rules to filter the records**, then specify the criteria required to find applications marked as Not Allowed:

   ```
   Discovered Software Info: Not Allowed | = | 1
   ```

10. Click **Save** in the row, then click **Save** at the bottom of the page.

    **The *Reports* list appears with the new report listed. the *View By* list, which appears above the table on the right, is automatically set to the category of the new report.**
11. To run the report, click a format in the *Generate Report* column.

The report is generated. In HTML reports, the first data column is automatically linked to the detail page for the item in the Administrator Console. For more information about reports, see Creating reports.

## Remove the Not Allowed designation from applications

If you have marked applications as Not Allowed, you can remove that designation as needed.

The Not Allowed designation is organization-specific. If the Organization component is enabled on your appliance, you apply and remove the Not Allowed designation from applications in each organization separately.

**TIP:** By default, applications are allowed unless you mark them as Not Allowed.

1. Go to the *Software Catalog* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **Software Catalog**.
2. Select the check box next to one or more applications.
3. Select **Choose Action** > **Mark Allowed**.

   **The applications are marked as Allowed and the Not Allowed symbol is removed.**

# Update or reinstall the Software Catalog

The Software Catalog is continually updated as new applications become available and as cataloging requests are received. These updates are automatically downloaded and installed to KACE SMAs periodically. You can manually check for updates to the Software Catalog, or reinstall the catalog.

If you have an offline appliance that does not connect to the Internet, you can obtain Software Catalog updates by contacting Quest Support at https://support.quest.com/contact-support.

**NOTE:** When catalog updates are downloaded, the appliance determines whether any Locally Cataloged applications have been added to the public Software Catalog. If applications have been added, Local Cataloging is removed. Otherwise, Local Cataloging is preserved.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Appliance Updates** to display the *Appliance Updates* page.
3. Do one of the following:
   - **In the *Software Catalog* section, click Check for Update.**

     If the Software Catalog is up to date, the *Logs* page appears showing the version information. If an update is available, installation information is displayed. The full catalog might be installed if any of the following are true: If there is no baseline catalog present on the appliance, if there is no pathway to updating the full catalog, or if there are more than five updates available
   - **In the *Software Catalog* section, click Reinstall.**

     The version of the Software Catalog that is stored on the appliance is replaced with the latest Software Catalog available from Quest KACE. The full Software Catalog includes the latest full version of the catalog as well as any updates, or differentials, that have been added since the latest full version was released.
   - **If your appliance is offline and does not have Internet access, contact Quest Support at https://support.quest.com/contact-support.**

# Managing process, startup program, and service inventory

You can manage processes, startup programs, and services in appliance inventory.

## Managing process inventory

When processes are detected on managed devices, they are reported and available to be managed in the *Inventory* section.

To manage process inventory, you can:

- View process usage information for the last 1, 2, 3, 6, or 12 months
- Apply labels to, and remove labels from, processes
- Assign categories and threat levels to processes
- Delete processes

Process inventory cannot be metered, and you cannot block processes. However, you can block applications. See Mark applications and suites as Not Allowed.

# View and edit process details

You can view and edit the details of processes in inventory.

1. Go to the *Process Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Processes**.
    c. Click the name of a process.
2. Provide the following information:

| Option | Description |
|---|---|
| **Assign To Label** | (Optional) the label associated with the item. |
| **Notes** | Any additional information you want to provide. |
| **Category** | The category of the item, such as Business, Driver, or Security. |
| **Threat Level** | The threat level of the item.<br>Threat levels include:<br>a. Safe<br>b. Fairly Safe<br>c. Unknown<br>d. Could be harmful<br>e. Harmful |

3. Click **Save**.

# Add labels for processes

Add manual labels to manage processes in inventory as a group.

1. Go to the *Processes* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Processes**.
2. Select **Choose Action** > **Add Label**.
3. In the *Add Label* window, enter a name for the label.

    **TIP:** Avoid using backslashes (\) in label names. If you need to use a backslash in a label name, add a second backslash (\\) to escape it.

4. Click **Save**.

# Apply labels to or remove labels from processes

Labels can be applied to or removed from processes in inventory as needed.

1. Go to the *Processes* list:

a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
b. On the left navigation bar, click **Inventory**, then click **Processes**.

2. Select the check box next to one or more processes.
3. Do one of the following:
   - **Select Choose Action > Apply Label, then select the label to apply.**
   - **Select Choose Action > Remove Label, then select the label to remove.**

# Categorize processes

To organize and manage processes in inventory, you can manually assign them to categories.

1. Go to the *Processes* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **Processes**.
2. Select the check box next to one or more processes.
3. Select **Choose Action** > **Set Category**, and then select a category.

# Assign threat levels to processes

To manage processes that might pose threats to devices and systems, you can manually assign threat levels to those processes.

Threat levels can be used to indicate the relative safety of items and the number of devices on which those items are located. This information is for tracking purposes only. The appliance does not enforce policies based on threat levels.

1. Go to the *Processes* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **Processes**.
2. Select the check box next to one or more processes.
3. Select **Choose Action** > **Set Level**, and then select a threat level.

# Delete processes

You can manually delete processes from inventory as needed.

However, if the deleted processes are found on managed devices, the records for those processes are recreated, with new IDs, when the devices update inventory information.

1. Go to the *Processes* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Inventory**, then click **Processes**.

2. Do one of the following:
   - **Select the check box next to one or more processes, then select Choose Action > Delete.**
   - **Click a process name, then on the *Process Detail* page, click Delete.**
3. Click **Yes** to confirm.

# Managing startup program inventory

When startup programs are detected on managed devices, they are reported and available to be managed in the *Inventory* section.

The startup inventory page enables you to view and edit information about startup programs that have been detected on managed devices.

Startup inventory details include the name of the device running the startup programs, the system description, and the last user.

Startup programs cannot be metered.

## View and edit startup program details

You can view and edit the details of startup programs in inventory.

1. Go to the *Startup Program Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **Startup Programs**.
   c. Click the name of a startup program.

   **Devices that are running the program are listed at the bottom of the page.**
2. Provide the following information:

| Option | Description |
|---|---|
| **Assign To Label** | (Optional) the label associated with the item. |
| **Notes** | Any additional information you want to provide. |
| **Category** | The category of the item, such as Business, Driver, or Security. |
| **Threat Level** | The threat level of the item.<br>Threat levels include:<br>a. Safe<br>b. Fairly Safe<br>c. Unknown<br>d. Could be harmful<br>e. Harmful |

3. Click **Save**.

# Add labels for startup programs

Add manual labels to manage startup programs in inventory as a group.

1. Go to the *Startup Programs* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Startup Programs**.
2. Select **Choose Action** > **Add Label**.
3. In the *Add Label* window, enter a name for the label.

    **TIP:** Avoid using backslashes (\) in label names. If you need to use a backslash in a label name, add a second backslash (\\) to escape it.

4. Click **Save**.

# Apply labels to or remove labels from startup programs

Labels can be applied to or removed from startup programs in inventory as needed.

1. Go to the *Startup Programs* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Startup Programs**.
2. Select the check box next to one or more programs.
3. Do one of the following:
    - **Select Choose Action > Apply Label, then select the label to apply.**
    - **Select Choose Action > Remove Label, then select the label to remove.**

# Categorize startup programs

To organize and manage startup programs in inventory, you can manually assign them to categories.

1. Go to the *Startup Programs* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Startup Programs**.
2. Select the check box next to one or more programs.
3. Select **Choose Action** > **Set Category**, then select a category.

# Assign threat levels to startup programs

To manage startup programs that might pose threats to devices and systems, you can manually assign threat levels to those programs.

Threat levels can be used to indicate the relative safety of items and the number of devices on which those items are located. This information is for tracking purposes only. The appliance does not enforce policies based on threat levels.

1. Go to the *Startup Programs* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Startup Programs**.
2. Select the check box next to one or more programs.
3. Select **Choose Action** > **Set Threat Level**, then select a threat level.

## Delete startup programs

You can manually delete startup programs from inventory as needed.

However, if the deleted startup programs are found on managed devices, the records for those programs are recreated, with new IDs, when the devices update inventory information.

1. Go to the *Startup Programs* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Startup Programs**.
2. Do one of the following:
    - **Select the check box next to one or more programs, then select Choose Action > Delete.**
    - **Click a program name, then on the** *Startup Program Detail* **page, click Delete.**
3. Click **Yes** to confirm.

# Managing service inventory

When services are detected on managed devices, they are reported and available to be managed in the *Inventory* section.

The service inventory page enables you to track the services running on managed devices.

Service detail pages provide information on services, including the name of the device running the services, system description, and the last user.

Service inventory cannot be metered.

## View and edit service details

You can view and edit the details of services in inventory.

1. Go to the *Service Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Services**.
    c. Click the name of a service.

**Devices that are running the service are listed at the bottom of the page.**

2. Provide the following information:

| Option | Description |
|---|---|
| **Assign To Label** | (Optional) the label associated with the item. |
| **Notes** | Any additional information you want to provide. |
| **Category** | The category of the item, such as Business, Driver, or Security. |
| **Threat Level** | The threat level of the item.<br>Threat levels include:<br>a. Safe<br>b. Fairly Safe<br>c. Unknown<br>d. Could be harmful<br>e. Harmful |

3. Click **Save**.

# Add labels for services

Add manual labels to manage services in inventory as a group.

1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
2. Select **Inventory** > **Services** to display the *Services* page.
3. Select **Choose Action** > **Add Label**.
4. In the *Add Label* window, enter a name for the label.

   **TIP:** Avoid using backslashes (\) in label names. If you need to use a backslash in a label name, add a second backslash (\\) to escape it.

5. Click **Save**.

# Apply labels to and remove labels from services

Labels can be applied to or removed from services in inventory as needed.

1. Go to the *Services* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **Services**.
2. Select the check box next to one or more services.
3. Do one of the following:
   - **Select Choose Action > Apply Label, then select the labels to apply.**
   - **Select Choose Action > Remove Label, then select the labels to remove.**

# Categorize services

To organize and manage services in inventory, you can manually assign them to categories.

1. Go to the *Services* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Services**.
2. Select the check box next to one or more services.
3. Select **Choose Action** > **Set Category**, and then select a category.

# Assign threat levels to services

To manage services that might pose threats to devices and systems, you can manually assign threat levels to those services.

Threat levels can be used to indicate the relative safety of items and the number of devices on which those items are located. This information is for tracking purposes only. The appliance does not enforce policies based on threat levels.

1. Go to the *Services* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Services**.
2. Select the check box next to one or more services.
3. Select **Choose Action** > **Set Threat Level**, and then select a threat level.

# Delete services

You can manually delete services from inventory as needed.

However, if the deleted services are found on managed devices, the records for those services are recreated, with new IDs, when the devices update inventory information.

1. Go to the *Services* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Services**.
2. Select the check box next to one or more services.
3. Do one of the following:
    - **Select the check box next to one or more programs, then select Choose Action > Delete.**
    - **Click a program name, then on the** *Startup Program Detail* **page, click Delete.**
4. Select **Yes** to confirm.

# Writing custom inventory rules

You can write Custom Inventory rules to collect detailed information about items in inventory.

For information on using the Inventory component, see Managing applications on the Software page.

# About Custom Inventory rules

Custom Inventory rules enable you to capture customized information during the inventory collection process.

Custom Inventory rules are useful for:

- Managing software that is not listed in the Windows *Add/Remove Programs* section.
- Managing versions of software with the same entry in the Windows *Add/Remove Programs* section, especially with incorrect or incomplete *Display Version* information.
- Capturing customized details for use in reports.
- Writing deployment rules, scripts, and reports based on the presence of an application or a value that is not reported by the KACE Agent.

# Types of Custom Inventory rules

Custom Inventory rules test, or obtain the values of, registry keys and entries, program, files, scripts, environment variables, system properties, and the output of commands.

There are two types of Custom Inventory rules:

- **Conditional rules**: These rules test whether conditions exist on devices. When a rule returns true, the KACE Agent reports the item as an Installed Program. When the rule returns false, the item does not appear as an Installed Program.
- **Value Return rules**: These rules obtain data from devices. If the value exists, the KACE Agent reports the item as an Installed Program and sets a corresponding *Custom Inventory Field*.

# Create Custom Inventory rules

You can create custom applications, and Custom Inventory rules for those applications, so that information about the applications is gathered from managed devices.

1. Go to the *Software Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Software**.
    c. Select **Choose Action** > **New**.
2. Provide general information: *Name*, *Version*, *Publisher*.

    **For proper downstream reporting, enter this information consistently across software inventory.**
3. Provide the following information:

| Option | Description |
|---|---|
| **Assign To Label** | (Optional) The label associated with the item. |
| **Notes** | Any additional information you want to provide. |
| **Supported Operating Systems** | The operating systems on which the application runs. Applications are deployed only to devices with the selected operating systems. |
| **Custom Inventory Rule** | (Optional) The custom inventory rules to apply to the application. Custom inventory rules enable you to detect applications and other items on a device and capture details for reporting.<br>For example, the appliance first verifies whether an application is present on a device before deploying that application. In some instances, however, installed programs do not register in *Add/Remove Programs* or in standard areas of the registry. In such cases, the appliance might not be able to detect the presence of the application without additional information from the administrator. Therefore, the appliance might repeat the installation each time the device connects. Custom Inventory rules can prevent this repetition.<br>The following rule verifies that the version of the Network Associates VirusScan installed on a device is newer than a given version before deploying it:<br>`RegistryValueGreaterThan(HKEY_LOCAL_MACHINE\ Software\Network Associates\TVD\`<br><br>`Network Associates\TVD\Shared Components\ VirusScanEngine\4.0.xx,szDatVersion,4.0.44)` |

4. Next to *Upload and Associate File*, click **Choose File** to locate a file, then click **Open** or **Choose**.

   **To distribute applications using Managed Installations or File Synchronizations, you need to associate the actual application files with the application.**

5. To prevent the file from being copied to Replication Shares, select **Don't Replicate Associated File**. This setting is useful for large files that you do not want users to install from Replication Shares, such as software suites.
6. **Optional**: Select a *Category* and *Threat Level* for the software.
7. Click **Save**.

**Related topics**

About labels

Getting values from a device (Custom Inventory Field)

Using software threat levels and categories

# How Custom Inventory rules are implemented

The KACE Agent receives new Custom Inventory rules during the first device inventory after the rules are created. During that first inventory, the Agent runs the new rules and reports the findings to the appliance.

The Agent runs all rules as well as any other processes scheduled for that session. Therefore, after a device is inventoried, it could take several minutes to run all the rules and other processes before the Agent reports the results.

After the Agent reports the results, the device's detail page shows the results under *Software* in *Installed Programs* and *Custom Inventory Fields*.

**NOTE:** The applications with Value Return rules that set a *Custom Inventory Field* also appear as Installed Programs.

If results are not what you expect, verify that the device has been inventoried recently. The inventory time is shown in the *Last Inventory* field of the device detail page.

# Syntax for Custom Inventory rules

Use the correct syntax for function names and arguments in Custom Inventory rules.

Conditional and Value Return rules use the following syntax:

```
functionName(argument,argument,...)
```

For specific information on functions and their arguments see:

- Checking for conditions (conditional rules)
- Getting values from a device (Custom Inventory Field)
- Matching filenames to regular expressions

### Function syntax

Enter the **functionName** followed by an opening parenthesis, enclose the arguments with a closing parenthesis. No spaces are allowed between the name of the function and the opening parenthesis.

### Argument syntax

Enter **argument** syntax for all rules except `command` and `regex` (regular expression) as follows:

- Separate arguments by commas.
- Commas are not allowed anywhere else in the string, except as described in Commas and parentheses as values in a rule.
- Do not include single or double quotation marks.
- White space is trimmed from the front and back of each argument.

For example, the following syntaxes are the same:

```
RegistryValueEquals(HKEY_LOCAL_MACHINE\SOFTWARE\Mozilla\Mozilla Firefox, CurrentVersion, 78.0.2)
RegistryValueEquals(HKEY_LOCAL_MACHINE\SOFTWARE\Mozilla\Mozilla Firefox,CurrentVersion,78.0.2)
```

### Commas and parentheses as values in a rule

If comma, open parenthesis, or close parenthesis are to be used as values in a rule, they must be escaped as {{comma}}. {{op}}, and {{cp}}, respectively.

- In arguments where commas are needed as part of the parameter value, the comma needs to be escaped as {{comma}}, except for the last argument in the function.

  For example, if the user want to test against the registry value in which the value name is "**test,value**", the user would need to escape the comma in this case because registry value name is not the last argument in the Custom Inventory (CI) function.

  `RegistryValueEquals(HKEY_LOCAL_MACHINE\SOFTWARE\TestSoft, test{{comma}}value, HelloWorld)`

  If the user wants to test against the registry value where the value itself contains a comma, then there is no need to escape, because value is the last argument in the Custom Inventory function. The following Custom Inventory tests registy value HKLM\SOFTWARE\TestSoft\test1 and looks to see if the value is equal to **2,4**.

  `RegistryValueEquals(HKEY_LOCAL_MACHINE\SOFTWARE\TestSoft,test1,2,4)`

  If the Custom Inventory function contains only one parameter, it takes everything between the parentheses as the value for the argument. Commas in this case do not need to be escaped and will be part of the argument to the Custom Inventory function.

`ShellCommandTextReturn(`**wmic MEMORYCHIP get BankLabel,Capacity,description,manufacturer**`)`

- An unmatched literal open parenthesis needs to be escaped as **{{op}}**. When the parser is tokenizing the arguments for the function, it counts the number of open and close parentheses to determine the end of the function and argument. Therefore, an unmatched literal open parenthesis would throw off the count, and cause the argument value to be parsed incorrectly. If a literal open parenthesis is needed as part of the argument value, it should be represented with **{{op}}**.

  For example, if the user wants to echo the string "**Hello ( World**", then the CI should look like the following:
  `ShellCommandTextReturn(echo` **Hello {{op}} World**`)`

- Unmatched literal close parentheses needs to be escaped as **{{cp}}**.

  While the parser is tokenizing the arguments for the function, it counts the number of open and close parentheses in order to determine the end of the function when it encounter the last matched close parentheses. However, if the argument value itself contains a close parenthesis that is not matched, the parenthesis tricks the parser to believe that is the end of the function and the argument value will be truncated prematurely.
  If a literal close parentheses is needed as part of the argument value, it must be represented with **{{cp}}**.
  For example, if the user wants to echo the string "**Hello ) World**", then the CI should look like the following:
  `ShellCommandTextReturn(echo` **Hello {{cp}} World**`)`

# Checking for conditions (conditional rules)

You can write Custom Inventory rules that identify whether (true/false) an application is installed.

When using a conditional rule, if the rule returns true, the Display name (Title) of the custom application appears in the *Software: Installed Programs* section of the *Device Detail* page in the *Inventory* section.

The following sections describe the rules that test for conditions:

- Conditional rule reference
- Verifying whether a condition exists (Exists rules)
- Evaluating device settings (Equals rules)
- Comparing device values (Greater Than and Less Than rules)
- Testing for multiple conditions

When the rule returns false, the application does not appear in the *Installed Programs* section in the device's inventory details.

**TIP:** You can view a list of devices that have the item installed on the *Inventory* > *Software* > *Custom_item: Detail* page.

### Conditional rule reference

The following table describes which data types can be used for comparison.

**Table 24. Data types supported for comparison functions**

| Conditional rule | Data types supported for comparison functions<br>`Equals`, `GreaterThan`, `LessThan` |
|---|---|
| `EnvironmentVariable` | DATE, NUMBER, TEXT |
| `FileInfo` | DATE, NUMBER, TEXT |
| `FilenamesMatchingRegex` | NUMBER |

| Conditional rule | Data types supported for comparison functions<br>`Equals`, `GreaterThan`, `LessThan` |
|---|---|
| `FileVersion` | TEXT |
| `PlistValue` | NUMBER, TEXT |
| `ProductVersion` | TEXT |
| `RegistryValue` | TEXT |

The following table describes how comparisons are made.

**Table 25. How comparisons are made**

| Data type | Considerations |
|---|---|
| **DATE** | • Before evaluation, target values are parsed as a date using the same rules as in the PHP DateTime class and then normalized to use the following format:<br>`MM/DD/YYYY HH:MM:SS`<br>• The timestamp listed in the appliance database uses the 24-hour clock (0 – 24 hours).<br>• The timestamp listed in the appliance database reflects UTC (Coordinated Universal Time) time, so that it is normalized for all devices, regardless of their respective timezones.<br>• If the target value contains only a date, a timestamp will be added that is based upon midnight for UTC. |
| **NUMBER** | • Only whole numbers are evaluated.<br>• If a target value contains any other characters (letters, punctuation marks and so on), only the numbers up to the first non-number are evaluated.<br>For example, if the target value is 52a1, only 52 is evaluated.<br>• Only numbers up to the 32-bit integer maximum positive value (2,147,483,647) are supported. |
| **TEXT** | • Values are evaluated verbatim, without any potential formatting changes (as can occur with DATE and NUMBER data types).<br>• Text strings are evaluated in lexicographical order.<br>• Commas can be present in the strings being evaluated — no escaping is required. |

The following table lists available conditional rules with links to specific details on how to specify the arguments.

**Table 26. Conditional rule reference**

| Syntax | Win | RHEL | OS X | Description |
|---|---|---|---|---|
| `DirectoryExists (path)` | X | X | X | Checks for a directory at the specified path on the device. |

| Syntax | Win | RHEL | OS X | Description |
|---|---|---|---|---|
| `FileExists (path)` | X | X | X | Checks for a file at the specified path on the device. Include the name of the file and extension in the path. |
| `FileVersionEquals (path, version)` | X | | | Verifies that the **Version** > **File Version** property of the file specified in the path matches the TEXT value you entered. |
| `FileVersionLessThan (path, version)` | X | | | Verifies that the **Version** > **File Version** property of the file you specified as the path is lower than the TEXT value you entered. |
| `FileVersionGreaterThan (path, version)` | X | | | Verifies that the **Version** > **File Version** property of the file you specified is higher than the TEXT value you entered. |
| `ProductVersionEquals (path, version)` | X | | | Verifies that the **Version** > **Product Version** property of the executable or installation file you specified matches the TEXT value you entered. |
| `ProductVersionLessThan (path, version)` | X | | | Verifies that the **Version** > **Product Version** property of the executable or installation file you specified is lower than the TEXT value you entered. |
| `ProductVersionGreaterThan (path, version)` | X | | | Verifies that the **Version** > **Product Version** property of the executable or installation file you specified is higher than the TEXT value you entered. |
| `FileInfoGreaterThan (fullpath, attribute, type, value)` | X | X | X | Verifies that the **File Info** property of the executable or installation file you specified is higher than the value you entered. |
| `FileInfoLessThan (fullpath, attribute, type, value)` | X | X | X | Verifies that the **File Info** property of the executable or installation file you specified is lower than the value you entered. |
| `FileInfoEquals (fullpath, attribute, type, value)` | X | X | X | Verifies that the attribute of the executable or installation file you specified matches the value you entered. |

| Syntax | Win | RHEL | OS X | Description |
|---|---|---|---|---|
| `RegistryKeyExists (registryPath)` | X | | | Verifies that a registry key exists. |
| `RegistryValueEquals (registryPath, valueName, value)` | X | | | Verifies that a registry entry exactly matches the value you specify. Value is compared as TEXT. |
| `RegistryValueLessThan (registryPath, valueName, value)` | X | | | Verifies that the registry entry is lower than the value you specify. Value is a TEXT. |
| `RegistryValueGreaterThan (registryPath, valueName, value)` | X | | | Verifies that the registry entry is higher than the value you specify. Value is a TEXT. |
| `EnvironmentalVariableExists (var)` | X | X | X | Verifies that an environment variable with the name you specify exists. |
| `EnvironmentalVariableGreaterThan (var, type, value)` | X | X | X | Verifies that the environment variable definition is higher than the value you specify.<br>All three types are valid, TEXT, DATE (in the full format `mm/dd/yyyy hh:mm:ss`), and NUMBER. |
| `EnvironmentalVariableLessThan (var, type, value)` | X | X | X | Verifies that the environment variable definition is lower than the value you specify.<br>All three types are valid, TEXT, DATE (in the full format `mm/dd/yyyy hh:mm:ss`), and NUMBER. |
| `EnvironmentalVariableEquals (var, type, value)` | X | X | X | Verifies that the environment variable definition exactly matches the value you specify.<br>All three types are valid, TEXT, DATE (in the full format `mm/dd/yyyy hh:mm:ss`), and NUMBER. |
| `PlistValueExists (fullpath, entry)` | | | X | Verifies that a named value exists in a PLIST file. |
| `PlistValueGreaterThan (fullpath, entry, type, value)` | | | X | Verifies that the named value is a NUMBER or TEXT higher than the value you specified. |
| `PlistValueLessThan (fullpath, entry, type, value)` | | | X | Verifies that the named value is a NUMBER or TEXT lower than the value you specified. |

| Syntax | Win | RHEL | OS X | Description |
|---|---|---|---|---|
| `PlistValueEquals (fullpath, entry, type, value)` | | | X | Verifies that the named value is a NUMBER or TEXT that exactly matches the value you specified. |

For information on `Equals`, `GreaterThan`, and `LessThan` for `FilenamesMatchingRegex`, see Regular Expression Rule Reference.

### Verifying whether a condition exists (Exists rules)

Rules whose name ends with **Exists** check for the presence of a file, directory, registry key, or other item. If the KACE Agent locates the item on the device, the rule returns true, and the item appears in the device's Inventory Details as an Installed Program.

Use any of the following Exists rules:

- `DirectoryExists (path)`
- `FileExists (path)`
- `RegistryKeyExists (registryPath)`
- `EnvironmentalVariableExists (var)`
- `PlistValueExists (fullpath, entry)`
- `FilenameMatchingRegexExist (fullpath, regex)`

**Example: Check for a directory (folder)**

The following example tests whether the Windows directory exists on the device:

```
DirectoryExists(C:\WINDOWS\)
```

**Example: Check for a file**

**NOTE:** The following example verifies that the pad executable file exists on the device:

```
FileExists(C:\WINDOWS\notepad.exe)
```

### Evaluating device settings (Equals rules)

Rules whose name ends with **Equals** compare the value set on the device to the value you specify in the rule. The rules return true if the values exactly match.

Rules that use arguments with set data types can only compare values of the same type.

Use any of the following Equals rules:

- `FileVersionEquals (path, version)`
- `ProductVersionEquals (path, version)`
- `FileInfoEquals (fullpath, attribute, type, value)`
- `RegistryValueEquals (registryPath, valueName, value)`
- `EnvironmentalVariableEquals (var, type, value)`
- `PlistValueEquals (fullpath, entry, type, value)`
- `FilenameMatchingRegexEqual (fullpath, regex, value)`

**Example: Testing JAVA_HOME setting**

To verify that the JAVA_HOME setting is C:\Program Files\Java\jdk1.6.0_02:

```
EnvironmentVariableEquals(JAVA_HOME, TEXT, C:\Program Files\Java\jdk1.6.0_02)
```

**Example: Testing McAfee® Registry Entry setting**

To check the setting use the same format as the date in the entry:

```
RegistryValueEquals(HKEY_LOCAL_MACHINE\Software\McAfee\AVEngine, AVDatDate, 2014/03/01)
```

**Example: Detecting Windows 7 Service Pack 1**

Windows 7 Service Pack 1 appears in *Add/Remove programs* for devices that were originally on Windows 7 then upgraded to SP1 only. The default application inventory for this item does not reflect devices that are already on SP1 because they were originally imaged at the SP1 level.

When using the appliance to deploy Windows 7 Service Pack 1, create the following Custom Inventory rule for a custom application:

```
RegistryValueEquals(HKEY_LOCAL_MACHINE\Software\Microsoft\WindowsNT\
CurrentVersion,CSDVersion,Service Pack 2)
```

You can then exclude devices with this item installed to prevent the appliance from trying to deploy the SP2 to devices that are already at that level (that is, Windows 7 devices that have been upgraded, as well as devices originally imaged with SP1).

### Comparing device values (Greater Than and Less Than rules)

Functions whose names end with **GreaterThan** and **LessThan** compare values as listed in Table 24.

Use any of the following Greater Than and Less Than rules:

- `FileVersionGreaterThan (path, version)` and `FileVersionLessThan (path, version)`
- `ProductVersionGreaterThan (path, version)` and `ProductVersionLessThan (path, version)`
- `FileInfoGreaterThan (fullpath, attribute, type, value)` and `FileInfoLessThan (fullpath, attribute, type, value)`
- `RegistryValueGreaterThan (registryPath, valueName, value)` and `RegistryValueLessThan (registryPath, valueName, value)`
- `EnvironmentalVariableGreaterThan (var, type, value)` and `EnvironmentalVariableLessThan (var, type, value)`
- `PlistValueGreaterThan (fullpath, entry, type, value)` and `PlistValueLessThan (fullpath, entry, type, value)`
- `FilenameMatchingRegexGreaterThan (fullpath, regex, value)` and `FilenameMatchingRegexLessThan (fullpath, regex, value)`

**Example: Testing whether the product version is higher**

To verify that the product version is higher than a given number:

```
ProductVersionGreaterThan(C:\Program Files\Mozilla Firefox\firefox.exe, 78)
```

To verify that the production version is a given number or higher, enter the following:

```
ProductVersionEquals(C:\Program Files\Mozilla Firefox\firefox.exe, 78)
OR ProductVersionGreaterThan(C:\Program Files\Mozilla Firefox\firefox.exe,
 78)
```

**Example: Testing for a product version range**

To test whether the product version is within a range, combine less than and greater than rules:

```
ProductVersionGreaterThan(C:\Program Files\Mozilla Firefox\firefox.exe, 77)
 AND ProductVersionLessThan(C:\Program Files\Mozilla Firefox\firefox.exe, 79)
```

**IMPORTANT: Do not enter rules on separate lines. Separate the rules by space only. Having rules on separate lines invalidates the compound rule.**

### Testing for multiple conditions

You can join rules using AND operators or OR operators to test for multiple conditions.

**NOTE:** Using both AND and OR operators in the same Custom Inventory rule is not supported. Set up separate applications.

Joining conditional rules produces the following results:

- AND operator: All the rules must return true in order for the results to return true and report the application as an Installed Program.
- OR operator: Only one rule must return true for the application to be reported as an Installed Program.

**IMPORTANT: Do not enter rules on separate lines. Separate the rules by space only. Having rules on separate lines invalidates the compound rule.**

### Checking for multiple true conditions (AND)

Use the AND operator to join conditional rules in the Custom Inventory Field when you want the item to be reported as an Installed Program only if all the rules are true.

In the *Custom Inventory Field*, join rules using the following syntax:

```
Function
(arguments...
) AND Function
(arguments
) AND ...
```

Separate the conditional statements from the operator with spaces.

**Example: Checking for a registry key and comparing values**

To check for a registry key and a registry entry value on a Windows device use AND to combine the rules as follows:

```
RegistryKeyExists(registryPath
) AND RegistryValueEquals(registryPath, valueName, value)
```

### Checking for one true condition (OR)

When you join rules using the `OR` operator, if any of the rules in the *Custom Inventory Field* are true, the application appears in the *Installed Program* list of the device.

In the *Custom Inventory Field*, join the rules using the following syntax:

```
Function
(arguments
) OR Function
(arguments
) OR ...
```

Separate the function statements and operator using a space.

**Example: Checking for either registry value**

To check that a registry entry is one value or another:

```
RegistryValueEquals(registryPath, valueName, value) OR
RegistryValueEquals(registryPath, valueName, value)
```

**TIP:** To specify a range use `RegistryValueGreaterThan` and `RegistryValueLessThan` rules joined by the `AND` operator.

# Getting values from a device (Custom Inventory Field)

The rules that end with **ValueReturn** enable you to gather information from the device. You can use these rules to collect information that the KACE Agent normally does not collect.

The returned values are set with the custom application display name (Title). This appears on the *Device Detail* page under *Software* in *Installed Programs* and *Custom Inventory Fields*.

Use the *Custom Inventory Field* values to manage installations and to distribute software as well as reports, *View By* filtering, Smart Label search criteria, or any other process that can be performed with an automatically detected setting.

This section covers the following topics:

- Value Return rule reference
- Getting registry key values
- Getting command output
- Getting PLIST values
- Getting multiple values

### Value Return rule reference

The following table shows all available value return rules that you can use to set a *Custom Inventory Field* :

| Syntax | Win | RHEL | OS X | Description |
|---|---|---|---|---|
| `RegistryValueReturn (registryPath, valueName, type)` | X | | | Returns the value of a registry entry, and sets the datatype to the one you specified. |
| `EnvironmentalVariableReturn (var, type)` Specifying environment or user variables | X | X | X | Returns the value of an environment variable, and sets the datatype to the one you specified. |
| `FileInfoReturn (path, attribute, type)` | X | X | X | Returns the value of a file attribute, see valid types in Defining rule arguments. |
| `ShellCommandTextReturn (command)` | X | X | X | Returns the output of the command, and sets the datatype to TEXT. |
| `ShellCommandDateReturn (command)` | X | X | X | Returns the output of the command, and sets the datatype to DATE. |
| `ShellCommandNumberReturn (command)` | X | X | X | Returns the output of the command, and sets the datatype to NUMBER. |
| `PlistValueReturn (fullpath, entry, type)` | | | X | Returns the value of the PLIST key, and sets the datatype to TEXT, NUMBER, or DATE. |

### Getting File Information values

You can set the *Custom Inventory Field* to any of the Windows File Information attributes using the `FileInfoReturn` rule.

**Example: Getting Mozilla Firefox version**

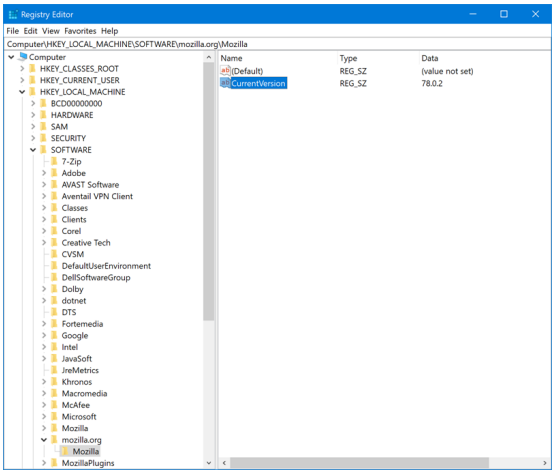
The following example sets the *Custom Inventory Field* for the Mozilla Firefox Product Version as a NUMBER:

In the *Custom Inventory Field*, enter the following:

```
FileInfoReturn(C:\Program Files\Mozilla Firefox\firefox.exe,CurrentVersion,TEXT)
```

### Getting registry key values

You can set the *Custom Inventory Field* to a registry key using the `RegistryValueReturn` rule. Where the `registryPath` (on left) is the path to the entry, the `valueName` (on right) is the key you want to return.




**Example: Getting the Mozilla FireFox CurrentVersion key**

To set the CurrentVersion registry key as a *Custom Inventory Field*:

```
RegistryValueReturn (HKEY_LOCAL_MACHINE\SOFTWARE\Mozilla\Mozilla Firefox\CurrentVersion, TEXT
```

### Getting command output

Command rules enable you to set the output of a command to a *Custom Inventory Field*. The command depends on the command interpreter and executable path on the device.

For example, on Windows devices you can write MS-DOS commands, but not Cygwin-style UNIX commands unless Cygwin is installed and available in the default path for all users.

Use any of the following rules to set the output of the command to a *Custom Inventory Field*:

- `ShellCommandTextReturn (command)`
- `ShellCommandDateReturn (command)`
- `ShellCommandNumberReturn (command)`

**Example: Getting uptime on a Mac OS X**

To set the uptime as a *Custom Inventory Field*:

```
ShellCommandTextReturn(/usr/bin/uptime | sed -e 's/.*load averages://' | awk '{print $1}')
```

### Getting PLIST values

`PlistValueReturn` rules enable you to set a Property List (PList) key as a *Custom Inventory Field*.

**Example: Getting the system locale**

To distribute applications using Managed Installations based on the System-provided language, enter the following rule to get the device locale and then create a corresponding Smart Label that is applied to the device based on the language code reported by the KACE Agent in the *Custom Inventory Field*:

```
PlistValueReturn(~/Library/Preferences/GlobalPreferences.plist, AppleLocale, TEXT)
```

#### Getting multiple values

Join `ValueReturn` rules using either the AND or OR operator. The rule shows the application as an Installed Program, if any of the values are not empty.

The joined values are all set in the same *Custom Inventory Field* separated by the operator and therefore are technically considered for the purposes of Search Criteria, filters, reports, and other appliance processes as TEXT.

`ValueReturn` rules joined by the:

- AND operator: All the values are reported in the *Custom Inventory Field*.
- OR operator: All values are reported in the *Custom Inventory Field*.

In the Custom Inventory field, join rules using the following syntax:

```
Function(arguments...) AND Function(arguments) AND ...
```

Separate the conditional statements from the operator with spaces. Do not join AND and OR operators in the same rule.

# Matching filenames to regular expressions

Regular expressions match a character or the specified string to the filenames in the specified directory.

This section describes the regular expressions that match filenames in Conditional and Value Return rules using a regular expression.

**NOTE:** The KACE Agent only provides functions that compare filenames using regular expressions.

## Understanding regular expressions

You can use regular expression syntax to match filenames.

**TIP:** For more information on writing regular expressions go to http://msdn.microsoft.com/en-us/library/az24scfc.aspx.

The following table provides an overview of the regular expression syntax used to match filenames:

| Character | Description | Example Expression | Target Files | Files Matched |
|---|---|---|---|---|
| (any string) | Non-special characters match any filename that contains the string. | `abc` | abcFile.xls<br>Example.jpg<br>File.doc<br>Myabc.txt<br>MyFile.abc | abcFile.xls<br>Myabc.txt<br>MyFile.abc |
| . | Dot matches any single character. When entered | . | abcFile.xls<br>Example.jpg<br>File.doc | abcFile.xls<br>Example.jpg<br>File.doc |

| Character | Description | Example Expression | Target Files | Files Matched |
|---|---|---|---|---|
| | alone it matches all files. | | Myabc.txt<br>MyFile.abc | Myabc.txt<br>MyFile.abc |
| \ | Backslash is used to escape a special character and for creating a back-reference.<br>For more information, go to http://rexegg.com/regex-capture.html. | `.*\.txt$` | abcFile.xls<br>Example.jpg<br>File.doc<br>Myabc.txt<br>MyFile.abc | Myabc.txt |
| ^ | Caret matches the characters you specify to the start of the filename. | `^k` | install.exe<br>kinstaller.exe<br>runkbot.bat | kinstaller.exe |
| \| | Pipe separates a list of options to match. | `run\|install` | install.exe<br>kinstaller.exe<br>runkbot.bat | install.exe<br>kinstaller.exe<br>runkbot.bat |
| $ | Dollar matches the characters you specify to the end of the filename. | `bat$` | install.exe<br>kinstaller.exe<br>runkbot.bat | runkbot.bat |
| ? | Question mark makes the preceding character optional in matches. | `\.log10?$` | a.log1<br>afile.txt3<br>app.log<br>appconf.log11<br>mylog.log10 | a.log1<br>mylog.log10 |
| * | Asterisk matches the preceding character zero or more times. | `\.log1*$` | a.log1<br>afile.txt3<br>app.log<br>appconf.log11<br>mylog.log10 | a.log1<br>app.log<br>appconf.log11 |
| + | Plus matches the preceding character one or more times. | `ap+.*\.log` | a.log1<br>afile.txt3<br>app.log<br>appconf.log11<br>mylog.log10 | app.log<br>appconf.log11 |
| [ ] | Brackets enclose a character class and match any | `[123]` | a.log1<br>afile.txt3 | a.log1<br>afile.txt3 |

| Character | Description | Example Expression | Target Files | Files Matched |
|---|---|---|---|---|
| | character within the brackets.<br>Character class special character rules differ from normal regular expressions. | | app.log<br>appconf.log11<br>mylog.log10 | appconf.log11<br>mylog.log10 |
| () | Parentheses enclosing characters create a back reference and match the preceding characters and/or the enclosed characters.<br>For more information, go to http://rexegg.com/regex-capture.html. | `(p)\1` | a.log1<br>afile.txt3<br>app.log<br>appconf.log11<br>mylog.log10 | app.log<br>appconf.log11 |
| {n} | Curly brackets repeat the preceding character the number of specified times, where **n** is greater than or equal to 1. | `{p}\.log$` | a.log1<br>afile.txt3<br>app.log<br>appconf.log11<br>mylog.log10 | app.log |

# Regular Expression Rule Reference

The syntax of a regular expression rule varies slightly from the other File rules. The `fullpath` argument is a string that matches the absolute path to the file location, but does not include name of the file. The filename is specified as a separate argument using a regular expression.

The following table provides a list of rules that allow you to use regular expressions.

| Syntax | Win | RHEL | OS X | Description |
|---|---|---|---|---|
| `FilenamesMatchingRegexExist (fullpath,regex)` | X | X | X | Returns true if any files in the specified directory match the filename you entered using a regular expression. |
| `FilenamesMatchingRegexGreaterThan (fullpath,regex,value)` | X | X | X | True if the number of files that match is more than the value. |
| `FilenamesMatchingRegexLessThan (fullpath,regex,value)` | X | X | X | True if the number of files that match is less than the value. |
| `FilenamesMatchingRegexEqual (fullpath,regex,value)` | X | X | X | True if the number of files that match is the same as the value. |

| Syntax | Win | RHEL | OS X | Description |
|---|---|---|---|---|
| `FilenamesMatchingRegexReturn (fullpath,regex,type)` | X | X | X | Sets the Custom Inventory Field to the matching filenames (includes path). |

# Defining rule arguments

You can define arguments in Custom Inventory rules to find paths, files, registry keys, registry entries, version information, environment variables, and other attributes.

For rule syntax and usage, see the tables in Checking for conditions (conditional rules), Getting values from a device (Custom Inventory Field), and Matching filenames to regular expressions.

### Finding a path or file

`path` and `fullpath` are strings that specify the absolute path to a directory or file on the device. For example:

```
C:\Program Files\Mozilla Firefox\firefox.exe
```

The KACE Agent locates the directory or file and performs the specific test.

### Finding a registry key and entry

`registryPath` is a string that specifies the absolute path in the registry to a registry key. For example:

```
HKEY_LOCAL_MACHINE/application/kace
```

### Specifying a version

`version` is an integer (type is TEXT) that the KACE Agent compares to the version of the item being tested on the device.

For example, the `FileVersionGreaterThan` test returns 'true' if the value you specify is higher than the version number of the file or folder and otherwise returns 'false'.

To test a range, join a Less Than and Greater Than rule as follows:

```
FileVersionGreaterThan(C:\Program Files\Adobe\Acrobat\7.0\Acrobat\Acrobat.exe, 6.99)
AND FileVersionLessThan(C:\Program Files\Adobe\Acrobat\7.0\
Acrobat\Acrobat.exe, 8.00)
```

### Specifying environment or user variables

`var` is a string that matches the actual name of the environment variable on the device.

For example, to test that the Program Files directory variable is correctly set:

```
EnvironmentVariableEquals(ProgramFiles, TEXT,
C:\Program Files)
```

### Specifying a file attribute

`attribute` is a system property, a file or folder property, or a KACE Agent-assigned property on the device. The appliance provides operating system-dependent argument types.

### Using Windows file attributes

You can use the `FileInfoGreaterThan`, `FileInfoLessThan`, and `FileInfoEquals` functions to test a file property on Windows in the following syntax:

```
FunctionName (fullpath, attribute, type, value)
```

The following table shows the attributes supported by Windows:

| Attribute | Type | Description |
|---|---|---|
| AccessedDate | DATE | Last date and time the file was accessed. |
| Comments | TEXT | Additional information provided for diagnostic purposes. |
| CompanyName | TEXT | Name of the company that produced the file. |
| CreatedDate | DATE | When the file was created. |
| FileBuildPart | NUMBER | Third position of the File Version. For example: In version 1.2.3, 3=Build. |
| FileDescription | TEXT | File Description of the Windows File Properties Detail page. |
| FileMajorPart | NUMBER | First position of the File Version. For example: In version 1.2.3, 1=Major. |
| FileMinorPart | NUMBER | Second position of the File Version. For example: In version 1.2.3, 2=Minor. |
| FileName | TEXT | Current name of the file. Also see FileExists. |
| FilePrivatePart | NUMBER | Fourth position of the File Version: For example: In version 1.2.3.4, 4=Private. |
| FileVersion | TEXT | Complete File Version shown on the file properties Detail page.<br>Also see FileVersionEquals, FileVersionGreaterThan, and FileVersionLessThan. |
| InternalName | TEXT | Internal name of the file, if one exists, such as the component name.<br>If the file has no internal name, it is equal to the original filename, without an extension. |
| Language | TEXT | Language code, displays corresponding name on the File Properties Detail page. |
| LegalCopyright | TEXT | Copyright notices that apply to the file. |
| LegalTrademarks | TEXT | Trademarks and registered trademarks that apply to the file. |
| ModifiedDate | DATE | Last day and time the file was modified. |
| OriginalFilename | TEXT | Provides the full name of the file when it was put or installed on the device. |
| PrivateBuild | TEXT | Information about the version of the file. |

| Attribute | Type | Description |
|---|---|---|
| ProductBuildPart | NUMBER | Third position of the Product Version. For example: In version 1.2.3, 3=Build. |
| ProductMajorPart | NUMBER | First position of the Product Version. For example: In version 1.2.3, 1=Major. |
| ProductMinorPart | NUMBER | Second position of the Product Version. For example: In version 1.2.3, 2=Minor. |
| ProductName | TEXT | String that matches the Product Name of the Windows property. |
| ProductPrivatePart | NUMBER | Fourth position of the Product Version. For example: In version 1.2.3.4, 4=Private. |
| ProductVersion | TEXT | The full production version.<br>Also see ProductVersionEquals, ProductVersionGreaterThan, and ProductVersionLessThan. |
| SpecialBuild | TEXT | Additional information about the build. |

### Testing for Linux and Mac file attributes

On Linux and Mac devices you can use the following arguments to test file attributes:

| Attribute | Type | Description |
|---|---|---|
| access_time | DATE | The last time the user or system accessed the file |
| block_size | NUMBER | The block size of the file |
| blocks | NUMBER | The number of blocks used by the file |
| creation_time | DATE | The time the file was created |
| device_number | NUMBER | The identification number of the device (disk) containing the file |
| group | TEXT | The group name of the file owner |
| inode | NUMBER | The inode number of the file |
| modification_time | DATE | The last time a change was made and saved |
| number_links | NUMBER | The number of hard links to the file |
| owner | TEXT | The username of the person who owns the file |
| size | NUMBER | The size of the file |

### Specifying the datatype

`type` identifies the type of data you are testing or returning.

The KACE Agent supports the following types:

- `TEXT` is a string. Only valid for exactly matching in conditional rules such as Equals. In ValueReturn rules, this sets the *Custom Inventory Field* type to string and therefore limits search criteria and filtering to matching operators.
- `NUMBER` is an integer. Valid in all conditional rules, this allows you to specify a whole number for comparison.
- `DATE` must be in the format of `MM/dd/yyyy HH:mm:ss`. For example:`09/28/2006 05:03:51`. Time is required. For example, in a comparison such as greater than, you must at least specify the time as 00:00:00.

### Specifying values to test

`value` typically follows `type` except in a rule where the datatype is known, such as in a version rule. The value you specify must match the type. See Specifying the datatype.

### Specifying the name of a registry entry (Windows only)

`valueName` is a string that matches the name of the registry entry you want to test. Used only in registry tests for Windows devices.

### Specifying a PLIST key (Mac only)

`entry` is either NUMBER, TEXT, or DATE and matches a key in a PLIST file on a Mac OS X device. If the wanted key is contained in an array/dictionary within the PLIST file, it can be referenced by specifying the name/integer for the array/dictionary, using a delineating colon, and then the name/integer of the key (**dictionary**:**key**) in the entry argument.

Argument examples:

- A key, **Item 0**, within an array, **PackageGroups**, is referenced by using `PackageGroups:0` for the argument
- A key, **contentType**, within the dictionary, **Item 102**, is referenced by using `102:contentType` for the argument.

### Using a regular expression

`regex` is a regular expressions that matches a filename in a Conditional or Value Return rule. See Matching filenames to regular expressions for more details.

### Defining commands

The shell command functions allow you to specify the `command` you want to run on the device. The guidelines for writing rule arguments do not apply to commands. However, white space after the opening parenthesis, and immediately before the closing parenthesis, is stripped from the command.

# Test Custom Inventory rules

To test Custom Inventory rules you can run a custom inventory command on a KACE Agent-managed device. This ability enables you to debug Custom Inventory rules without running the entire inventory process.

1. Open a command prompt on a device that has the KACE Agent installed.
2. Enter the following command: `kdeploy -custominventory`

   The Agent contacts the appliance and runs the Custom Inventory. Queries and return values are displayed.

# Deploying packages to managed devices

You can deploy packages to managed devices to install software remotely using the appliance.

# Distributing software and using Wake-on-LAN

You can distribute applications, updates, and files from the appliance to managed devices. In addition, you can use Wake-on-LAN to power on devices remotely.

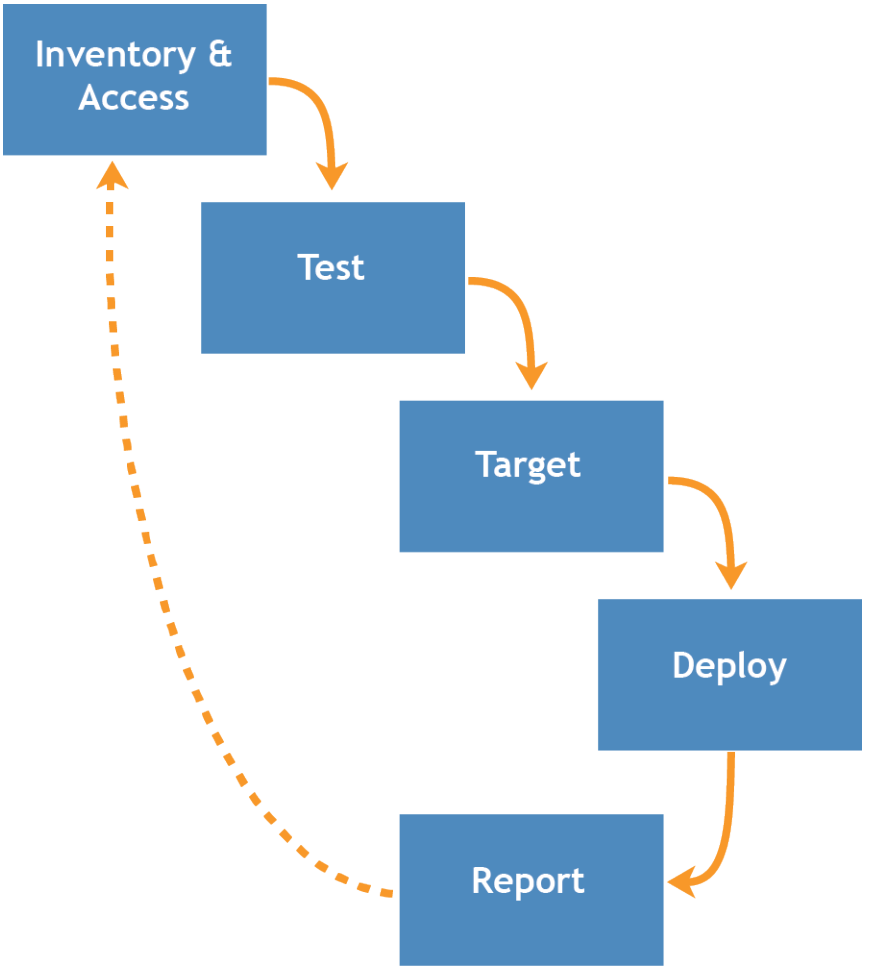
## About software distribution

Software can be distributed from the appliance to Agent-managed Windows, Mac, and Linux devices.

**TIP:** Software distribution is available for items on the *Software* page and for Agent-managed devices only. It is not available for items on the *Software Catalog* page, Microsoft Application Virtualization (App-V) software, or Agentless devices.

The figure shows a high-level example of a software distribution process. You can modify this process as needed.

Figure 10. Software distribution procedure




## About testing software distribution

Before distributing software to a large number of managed devices, test the deployment on a small but representative group of devices to verify that the package is compatible with target operating systems and other applications.

When the appliance distributes software to managed devices, it verifies that a package is designated for a particular device or operating system. However, the appliance cannot assess the software's compatibility with other software on the device. As a result, you should develop a process for testing all deployments.

For example, you could create a test group by applying a label to devices used for testing. Then deploy the required application to the test group using the label before you go deploy to the larger group of devices. This practice helps you to verify the compatibility of the application with the operating system and other applications in your test group. For more information about labeling devices, see Add or edit manual labels.

This section focuses primarily on the test, target, and deploy portions of the process. For more information about managing inventory, see Managing applications on the Software page.

# Tracking changes to distribution settings

If History subscriptions are configured to retain information, you can view the details of the changes made to settings, assets, and objects.

This information includes the date the change was made and the user who made the change, which can be useful during troubleshooting. See About history settings.

# Types of distribution packages

Packages can be distributed to managed devices as Managed Installations, File Synchronizations, User Console packages, and MSI installers.

- **Managed Installations**: Installation packages that are configured to run silently or with user interaction. Managed Installations include installation, uninstallation, and command-line parameters. See Using Managed Installations.
- **File Synchronizations**: A method of distributing files to managed devices. Unlike Managed Installations, however, File Synchronizations do not install files; they simply distribute files. See Create and use File Synchronizations.
- **User Console packages**: Installation packages that contain printer drivers and other applications distributed through the User Console. See About Service Desk.
- **MSI Installer template**: A utility for creating policies and setting basic command line arguments for running Windows MSI-based installers. See Add MSI Installer scripts.

## Attaching digital assets to applications and selecting supported operating systems

To distribute applications to managed devices using Managed Installations or User Console downloads, you need to attach the appropriate digital assets to applications. Digital assets are the files required for deployment, such as installers. In addition, you need to select the supported operating systems for the application. You perform these tasks on the *Software* detail page.

This rule applies even if:

- You want to send a command, rather than an installation or a digital file, to devices.
- You are redirecting the KACE Agents installed on managed devices to retrieve the digital asset, such as EXE or MSI files, from an alternate download location.

See Attach digital assets to applications and select supported operating systems.

# Distributing packages from the appliance

Packages distributed from the appliance are deployed to managed devices only if the inventory item is designated to run on the device's operating system.

For example, if the inventory item is designated for Windows 7 only, the inventory item is not deployed to devices running Windows 8.

Also, packages are deployed only to devices that meet label requirements. For example, if the package is set to deploy to a label named *Office A*, the package does not deploy to devices that are not labeled *Office A*. When the appliance creates an application inventory item, it only records the operating systems on which the item was installed in the inventory detail record.

To deploy Managed Installations, you must select an execution option and a deployment window. See Using Managed Installations.

# Distributing packages from alternate download locations and Replication Shares

You can distribute packages from alternate download locations and Replication Shares.

This distribution is useful when:

- You have remote sites with restricted bandwidth that might have trouble accessing the appliance.
- You want to avoid storing large distribution packages on the appliance.

## About alternate download locations

Alternate download locations are managed devices that can host the files required to distribute software from the appliance to other managed devices.

An alternate download location can be any network location that has all the files required to install a particular application. You can distribute packages from alternate download locations including a UNC address or DFS source. The CIFS and SMB protocols, Samba servers, and file server appliances are supported. You specify the location when you create a Managed Installation.

See Attach digital assets to applications and select supported operating systems.

## About Replication Shares

Replication Shares are devices that keep copies of files for distribution. Replication shares are especially useful if your managed devices are deployed across multiple geographic locations.

For example, using a Replication Share, a device in New York could download files from another device at the same office, rather than downloading those files from an appliance in Los Angeles. A Replication Share is a full replication of all digital assets and is managed automatically by the appliance. Whenever a Replication Share is specified for a label, devices in that label go to the Replication Share to get files.

The KACE Agent always looks to the appliance for distribution files if no Replication Shares are specified for any label applied to a device. If the appliance uses multiple Replication Shares, the agent makes a random selection.

See Using Replication Shares.

# Distributing applications to Mac OS X devices

The appliance provides various methods for distributing applications, updates, and files to Mac OS X devices.

#### About installers and plain packages

On Mac OS X, there is a universal installer with the usual PKG file extension. You cannot upload a PKG file directly, as these files consist of low-level directories, and web browsers cannot handle uploading entire directories.

Plain (APP) packages, which can be installed by dragging them to the *Applications* folder on the Mac, do not require installers. However, APP packages must be archived because they consist of low-level directories, similar to the installer packages.

You can archive installers along with plain applications. The appliance runs installers first and then copies applications into the *Applications* folder.

**Supported package deployments on Mac OS X**

The supported package deployments are PKG, APP, DMG, ZIP, TGZ, and TAR.GZ.

If you package the file as a disk image, the appliance mounts and unmounts it quietly. This section provides examples for each type of deployment. For each of these examples, you must have already uploaded the file to the appliance prior to creating the Managed Installation package. Quest recommends that you install the application on a test device. When the KACE Agent connects to the appliance, the appliance creates an inventory item and a Managed Installation package for the application.

# Using Managed Installations

Managed Installations (MI) are the primary mechanism for deploying applications to, or removing applications from managed devices. Each Managed Installation describes a specific application title and version to be installed or removed, including installation commands, installation files, and target devices (identified by label).

Managed Installations always take place at the same time that managed devices upload inventory data to the appliance. In this way, the appliance confirms that the installation is actually needed before it performs the installation. Installation packages can be configured to run silently or with user interaction. Managed Installations can include installation, uninstallation, and command-line parameters.

Managed Installations requires an active network connections to the appliance. If the connection becomes disrupted during an installation, the process continues when the agent reconnects.

On Windows the most common Managed Installation package deployments are MSI, EXE, and ZIP files.

Supported package deployments for Linux devices include RPM, ZIP, BIN, TGZ, and TAR.GZ files.

## Adding applications to inventory

Before you create a Managed Installation, the files you want to deploy must be associated with an application on the *Software* page. If the application is not yet on the *Software* page, you can add it as needed.

To add an application that is not on the *Software* page, you can:

- Install the application on a managed device, then request an inventory update from the device. See Forcing inventory updates.
- Manually add the application to inventory. See Add applications to Software page inventory manually.

> **CAUTION: If the display name of the application inventory item does not exactly match the name that the application registers in *Add/Remove* programs, the appliance might attempt to deploy a package repeatedly even though it is already there. To solve this problem, add the application to the *Software* inventory list, then use the registered application name in the Managed Installation.**

## About creating Managed Installations

You can create Managed Installations for items that appear on the *Software* page.

See:

- Create Managed Installations for Windows devices
- Create Managed Installations for Mac OS X devices
- Create Managed Installations for RPM files
- Create Managed Installations for TAR.GZ files
- Create Managed Installations for ZIP files

To create packages with special settings, such as parameters, labels, or deployment definitions, you can create multiple distribution packages for a single inventory item. However, the Managed Installation cannot be verified against more than one inventory item because it checks for the existence of only one inventory item.

For each of these examples, you must have already uploaded the file to the appliance before creating the Managed Installation package. Quest recommends installing the application on a test device, waiting for the KACE Agent to connect to the appliance and create an inventory item for the application, and then creating the Managed Installation package from the application.

**NOTE:** Agent deployment is discussed in Provisioning the KACE Agent. For information about updating an existing version of the Agent, see Upload Agent updates manually.

# About installation parameters

You can add installation parameters to the package definitions used to distribute and install applications on managed devices.

Packaged definitions can contain MSI, EXE, ZIP, and other file types for application deployment. If an administrator installs the file on a local device, either by running a single file, BAT file, or VBScript, the package can be installed remotely by the appliance.

To simplify the distribution and installation process, the package definition can also contain parameters that are passed to the installer at run time on the local device. For example, you could use parameters as custom installation settings to bypass an automatic restart.

# Identify parameters that are supported by installer files

You can display the parameters that are supported by installer files from the Windows command line.

1. Open an command prompt.
2. Go to the directory that contains the target installer.

   **For example:** `c:\...\adobe.exe`
3. Type **filename** `/?`

   **For example:** `adobe.exe /?`

   **If that package supports parameters, they are displayed. For example:** `/quiet, /norestart`.
4. Use the parameter definitions identified to update your package definition.

For more information, see the application vendor's documentation.

# Create Managed Installations for Windows devices

You can create Managed Installations to deploy software to Agent-managed Windows devices.

When you create Managed Installations for the Windows platform, you can specify whether you want to display messages to users before and after the installation. You can also indicate whether to deploy the package when the user is logged in or not and limit deployment to a specific label.

For specific details on creating a Managed Installation for an MSI, EXE, or a ZIP file, see Examples of common deployments on Windows.

To distribute applications to managed devices, you must attach the digital assets, which are the files required for installation, to applications. In addition, you must select the supported operating systems for applications. See Attach digital assets to applications and select supported operating systems.

1. Go to the *Managed Installation Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General

Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Distribution**, then click **Managed Installations**.

c. Select **Choose Action > New**.

2. In the *Configure* section, provide the following information:

| Option | Description |
|---|---|
| **Name** | A name that identifies the Managed Installation. This name appears on the *Managed Installations* page. |
| **Execution** | The package deployment setting. Options include:<br>• **Disabled**: Do not deploy the package.<br>• **Anytime**: Deploy the package at the next opportunity, such as the next time the KACE Agent reports inventory information to the appliance.<br>• **At bootup**: Deploy the package the next time the device starts up.<br>**NOTE:** If a device has an Active Directory or Group Policy Object setting that displays a message that the user must acknowledge before logging on, packages are not deployed and scripts do not run until the message is acknowledged.<br>• **After login**: Deploy the package after the user logs in but before the desktop loads.<br>• **While user logged in**: Deploy the package while the user is logged on.<br>• **While user logged off**: Deploy the package only when the device is running and the user is logged off. |
| **Inventory** | Indicate if you want to deploy the software title from **Cataloged Software** or all **Software** by selecting one of these options.<br>• To search for a specific title, begin typing in the *Software* or *Cataloged Software* field.<br>**NOTE: Reclaiming unused software licenses only.** The name of the software that you want to uninstall appears in this field by default. For more information, see Reclaim unused software licenses.<br>• If you want to display only the software that has one or more associated files, select **Only Display Software With an Associated File**. |
| **Associated File** | A Software and Cataloged Software title can have one or more files attached to them, as needed. Indicate if you want to select a specific file associated with the selected software title.<br>• **Choose associated file**: Select this option if you want to associate a file. You can select a file in the list. If you know the file name, start typing it in the box, and select it from the available entries in the list.<br>• **Do not associate file**: Select this option if you do not want to associate a file. |
| **Alternate Location** | Specify a location from which files can be downloaded for a specific Managed Installation.<br>**Path**: Enter the location where the KACE Agent can retrieve digital installation files.<br>**Checksum**: Enter an alternate checksum (MD5) that matches the MD5 checksum on the remote file share. If no checksum is entered, the digital asset on the file |

| Option | Description |
|---|---|
| | share must match the digital asset associated with the deployment package on the appliance. Also, the target path must include the complete filename (for example, `\\fileserver_one\software\adobe.exe`). You can create the checksum using any tool, including KDeploy.exe, which is installed with the KACE Agent.<br>**To create the checksum using KDeploy.exe:**<br>a. On a device with the KACE Agent installed, open a command prompt or terminal window.<br>b. Go to the Quest KACE installation directory. For example:<br>Windows 32-bit devices: `C:\Program Files\Quest\KACE`<br>Windows 64-bit devices: `C:\Program Files (x86)\Quest\KACE`<br>Mac OS X devices: `/Library/Application Support/Quest/KACE/bin`<br>c. Enter the following command: KDeploy -hash=**filename**<br>Where **filename** is the UNC path to the file. If the path contains spaces, enclose the entire path in double quotation marks.<br>d. Press **Ctrl C** or **Command C** to copy the MD5 checksum. You can then paste it into other files, such as Notepad.<br>**Credential**: The details of the service account required to connect to the device and run commands. Select existing credentials from the drop-down list, or select **Add new credential** to add credentials not already listed. See Add and edit User/Password credentials.<br>**NOTE:** If the target device is part of a replication label, the appliance does not fetch applications from the alternate download location. You can edit an existing label or create a label to specify the alternate location globally. Because that label cannot be specific to any Managed Installation, you cannot specify an alternate checksum that matches the checksum on the remote file share.<br>See Distributing packages from alternate download locations and Replication Shares and Add or edit manual labels. |
| **Default Installation** | Use the default commands during installation.<br>**Additional Parameters**: Specify the installation behavior as follows:<br>• The maximum field length is 256 characters. If a path exceeds this limit, use the command line to point to a BAT file that contains the path and the command.<br>• If a file path includes spaces, enclose the complete path in double quotation marks. For example: "`\\kace_share\demo files\share these files\setup.bat`" |
| **Override Default Installation** | Specify the full command-line parameters. See the MSI Command Line documentation for available runtime options.<br>• **Uninstall**: Uninstall the application from the command line.<br>• **Run Command Only (do not download file)**: Run the command line only.<br>• **Don't Prepend msiexec.exe**: Prevent the appliance from adding `msiexec.exe` to the beginning of the file. |
| **Delete Downloaded Files** | Delete the files when the deployment is complete. |

| Option | Description |
|---|---|
| **ITNinja** | Deployment tips from ITNinja. These tips are available only if you share usage data. See Configure data sharing preferences. |

3. Specify deployment settings:

| Option | Description |
|---|---|
| **All Devices** | Deploy to all devices. Clear the check box to limit the deployment to specific labels or devices. |
| **Labels** | Limit deployment to devices that belong to specified labels. To select labels, click **Edit**, drag labels to the *Limit Deployment to* window, then click **Save**.<br>If you select a label that has a Replication Share or an alternate download location, the appliance copies digital assets from that Replication Share or alternate download location instead of downloading them directly from the appliance.<br>**NOTE:** The appliance uses a Replication Share before it uses the KACE Alt Location. |
| **Devices** | Limit deployment to specific devices. In the drop-down list, select the devices to which you want to deploy the application. To filter the list, type a few characters in the *Devices* field. The number next to the field indicates the number of devices available.<br>**NOTE: Reclaiming unused software licenses only.** Any devices from which you want to remove the applicable software are listed. You can edit the list of devices, as needed. To remove the software from all devices, simply select , as described above. For more information, see Reclaim unused software licenses. |

4. Specify the user notification settings:

| Option | Description |
|---|---|
| **Alert user before run** | Display a message on managed devices before installation. When you select this option, the following fields appear:<br>• **Message**: The message that appears on managed devices before installation begins. It starts with snooze options that allow the user to run the managed install at a later time.<br>• **Timeout**: The length of time, in minutes, during which the message appears.<br>• **Action**: The action that takes place at the end of the **Initial Message Timeout** period. Options include **Install later** or **Install now**. Select **Install now** to install the application immediately, or select **Install later** to postpone the installation until a user responds. Install later is useful when you want to notify users of an installation or reboot before it occurs. |
| **Initial Message** | Display a message on managed devices before installation. When you select this option, the following fields appear:<br>• **Message**: The message that appears on managed devices before installation begins.<br>• **Timeout**: The length of time, in minutes, during which the message appears.<br>• **Action**: The action that takes place at the end of the **Initial Message Timeout** period. Options include **Install later** or **Install now**. Select **Install now** to install the application immediately, or select **Install later** to postpone the installation |

| Option | Description |
|---|---|
| | until a user responds. Install later is useful when you want to notify users of an installation or reboot before it occurs. |
| **Completion Message** | Display a message on managed devices after the installation is complete. When you select this option, the following fields appear:<br>• **Message**: The message that appears on managed devices when the installation is complete.<br>• **Timeout**: The length of time, in minutes, during which the message appears. |

5. Select Schedule options:

| Option | Description |
|---|---|
| **Deployment Window**<br>Start<br>End | The time, in 24-hour clock format, for package deployment to start and end. The *Deployment Window* time affects all *Action* options. Also, the run intervals defined in the appliance *Settings* interact with or override the deployment window of specific packages. |
| **Order** | The order in which to install or uninstall applications. The lowest value is deployed first. If an install action and an uninstall action both have the same order value, the uninstall action is performed first.<br>**NOTE:** Managed Installations are always deployed in order, regardless of whether their specified software packages come from the Software Catalog or the Software list. Managed Installations with a lower deploy order always prevent other Managed Installations from running until they are successfully installed or exceed the specified retry times. |
| **Maximum Attempts** | The maximum number of attempts, between 0 and 99, to indicate the number of times the appliance tries to install the package. If you specify 0, the appliance attempts to install the package indefinitely. |

6. Click **Save**.

# Examples of common deployments on Windows

The most common Managed Installation package deployments are MSI, EXE, and ZIP files.

## *Standard MSI example*

Using MSI files is an easy, self-contained way to deploy software to Windows devices. If your MSI file requires no special transformation or customization, the deployment is straightforward.

MSI files require a `/i` switch when using other switches with an install.

The appliance parameter line does not require the filename or `msiexec` syntax. Only the `/*` input is required:

`/qn /I` (Correct)

`msiexec /I /qn` (Incorrect)

**NOTE:** To use parameters with MSI files, all your target devices must have the same version of Windows Installer (available from Microsoft). Some switches might not be active on older versions. The most up-to-date version of Windows Installer can be distributed to devices from the appliance.

**TIP:** If you are using Windows Installer 3.0 or higher, you can identify the supported parameters by selecting the **Run** program available from the *Start* menu. Enter msiexec in the pop-up window. A window that shows the supported parameters list appears.

### *Standard EXE example*

EXE files are similar to MSI files with one exception.

EXE files differ from MSI files as follows: /I is not required in the *Run Parameters* line when using an EXE file.

When using an executable file, it is often helpful to identify switch parameters for a quiet or silent installation. To switch parameters, specify /? in the *Run Parameters* field.

## Create Managed Installations for ZIP files

Deploying software using a ZIP file is a convenient way to package software when multiple files are required to deploy a title.

For example, a software title might require a `setup.exe` file, configuration files, and data files. If you have a CD-ROM that contains a group of files required to install a particular application, you can package them together in a ZIP file and upload them to the appliance for deployment.

**NOTE:** The KACE Agent automatically runs deployment packages with MSI and EXE extensions.

**NOTE:** In addition, you can create a ZIP archive that contains many files and direct the appliance to unpack the archive and run a specific file. Place the name of the file that you want to run in the command (executable) field within the deployment package (for example, `runthis.exe`).

To distribute applications to managed devices, you must attach the digital assets, which are the files required for installation, to applications. In addition, you must select the supported operating systems for applications. See Attach digital assets to applications and select supported operating systems.

1. Browse to the location that contains the necessary installation files, select all the files and create a ZIP file using a utility such as WinZIP®.
2. Log in to the appliance Administrator Console.
3. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
4. Create an inventory item for the target deployment.

   **You can do this manually from the** *Inventory* > *Software* **page or by installing the package on a device that regularly connects to the appliance. See About the Software page.**
5. Associate the ZIP file with the inventory item and upload it to the appliance:
   a. On the left navigation bar, click **Distribution**, then click **Managed Installations**.
   b. Select **Choose Action** > **New**.
   c. Select the application title that the ZIP file is associated with from the *Software* drop-down list. To see all application titles, clear the check box **Only display records with an associated file**.
6. In the *Run Parameters* field, specify the complete command with arguments.

   **For example:** `setup.exe /qn`
7. Specify additional settings as needed.

   **See Create Managed Installations for Windows devices.**
8. Click **Save**.

## Create Managed Installations for RPM files

You can create Managed Installations to deploy software on Linux-based devices using RPM files.

To distribute applications to managed devices, you must attach the digital assets, which are the files required for installation, to applications. In addition, you must select the supported operating systems for applications. See Attach digital assets to applications and select supported operating systems.

1. Go to the *Managed Installation Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Distribution**, then click **Managed Installations**.
    c. Select **Choose Action > New**.
2. In the *Software* drop-down list, select a software title. To search for a title, begin typing in the *Software* field.

    **By default, the KACE Agent attempts to install the RPM file using the following command. In general, this command is sufficient to install a new package or update an existing one to a new version:**

    `rpm -U` **packagename.rpm**

    If you select a ZIP, TGZ, or TAR.GZ file, the content is unpacked, and the root directory is searched for all RPM files. The installation command runs against each of these files. The appliance finds all RPM files at the top level of an archive automatically, so you can install more than one package at a time. You can also create an archive containing a shell script and then specify that script name as the full command. The appliance runs that command if it is found; otherwise, the appliance logs an error.

    Default parameters are used unless you specify parameters in the *Run Parameters* field.

    You can specify wildcards in the filenames you use. If the filename contains spaces, enclose it in single or double quotation marks. The files are extracted into a directory in `/tmp` and it becomes the current working directory of the command.

    **NOTE:** On Red Hat Linux, if you only want to run your script, you do not need to include any other files in your archive.

    If the path environment variable of your root account does not include the current working directory, and you want to run a shell script or other executable that you have included inside an archive, specify the relative path to the executable in the *Full Command Line* field. The command runs inside a directory alongside the files that have been extracted.

    For example, to run a shell script called `installThis.sh`, package it alongside an RPM file, and then enter the command: ./installThis.sh in the *Installation Command* field. If you archive it inside another directory, the *Installation Command* field is:

    `./dir/filename.sh`

    Both these examples, as well as some other appliance functions, assume that `sh` is in the root's path. If you are using another scripting language, you might need to specify the full path to the command processor you want to run in the installation command, such as:

    `/bin/sh ./`**filename**`.sh`

    Include appropriate arguments for an unattended, batch script.

    If you select the uninstall check box in the MI detail, the KACE Agent runs the following command on either your standalone RPM file or each RPM file it finds in the archive, removing the packages automatically:

    `//usr/sbin/rpm -e` **packagename**`.rpm`

    The package is removed only if the archive or package has been downloaded to the device. If you select the *Uninstall Using Full Command Line* check box, specify a full command line in the *Installation Command* field to ensure the correct removal command runs on the correct package. Because no package is downloaded in this case, specify the path in the installation database where the package receipt is stored.
3. If your package requires additional options, provide the following information:

| Option | Description |
|---|---|
| **Name** | A name that identifies the Managed Installation. This name appears on the *Managed Installations* page. |
| **Execution** | Select the most appropriate time for this package to be deployed. For the Linux platform, the options are **Anytime (next available)** and **Disabled**. |
| **Inventory** | Indicate if you want to deploy the software title from **Cataloged Software** or all **Software** by selecting one of these options.<br>• To search for a specific title, begin typing in the *Software* or *Cataloged Software* field.<br>**NOTE: Reclaiming unused software licenses only.** The name of the software that you want to uninstall appears in this field by default. For more information, see Reclaim unused software licenses.<br>• If you want to display only the software that has one or more associated files, select **Only Display Software With an Associated File**. |
| **Associated File** | A Software and Cataloged Software title can have one or more files attached to them, as needed. Indicate if you want to select a specific file associated with the selected software title.<br>• **Choose associated file**: Select this option if you want to associate a file. You can select a file in the list. If you know the file name, start typing it in the box, and select it from the available entries in the list.<br>• **Do not associate file**: Select this option if you do not want to associate a file. |
| **Alternate Location** | Specify a location from which files can be downloaded for a specific Managed Installation.<br>**Path**: Enter the location where the KACE Agent can retrieve digital installation files.<br>**Checksum**: Enter an alternate checksum (MD5) that matches the MD5 checksum on the remote file share. If no checksum is entered, the digital asset on the file share must match the digital asset associated with the deployment package on the appliance. Also, the target path must include the complete filename (for example, `\\fileserver_one\software\adobe.exe`). You can create the checksum using any tool, including KDeploy.exe, which is installed with the KACE Agent.<br>**To create the checksum using KDeploy.exe:**<br>a. On a device with the KACE Agent installed, open a command prompt or terminal window.<br>b. Go to the Quest KACE installation directory. For example:<br>Windows 32-bit devices: `C:\Program Files\Quest\KACE`<br>Windows 64-bit devices: `C:\Program Files (x86)\Quest\KACE`<br>Mac OS X devices: `/Library/Application Support/Quest/KACE/bin`<br>c. Enter the following command: KDeploy -hash=**filename**<br>Where **filename** is the UNC path to the file. If the path contains spaces, enclose the entire path in double quotation marks.<br>d. Press **Ctrl C** or **Command C** to copy the MD5 checksum. You can then paste it into other files, such as Notepad.<br>**Credential**: The details of the service account required to connect to the device and run commands. Select existing credentials from the drop-down list, or select **Add new credential** to add credentials not already listed. See Add and edit User/Password credentials. |

| Option | Description |
|---|---|
| | **NOTE:** If the target device is part of a replication label, the appliance does not fetch applications from the alternate download location. You can edit an existing label or create a label to specify the alternate location globally. Because that label cannot be specific to any Managed Installation, you cannot specify an alternate checksum that matches the checksum on the remote file share.<br>See Distributing packages from alternate download locations and Replication Shares and Add or edit manual labels. |
| **Installation Command** | Installation command options. |
| **Default Installation** | Select this option if you have an RPM file and you want the appliance to run the default installation command. Linux devices use: rpm [-U \| Run Parameters] "**packagename**.tgz"<br>**Run Parameters**: (Optional) If you select **Use Default**, specify the parameters to use. Run parameters are not required if you have an RPM file.<br>Enter a value to override (Default `-U` default).<br>For example, if you set **Run Parameters** to: -ivh --replacepkgs, then the command that runs on the device is:<br>`rpm -ivh -replacepkgs package.rpm` |
| **Override Default Installation** | Select this option to specify the complete command line here. If you are using an archive file, this command runs against all of the RPM files it finds. |
| **Uninstall** | Remove the package from the device using the command line. If you specified a command in the *Full Command Line* field, the command runs. Otherwise, the KACE Agent attempts to run the command, which is generally expected to remove the package. |
| **Run Command Only (do not download file)** | Run the command only. This does not download the actual digital asset. |
| **Delete Downloaded Files** | Delete the files when the deployment is complete. |
| **ITNinja** | Deployment tips from ITNinja. These tips are available only if you share usage data. See Configure data sharing preferences. |

4. Specify deployment settings:

| Option | Description |
|---|---|
| **All Devices** | Deploy to all devices. Clear the check box to limit the deployment to specific labels or devices. |
| **Labels** | Limit deployment to devices that belong to specified labels. To select labels, click **Edit**, drag labels to the *Limit Deployment to* window, then click **Save**.<br>If you select a label that has a Replication Share or an alternate download location, the appliance copies digital assets from that Replication Share or alternate download location instead of downloading them directly from the appliance. |

| Option | Description |
|---|---|
| | **NOTE:** The appliance uses a Replication Share before it uses the KACE Alt Location. |
| **Devices** | Limit deployment to specific devices. In the drop-down list, select the devices to which you want to deploy the application. To filter the list, type a few characters in the *Devices* field. The number next to the field indicates the number of devices available.<br>**NOTE: Reclaiming unused software licenses only.** Any devices from which you want to remove the applicable software are listed. You can edit the list of devices, as needed. To remove the software from all devices, simply select , as described above. For more information, see Reclaim unused software licenses. |

5. Specify the user notification settings:

| Option | Description |
|---|---|
| **Alert user before run** | Display a message on managed devices before installation. When you select this option, the following fields appear:<br>• **Message**: The message that appears on managed devices before installation begins. It starts with snooze options that allow the user to run the managed install at a later time.<br>• **Timeout**: The length of time, in minutes, during which the message appears.<br>• **Action**: The action that takes place at the end of the **Initial Message Timeout** period. Options include **Install later** or **Install now**. Select **Install now** to install the application immediately, or select **Install later** to postpone the installation until a user responds. Install later is useful when you want to notify users of an installation or reboot before it occurs. |
| **Initial Message** | Display a message on managed devices before installation. When you select this option, the following fields appear:<br>• **Message**: The message that appears on managed devices before installation begins.<br>• **Timeout**: The length of time, in minutes, during which the message appears.<br>• **Action**: The action that takes place at the end of the **Initial Message Timeout** period. Options include **Install later** or **Install now**. Select **Install now** to install the application immediately, or select **Install later** to postpone the installation until a user responds. Install later is useful when you want to notify users of an installation or reboot before it occurs. |
| **Completion Message** | Display a message on managed devices after the installation is complete. When you select this option, the following fields appear:<br>• **Message**: The message that appears on managed devices when the installation is complete.<br>• **Timeout**: The length of time, in minutes, during which the message appears. |

6. Select Schedule options:

| Option | Description |
|---|---|
| **Deployment Window** | The time, in 24-hour clock format, for package deployment to start and end. The *Deployment Window* time affects all *Action* options. Also, the run intervals defined |

| Option | Description |
|---|---|
| Start<br>End | in the appliance *Settings* interact with or override the deployment window of specific packages. |
| **Order** | The order in which to install or uninstall applications. The lowest value is deployed first. If an install action and an uninstall action both have the same order value, the uninstall action is performed first.<br>**NOTE:** Managed Installations are always deployed in order, regardless of whether their specified software packages come from the Software Catalog or the Software list. Managed Installations with a lower deploy order always prevent other Managed Installations from running until they are successfully installed or exceed the specified retry times. |
| **Maximum Attempts** | The maximum number of attempts, between 0 and 99, to indicate the number of times the appliance tries to install the package. If you specify 0, the appliance attempts to install the package indefinitely. |

7. Click **Save**.

# Create Managed Installations for TAR.GZ files

Deploying software using a TAR.GZ file is a convenient way to package software when more than one file is required to deploy a particular software title.

For example, some applications require several files, such as RPM, configuration, and data files, for deployment. You can package these files together in a TAR.GZ file, upload them to your appliance, and create Managed Installations that use the TAR.GZ files.

To distribute applications to managed devices, you must attach the digital assets, which are the files required for installation, to applications. In addition, you must select the supported operating systems for applications. See Attach digital assets to applications and select supported operating systems.

1. Use the following two commands to create a TAR.GZ file:
   a. `tar -cvf` **filename**`.tar` **packagename**`.rpm`
   b. `gzip` **filename**`.tar`
   This creates **filename**`.tar.gz`
2. Log in to the appliance Administrator Console.
3. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
4. Create an inventory item for the target deployment.

   You can do this manually from the *Inventory* > *Software* page, or by installing the package on a managed device that regularly connects to the appliance. See About the Software page.
5. Associate the TAR.GZ file with the inventory item, and upload it to the appliance:
   a. On the left navigation bar, click **Distribution**, then click **Managed Installations**.
   b. Select **Choose Action > New**.
   c. Select the application title with which the TAR.GZ file is associated from the *Software* drop-down list.

      **During installation, the file is uncompressed and the installation command runs against each of the RPM packages.**

   If no *Run Parameters* are provided, `-U` is used.

You do not need to specify a full command line. The appliance runs the installation command by itself. The Linux device tries to install using:

```
rpm [-U | Run Parameters] "packagename.tgz"
```

d. **Optional**: If you have many files, create a ZIP archive that contains them, then direct the appliance to unpack the archive and run a specific file.

**To do this, place the name of the file that you want to run in the command (executable) field within the deployment package (for example, runthis.exe). Provide additional package details. See Using Managed Installations.**

e. Click **Save**.

The KACE Agent automatically runs deployment packages with RPM extensions.

# Create Managed Installations for Mac OS X devices

You can create Managed Installations for Mac OS X devices as needed.

To distribute applications to managed devices, you must attach the digital assets, which are the files required for installation, to the application. In addition, you must select the supported operating systems for the application. See Attach digital assets to applications and select supported operating systems.

1. Go to the *Managed Installation Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Distribution**, then click **Managed Installations**.
   c. Select **Choose Action > New**.
2. Select the application in the *Software* drop-down list.

**By default, the KACE Agent attempts to install the PKG file using the following command:**

```
installer -pkg packagename.pkg -target / [Run Parameters]
```

If you have selected a DMG, ZIP, or TGZ, the contents are unpacked and the root directory is searched for all PKG files. The installation command runs against each of these PKG files and processes them in alphabetical order.

Next, the appliance searches for all plain applications (APP) on the top level of the archive and copies them to the *Applications* folder using the following command:

```
ditto -rscs Application.app /Applications/Application.app
```

**To run a script or change any of these command lines, you can specify the appropriate script invocation as the Full Command Line. You can specify wildcards in the filenames you use. Enclose the filename in single or double quotation marks if it contains spaces. The files are extracted into a directory in `/tmp`, and that becomes the current working directory of the command.**

**TIP:** If you only want to run your script on Mac OS X, you do not need to include any other files in your archive.

3. If the package requires additional options, provide the following information:

| Option | Description |
|---|---|
| **Name** | A name that identifies the Managed Installation. This name appears on the *Managed Installations* page. |

| Option | Description |
|---|---|
| **Execution** | The package deployment setting. Options include:<br>• **Disabled**: Do not deploy the package.<br>• **Anytime**: Deploy the package at the next opportunity, such as the next time the KACE Agent reports inventory information to the appliance.<br>• **At bootup**: Deploy the package the next time the device starts up.<br>**NOTE:** If a device has an Active Directory or Group Policy Object setting that displays a message that the user must acknowledge before logging on, packages are not deployed and scripts do not run until the message is acknowledged.<br>• **After login**: Deploy the package after the user logs in but before the desktop loads.<br>• **While user logged in**: Deploy the package while the user is logged on.<br>• **While user logged off**: Deploy the package only when the device is running and the user is logged off. |
| **Inventory** | Indicate if you want to deploy the software title from **Cataloged Software** or all **Software** by selecting one of these options.<br>• To search for a specific title, begin typing in the *Software* or *Cataloged Software* field.<br>**NOTE: Reclaiming unused software licenses only.** The name of the software that you want to uninstall appears in this field by default. For more information, see Reclaim unused software licenses.<br>• If you want to display only the software that has one or more associated files, select **Only Display Software With an Associated File**. |
| **Associated File** | A Software and Cataloged Software title can have one or more files attached to them, as needed. Indicate if you want to select a specific file associated with the selected software title.<br>• **Choose associated file**: Select this option if you want to associate a file. You can select a file in the list. If you know the file name, start typing it in the box, and select it from the available entries in the list.<br>• **Do not associate file**: Select this option if you do not want to associate a file. |
| **Alternate Location** | Specify a location from which files can be downloaded for a specific Managed Installation.<br>**Path**: Enter the location where the KACE Agent can retrieve digital installation files.<br>**Checksum**: Enter an alternate checksum (MD5) that matches the MD5 checksum on the remote file share. If no checksum is entered, the digital asset on the file share must match the digital asset associated with the deployment package on the appliance. Also, the target path must include the complete filename (for example, `\\fileserver_one\software\adobe.exe`). You can create the checksum using any tool, including KDeploy.exe, which is installed with the KACE Agent.<br>**To create the checksum using KDeploy.exe:**<br>a. On a device with the KACE Agent installed, open a command prompt or terminal window.<br>b. Go to the Quest KACE installation directory. For example: |

| Option | Description |
|---|---|
| | Windows 32-bit devices: `C:\Program Files\Quest\KACE`<br>Windows 64-bit devices: `C:\Program Files (x86)\Quest\KACE`<br>Mac OS X devices: `/Library/Application Support/Quest/KACE/bin`<br>c. Enter the following command: KDeploy -hash=**filename**<br>Where **filename** is the UNC path to the file. If the path contains spaces, enclose the entire path in double quotation marks.<br>d. Press **Ctrl C** or **Command C** to copy the MD5 checksum. You can then paste it into other files, such as Notepad.<br>**Credential**: The details of the service account required to connect to the device and run commands. Select existing credentials from the drop-down list, or select **Add new credential** to add credentials not already listed. See Add and edit User/Password credentials.<br>**NOTE:** If the target device is part of a replication label, the appliance does not fetch applications from the alternate download location. You can edit an existing label or create a label to specify the alternate location globally. Because that label cannot be specific to any Managed Installation, you cannot specify an alternate checksum that matches the checksum on the remote file share.<br>See Distributing packages from alternate download locations and Replication Shares and Add or edit manual labels. |
| **Default Installation** | You do not need to specify an installation command. The server runs the installation command by itself. The Mac OS X device tries to install the package using this command:<br>`installer -pkg packagename.pkg -target / [Run Parameters]`<br>or<br>`ditto -rsrc packagename.app /Applications/theapp`<br>If you have specified an archive file, this command runs against all of the PKG files or APP files it can find. |
| **Override Default Installation** | Specify the full command-line parameters. See the MSI Command Line documentation for available runtime options.<br>**NOTE:** When using a DMG package, the command line should be relative to the file path of the mounted DMG file.<br>• **Uninstall**: Uninstall the application from the command line.<br>• **Run Command Only (do not download file)**: Run the command line only.<br>• **Don't Prepend msiexec.exe**: Prevent the appliance from adding `msiexec.exe` to the beginning of the file. |
| **Delete Downloaded Files** | Delete the files when the deployment is complete. |
| **ITNinja** | Deployment tips from ITNinja. These tips are available only if you share usage data. See Configure data sharing preferences. |

**NOTE:** User notification messages are not available on Mac OS X devices.

4. Specify deployment settings:

| Option | Description |
|---|---|
| **All Devices** | Deploy to all devices. Clear the check box to limit the deployment to specific labels or devices. |
| **Labels** | Limit deployment to devices that belong to specified labels. To select labels, click **Edit**, drag labels to the *Limit Deployment to* window, then click **Save**.<br>If you select a label that has a Replication Share or an alternate download location, the appliance copies digital assets from that Replication Share or alternate download location instead of downloading them directly from the appliance.<br>**NOTE:** The appliance uses a Replication Share before it uses the KACE Alt Location. |
| **Devices** | Limit deployment to specific devices. In the drop-down list, select the devices to which you want to deploy the application. To filter the list, type a few characters in the *Devices* field. The number next to the field indicates the number of devices available.<br>**NOTE: Reclaiming unused software licenses only.** Any devices from which you want to remove the applicable software are listed. You can edit the list of devices, as needed. To remove the software from all devices, simply select , as described above. For more information, see Reclaim unused software licenses. |

5. Select Schedule options:

| Option | Description |
|---|---|
| **Deployment Window**<br>Start<br>End | The time, in 24-hour clock format, for package deployment to start and end. The *Deployment Window* time affects all *Action* options. Also, the run intervals defined in the appliance *Settings* interact with or override the deployment window of specific packages. |
| **Order** | The order in which to install or uninstall applications. The lowest value is deployed first. If an install action and an uninstall action both have the same order value, the uninstall action is performed first.<br>**NOTE:** Managed Installations are always deployed in order, regardless of whether their specified software packages come from the Software Catalog or the Software list. Managed Installations with a lower deploy order always prevent other Managed Installations from running until they are successfully installed or exceed the specified retry times. |
| **Maximum Attempts** | The maximum number of attempts, between 0 and 99, to indicate the number of times the appliance tries to install the package. If you specify 0, the appliance attempts to install the package indefinitely. |

6. Click **Save**.

For more information, see:

- Distributing software and using Wake-on-LAN
- Using Managed Installations

# Create and use File Synchronizations

Using File Synchronizations, you can push out any type of file to Agent-managed devices.

File Synchronizations enable you to distribute files to managed devices. Unlike Managed Installations, however, File Synchronizations do not install files; they simply distribute files. Use File Synchronizations to copy files of any type to managed devices.

The string `KACE_ALT_Location` in the *Alternate Location* field is replaced with the value assigned by the corresponding label. You should not have a device in more than one label with an Alternate Location specified.

1. Go to the *File Synchronizations* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Distribution**, then click **File Synchronizations**.
    c. Select **Choose Action > New**.

    **If this option is unavailable, there are no applications with the associated files in inventory. See Attach digital assets to applications and select supported operating systems.**
2. In the *Configure* section, provide the following information:

| Option | Description |
|---|---|
| **Enabled** | Enable the File Synchronization. When the KACE Agents on selected devices check in to the appliance, the file is distributed. |
| **Name** | A name that identifies the File Synchronization. This name appears on the *File Synchronizations* page. |
| **Path** | The directory location, on target devices, to which you want to save the file. |
| **Create Path** | Create the location specified in the *Path* field if it does not already exist. |
| **Credentials** | The details of the service account required to connect to the device and run commands. Select existing credentials from the drop-down list, or select **Add new credential** to add credentials not already listed. See Add and edit User/Password credentials. |
| **File** | The file to be distributed to target devices. To appear on the list, applications must have associated files in inventory. See Attach digital assets to applications and select supported operating systems. |
| **Do Not Uncompress Distribution** | Prevent the appliance from uncompressing files. |
| **Persist** | Confirm that the file does not already exist on target devices before attempting to distribute it. |
| **Create Shortcut** | Create a desktop shortcut to the file location on the device. |
| **Name** | The display name for the desktop shortcut. |
| **Delete Temporary Files** | Delete the files when the deployment is complete. |

| Option | Description |
|---|---|
| **ITNinja** | Deployment tips from ITNinja. These tips are available only if you share usage data. See Configure data sharing preferences. |

3. Specify deployment settings:

| Option | Description |
|---|---|
| **All Devices** | Deploy to all devices. Clear the check box to limit the deployment to specific labels or devices. |
| **Labels** | Limit deployment to devices that belong to specified labels. To select labels, click **Edit**, drag labels to the *Limit Deployment to* window, then click **Save**.<br>If you select a label that has a Replication Share or an alternate download location, the appliance copies digital assets from that Replication Share or alternate download location instead of downloading them directly from the appliance.<br>**NOTE:** The appliance uses a Replication Share before it uses the KACE Alt Location. |
| **Devices** | Limit deployment to specific devices. In the drop-down list, select the devices to which you want to deploy the application. To filter the list, type a few characters in the *Devices* field. The number next to the field indicates the number of devices available. |
| **Initial Message** | Display a message on devices before installation. |
| **Completion Message** | Display a message on devices after the installation is complete. |
| **Blackout Window** | The time during which Agents on managed devices are prevented from performing File Synchronizations. |
| **Alternate Location** | Specify a location from which files can be downloaded for a specific Managed Installation.<br>**Path**: Enter the location where the KACE Agent can retrieve digital installation files.<br>**Checksum**: Enter an alternate checksum (MD5) that matches the MD5 checksum on the remote file share. If no checksum is entered, the digital asset on the file share must match the digital asset associated with the deployment package on the appliance. Also, the target path must include the complete filename (for example, `\\fileserver_one\software\adobe.exe`). You can create the checksum using any tool, including KDeploy.exe, which is installed with the KACE Agent.<br>**To create the checksum using KDeploy.exe:**<br>a. On a device with the KACE Agent installed, open a command prompt or terminal window.<br>b. Go to the Quest KACE installation directory. For example:<br>Windows 32-bit devices: `C:\Program Files\Quest\KACE`<br>Windows 64-bit devices: `C:\Program Files (x86)\Quest\KACE`<br>Mac OS X devices: `/Library/Application Support/Quest/KACE/bin`<br>c. Enter the following command: KDeploy -hash=**filename**<br>Where **filename** is the UNC path to the file. If the path contains spaces, enclose the entire path in double quotation marks.<br>d. Press **Ctrl C** or **Command C** to copy the MD5 checksum. You can then paste it into other files, such as Notepad. |

| Option | Description |
|---|---|
| | **Credential**: The details of the service account required to connect to the device and run commands. Select existing credentials from the drop-down list, or select **Add new credential** to add credentials not already listed. See Add and edit User/Password credentials.<br><br>**NOTE:** If the target device is part of a replication label, the appliance does not fetch applications from the alternate download location. You can edit an existing label or create a label to specify the alternate location globally. Because that label cannot be specific to any Managed Installation, you cannot specify an alternate checksum that matches the checksum on the remote file share.<br><br>See Distributing packages from alternate download locations and Replication Shares and Add or edit manual labels. |

4. Click **Save**.

**TIP:** To distribute files previously deployed after the deployment window has closed, go to the *File Synchronization Detail* page for the File Synchronization, then click **Save and Resend Files** at the bottom of the page.

# Using Wake-on-LAN

Wake-on-LAN enables you to power-on devices remotely from the appliance regardless of whether the devices have the KACE Agent installed.

**NOTE:** To use Wake-on-LAN, devices must be equipped with Wake-on-LAN-enabled network interface card (NIC) and BIOS.

For Wake-on-LAN, the appliance broadcasts UDP traffic on your network on port 7. The appliance sends 16 packets per Wake-on-LAN request because it must guess the broadcast address that is required to get the “Magic Packet” to the target device. This traffic is ignored by devices that are not being powered-on remotely, and the traffic should not have a noticeable impact on the network.

You can power on devices belonging to the same subnet as the appliance, or on different subnets. To power on a device associated with a different subnet, you must designate a KACE Agent as a Wake-on LAN Relay.

## Issue Wake-on-LAN requests

To wake multiple devices at once, you can specify a label to which those devices belong, or you can wake devices individually.

If the device you want to wake is not inventoried by the appliance but you know the MAC (hardware) address and the device’s last-known IP address, you can manually enter the information to wake the device.

1. Go to the *Wake-on-LAN Schedules* list.
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Distribution**, then click **Wake-on-LAN**.

2. Select **Choose Action** > **New** > **Simple**.
3. Select the type of device to work with:
   - **To wake devices that belong to labels, select labels in the *Labels* drop-down list.**
   - **To wake individual devices, select devices the *Managed Devices* field. To search the list, begin typing in the field.**
   - **To wake Discovered devices, select devices in the *Discovered Devices* field. To search the list, begin typing in the field.**
4. To enter device information manually, do one of the following:
   - **In the *IP Address* field, specify the IP address of a device.**
   - **In the *Manual Entry* section, specify the MAC address of a device.**
5. Click **Run Now**.

The results at the top of the page indicate the number of devices that received the request and the labels, if any, to which those devices belong.

# Schedule Wake-on-LAN requests

Scheduling a Wake-on-LAN request is useful when you want to wake devices on a regular basis. This is useful for recurring tasks, such as performing monthly maintenance.

If you want to wake devices belonging to a different subnet, you must find a machine belonging to the device's subnet and running a KACE Agent instance, and designate that machine as a relay by assigning it a label. For more information about labels, see Setting up and using labels to manage groups of items.

1. Go to the *Wake-on-LAN Schedules* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Distribution**, then click **Wake-on-LAN**.
2. Select **Choose Action** > **New** > **Advanced**.
3. Select the type of device to work with:
   - **To choose devices that belong to labels, in the *Configure* section, under *Labels*, click Manage Associated Labels. In the *Select Labels* dialog box that appears, select one or more labels associated with the devices that you want to select. Close the dialog box.**
   - **To choose devices by operating system, click Manage Operating Systems. In the Operating Systems dialog box that appears, select the OS versions in the navigation tree, as applicable.**

     You have an option to select OS versions by their family, product, architecture, release ID, or build version. You can choose a specific build version, or a parent node, as needed. Selecting a parent node in the tree automatically selects the associated child nodes. This behavior allows you to select any future OS versions, as devices are added or upgraded in your managed environment. For example, to select all build current and future versions associated with the Windows 10 x64 architecture, under **All** > **Windows** > **Windows 10**, select **x64**.
4. To wake a device that belongs to a different subnet, select a relay machine.
   a. In the *Configure* section, under *Relay Labels*, click **Manage Associated Labels**.
   b. In the *Select Labels* dialog box that appears, select the label associated with the relay device.
   c. Close the dialog box.
5. On the *Wake-on-LAN Settings* page, in the *Schedule* section, specify the schedule settings:

| Option | Description |
|---|---|
| **None** | Run in combination with an event rather than on a specific date or at a specific time. |
| **Every n hours** | Run at a specified interval. |
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |
| **Run on the nth of every month/ specific month at HH:MM** | Run on the same day every month, or a specific month, at the specified time. |
| **Run on the nth weekday of every month/specific month at HH:MM** | Run on the specific weekday of every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>`* * * * *`<br>`\| \| \| \| +————————day of week (0-6)(Sun=0)`<br>`\| \| \| +————————month (1-12)`<br>`\| \| +————————day of month (1-31)`<br>`\| +————————hour (0-23)`<br>`+————————minute (0-59)`<br>Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (/)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3.<br>Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |

| Option | Description |
|---|---|
| **View Task Schedule** | Click to view the task schedule. The *Task Schedule* dialog box displays a list of scheduled tasks. Click a task to review the task details. For more information, see View task schedules. |

6. Click **Save**.

The *Wake-on-LAN* page appears with the scheduled request listed.

## Troubleshooting Wake-on-LAN

Under certain conditions, a Wake-on-LAN request might fail.

Conditions that might cause Wake-on-LAN failures include:

- The device does not have a Wake-on-LAN-capable network card or is not configured properly.
- The appliance has incorrect information about the subnet to which the device is attached.
- UDP traffic is not routed between subnets or is being filtered by a network device.
- Broadcast traffic is not routed between subnets or is being filtered by a network device.
- Traffic on port 7 is being filtered by a network device.

For more information, go to http://www.intel.com/content/www/us/en/support/network-and-i-o/ethernet-products/000005793.html.

# Exporting Managed Installations

If you have multiple organizations or appliances, you can export Managed Installations and transfer them among organizations and appliances as needed.

See About importing and exporting resources.

# Broadcasting alerts to managed devices

You can send messages to users by broadcasting alerts, which are displayed as pop-up messages, on Agent-managed devices.

Displaying alerts is useful when you need to communicate urgent information, or notify users before running actions or scripts on their devices.

In addition, you can create email notifications that can be sent automatically when specified criteria are met. See Scheduling notifications.

**NOTE:** Displaying a message on a managed device requires a connection between the Agent and the appliance. For information about Agent connections, see Configuring Agent settings.

**NOTE:** This type of alert is generated at the appliance, to be broadcast to Agent-managed devices. The other type of alert is the monitoring alert, which comes into the appliance from your server devices if you have enabled monitoring on them to perform basic performance monitoring. See Monitoring servers.

# Create alerts to be broadcast

You can create and schedule alerts to be broadcast to Agent-managed devices as needed.

1. Go to the *Alert Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Distribution**, then click **Alerts**.
    c. Select **Choose Action > New**.
2. Provide the following information:

| Option | Description |
|---|---|
| **Message** | Type the content of the alert to be displayed. The message can contain up to 500 characters. |
| **All Devices** | Display the message on all devices whose KACE Agents are connected to the appliance. |
| **Urgent** | Display the message in the center of the screen, without allowing the user to move it, or to send it to the background. The alert must be addressed before any work can continue. |
| **Devices** | Display the message on specified devices. Use **Ctrl**-click or **Command**-click to select multiple devices. |
| **Labels** | Display the message only on devices assigned to selected labels. click **Manage Associated Labels** to select device labels. Use **Ctrl**-click or **Command**-click to select multiple labels. |
| **Expiration** | Specify the length of time for the message to be valid. When target devices are connected to the appliance, the message is broadcast and is displayed until the user acknowledges the message by clicking **OK**.<br>**NOTE:** If a device is not connected to the appliance, the alert message is sent to the Agent Command Queue, and it remains there until the device connects to the appliance. When the target device connects, the message appears regardless of whether the *Expiration* time has elapsed. |

3. In the *Schedule* section, specify the schedule settings:

| Option | Description |
|---|---|
| **None** | Run in combination with an event rather than on a specific date or at a specific time. |
| **Every** | Run every number of set hours. |
| **Run Every day/ specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |
| **Run on the nth of every month/** | Run on the same day every month, or a specific month, at the specified time. |

| Option | Description |
|---|---|
| **specific month at HH:MM** | |
| **Run on the nth weekday of every month/specific month at HH:MM** | Run on the specific weekday of every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>`* * * * *`<br>`\| \| \| \| +————————day of week (0-6)(Sun=0)`<br>`\| \| \| +————————month (1-12)`<br>`\| \| +————————day of month (1-31)`<br>`\| +————————hour (0-23)`<br>`+————————minute (0-59)`<br>Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (/)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3.<br>Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |
| **View Task Schedule** | Click to view the task schedule. The *Task Schedule* dialog box displays a list of scheduled. Click a task to review the task details. For more information, see View task schedules. |

4. Click **Save**.

# Running scripts on managed devices

You can create scripts and run them on managed devices to automate tasks and configure settings.

# About scripts

Scripts provide a point-and-click interface to perform tasks that typically require a manual process or advanced programming. You can create scripts and run them to perform tasks on target devices across your network.

Scripts automate tasks such as:

- Configuring power management settings
- Installing software
- Checking antivirus status
- Changing registry settings
- Scheduling software deployment

You can create these types of scripts:

| Option | Description |
|---|---|
| **Offline KScripts** | Scripts that run at a scheduled time, based on the target device's clock. Offline KScripts can run even when target devices are not connected to the appliance, such as when devices start up or when users log in. You can create these scripts using the scripting templates. |
| **Online KScripts** | Scripts that run only when a target device is connected to the appliance. Online KScripts run at scheduled times based on the appliance clock. You can create these scripts using the scripting templates. |
| **Online shell scripts** | Scripts that run at scheduled times based on the appliance clock, but that run only when the target device is connected to the appliance. Online shell scripts are created using simple text-based scripts, such as Bash, Perl, batch, and so on, that are supported by the target device's operating system. Batch files are supported on Windows, along with the different shell script formats supported by the specific operating system of the target devices. |

Each script consists of:

- Metadata.
- Dependencies, including any supporting executable files that are necessary to run a script, for example, ZIP and BAT files.
- Rules to obey, such as offline KScripts and online KScripts.
- Tasks to complete, such as offline KScripts and online KScripts. Each script can have any number of tasks, and you can configure whether each task must complete successfully before the next one runs.
- Deployment settings.
- Schedule settings.

# Obtaining script dependencies

Script dependencies include files and other items that are used by scripts. If scripts have dependencies, and those dependencies are present on target devices, those dependencies are used. Otherwise, scripts look for dependencies on repositories in a specified order.

Scripts obtain dependencies from the target device and repositories in the following order:

1. The target device

2. An alternate download location (KACE_ALT_LOCATION)
3. A Replication Share
4. The appliance

**NOTE:** For information about alternate download locations and Replication Shares, see Distributing packages from alternate download locations and Replication Shares.

# Tracking changes to scripting settings

If History subscriptions are configured to retain information, you can view the details of the changes made to settings, assets, and objects.

This information includes the date the change was made and the user who made the change, which can be useful during troubleshooting. See About history settings.

# About default scripts

Default scripts are pre-configured scripts you can use to force devices to report inventory, enable and disable debugging on devices, shutdown devices, and perform other tasks on devices remotely.

**Table 27. Default scripts**

| Script Name | Description |
|---|---|
| Defragment the C: drive | Defragments drive C on the device. |
| Force Check-In | Forces Windows devices with the KACE Agent installed to take inventory and sync with the appliance.<br>**IMPORTANT: Do not run Force Check-In with more than 50 devices selected because it can overload the appliance with requests.** |
| Force Check-In (Mac/Linux) | Force Mac and Linux devices with the KACE Agent installed to take inventory and sync with the appliance.<br>**IMPORTANT: Do not run Force Check-In with more than 50 devices selected because it can overload the appliance with requests.** |
| Inventory Startup Programs Fix | On some devices, a missing registry entry causes all the contents of the system32 directory to be reported as Startup Programs. This script fixes the registry entry if it is missing. |
| Issue a DOS Command Example | Issues the `DOS-DIR` command on a Windows device. Used as an example for how to run a DOS command. |
| Issue a Mac Command Example | Issues the `AppDir.txt` command to list the contents of the Mac OS X Applications directory. Used as an example of how to run a command on Mac OS X. |
| K1000 Enable Detailed DDPE Inventory (Windows) | Sets a registry key that causes the Dell Data Protection \| Encryption agent to write policy data to the file system, which enables the KACE Agent to perform more detailed inventory collection. Windows PowerShell 2.0 or higher is required. |

| Script Name | Description |
|---|---|
| K1000 Remote Control Disabler | Disables the appliance Remote Control functionality on Windows XP Professional by configuring Terminal Services properly. |
| K1000 Remote Control Enabler | Enables the appliance Remote Control functionality on Windows XP Professional by configuring Terminal Services properly. |
| Make Removable Drives Read-Only | Allows removable drives to be mounted only as read-only. This action controls unauthorized access to data. |
| Make Removable Drives Read-Write | Sets the properties of removable drives so that they can be mounted as read-write enabled. |
| Message Window Script Example | Illustrates the use of the Message Window. Your script must have properly paired create/destroy Message Window commands to work properly. The Message Window appears until one of the following occurs:<br>• The user dismisses the message.<br>• The script runs to completion.<br>• A timeout period expires. |
| Put a Mac to sleep | Places a Mac OS X device in Sleep mode.<br>**NOTE:** This script works with Mac OS X 10.5 and higher. It does not work with earlier versions of Mac OS X. |
| Reset KUID | Deletes the registry key that identifies a Windows device so that a new key can be generated. Runs once per device using the `ResetKUIDRunOnce` registry flag. |
| Shutdown a Mac | Powers-off a Mac OS X device. |
| Shutdown a Mac with snooze | An example online KScript that uses the **Alert user before run** feature to allow administrators to snooze the shutdown. |
| Shutdown a Windows system | Specifies a delay (in seconds) while the message in quotes is displayed to the user. Omit the `-t` parameter to silently and immediately shut down devices. |
| Shutdown a Windows system with Snooze | An example online KScript that uses the **Alert User Before Run** feature to allow the administrator to snooze the shutdown. |
| USB Drives Disable | Disables the use of USB drives. |
| USB Drives Enable | Enables the use of USB drives. |

# Adding and editing scripts

You can add or edit scripts using the Administrator Console.

To add and edit scripts, do one of the following:

- Import an existing script in XML format. See Structure of importable scripts.
- Duplicate an existing script. See Duplicate scripts.
- Create a script. See Add offline KScripts, online KScripts, or online shell scripts.

**TIP:** The process of creating scripts is an iterative one. After creating a script, deploy it to a limited number of devices to verify that it runs as expected before deploying it to all managed devices. You can create a test label to do this verification. Enable scripts only after you have tested them.

# Token replacement variables

Use token replacement values to add variables to scripts. The following list shows the token replacement values that can be used in the XML of scripts. At run time, these variables are replaced on the device with the appropriate values.

**Table 28. Token replacement values**

| Item | Description |
|---|---|
| **$(KACE_DEPENDENCY_DIR)** | This is the folder where any script dependencies for this script are downloaded to the client.<br>**5.2 or higher**: `$(KACE_DATA_DIR)\kbots_cache\packages\kbots\xxx`<br>**5.1**: `$(KACE_INSTALL)\packages\kbots\xxx` |
| **$(KACE_SYS_DIR)**<br>**$(KBOX_SYS_DIR)** | Agent device's system directory.<br>Both are synonymous. Preferred: **$(KACE_SYS_DIR)**.<br>**Windows**: `C:\Windows\System32`<br>**Mac OS X**: `/`<br>**Linux**: `/` |
| **$(KACE_MAC_ADDRESS)**<br>**$(MAC_ADDRESS)**<br>**$(KBOX_MAC_ADDRESS)** | Agent device's primary Ethernet MAC address.<br>All are synonymous. Preferred: **$(KACE_MAC_ADDRESS)** |
| **$(KACE_IP_ADDRESS)**<br>**$(KBOX_IP_ADDRESS)** | Agent's local IP address (corresponds with network entry of KACE_MAC_ADDRESS) (`http://kace.kbox.com:80`).<br>Both are synonymous. Preferred: **$(KACE_IP_ADDRESS)** |
| **$(KACE_SERVER_URL)** | Combination of server, port, and URL prefix. (http://kace.kbox.com:80) |
| **$(KACE_SERVER)** | Hostname of appliance server. (kbox) |
| **$(KACE_SERVER_PORT)** | Port to use when connecting to the appliance server. (80/433) |

| Item | Description |
|---|---|
| **$(KACE_SERVER_URLPREFIX)** | Web protocol to use when connecting to the appliance server. (http/https) |
| **$(KACE_COMPANY_NAME)** | Agent's copy of the setting from server's config page. |
| **$(KACE_KUID)**<br>**$(KBOX_MACHINE_ID)** | The unique Quest KACE ID assigned to this Agent.<br>Both are synonymous. Preferred: **$(KACE_KUID)** |
| **$(KACE_APP_DIR)** | Installation directory for the Quest KACE Agent and plugins.<br>For older Agents this is mapped to **$(KACE_INSTALL)**.<br>**Windows**: `C:\Program Files\Quest\KACE\` or `C:\Program Files (x86)\Quest\KACE\`<br>**Mac OS**: `/Library/Application Support/Quest/KACE/bin`<br>**Linux**: `/opt/quest/kace/bin` |
| **$(KACE_DATA_DIR)** | Installation directory for executables, scripts, packages, and so on.<br>For older Agents this is mapped to **$(KACE_INSTALL)**.<br>**Windows Vista and later**: `C:\ProgramData\Quest\KACE\`<br>**Mac OS**: `/Library/Application Support/Quest/KACE/data`<br>**Linux**: `/var/quest/kace` |
| **$(KACE_AGENT_VERSION)** | Substitutes the version number of the installed Agent. "5.2.12345".<br>**5.2 or higher only**. |
| **$(KACE_AGENT_ARCH)** | Substitutes the architecture of the installed Agent. "x86/x64".<br>**5.2 or higher Windows only**. |
| **$(KACE_HARDWARE_ARCH)** | Substitutes the architecture of the physical hardware. "x86/x64".<br>**5.2 or higher Windows only**. |
| **$(KACE_OS_FAMILY)** | Substitutes Windows, Mac, or Linux depending on the operating system of the Agent-managed device.<br>**5.2 or higher only**. |
| **$(KACE_OS_ARCH)** | Substitutes x86 or x64 depending on the installed version of Microsoft Windows.<br>**5.2 or higher Windows only**. |

# Add offline KScripts, online KScripts, or online shell scripts

You can add KScripts, specify the devices on which you want to run the scripts, and schedule scripts to run as needed.

Offline and online KScripts include one or more tasks. Within each *Task* section, there are *Verify* and *Remediation* sections where you can further define the script behavior. If a section is blank, it defaults to *Success*.

1. Go to the *Script Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Scripting**, then click **Scripts**.
    c. Select **Choose Action** > **New**.
2. In the *Configure* section, specify script settings:

| Option | Description |
|---|---|
| **Name** | A meaningful name for the script that distinguishes it from others on the *Scripts* list.<br>**TIP:** You can enable or disable one or more scripts on the *Scripts* page. To do that, select them in the table, click , then click **Enable** or **Disable**, as required. |
| **Enabled** | Whether the script is enabled to run on the target devices. Do not enable a script until you are finished editing and testing it and are ready to run it. Enable the script on a test label before you enable it on all devices. |
| **Category** | The script category. Choose an existing category from the drop-down list, or click **New Category** to add a category. If you do not to assign a category to this script, ensure this field is set to **None**.<br>**TIP:** You can assign a category to one or more scripts on the *Scripts* page. To do that, select them in the table, click **Choose Action** > **Category**, then select a category in the list. |
| **Type** | The script type. Script types include:<br>• **Online KScripts**: Scripts that run only when a target device is connected to the appliance. Online KScripts run at scheduled times based on the appliance clock. You can create these scripts using the scripting templates.<br>• **Offline KScripts**: Scripts that run at a scheduled time, based on the target device's clock. These scripts can run even when target devices are not connected to the appliance, such as when devices start up or when users log in. You can create these scripts using the scripting templates.<br>• **Online shell scripts**: Scripts that run at scheduled times based on the appliance clock, but that run only when the target device is connected to the appliance. Online shell scripts are created using simple text-based scripts, such as Bash, Perl, batch, and so on, that are supported by the target device's operating system. Batch files are supported on Windows, along with the different shell script formats supported by the specific operating system of the target devices. PowerShell scripts are also supported on Windows-based target devices. |

| Option | Description |
|---|---|
| | **IMPORTANT: You must ensure the proper file extension is associated with the script to enable it to run on the target OS. For example, you can run `.sh` scripts on Mac and Linux devices, and `.ps1` PowerShell scripts on Windows devices.** |
| **Status** | Whether the script is in development (**Draft**) or has been rolled out to your network (**Production**). Use the **Template** status if you are building a script to use as the basis for future scripts. |
| **Description** | (Optional) A brief description of the actions the script performs. This field helps you to distinguish one script from another on the *Scripts* list. |
| **Notes** | Any additional information you want to provide. |

3. In the *Deploy* section specify deployment options:

| Option | Description |
|---|---|
| **All Devices** | Deploy to all devices. Clear the check box to limit the deployment to specific labels or devices. |
| **Labels** | Limit deployment to devices that belong to specified labels. To select labels, click **Edit**, drag labels to the *Limit Deployment to* window, then click **Save**.<br>If you select a label that has a Replication Share or an alternate download location, the appliance copies digital assets from that Replication Share or alternate download location instead of downloading them directly from the appliance.<br>**NOTE:** The appliance uses a Replication Share before it uses the KACE Alt Location. |
| **Devices** | Limit deployment to one or more devices. To find devices, begin typing in the field. |
| **Operating Systems** | The operating systems on which the application runs. Applications are deployed only to devices with the selected operating systems.<br>a. Click **Manage Operating Systems**.<br>b. In the **Operating Systems** dialog box that appears, select the OS versions in the navigation tree, as applicable.<br>You have an option to select OS versions by their family, product, architecture, release ID, or build version. You can choose a specific build version, or a parent node, as needed. Selecting a parent node in the tree automatically selects the associated child nodes. This behavior allows you to select any future OS versions, as devices are added or upgraded in your managed environment. For example, to select all build current and future versions associated with the Windows 10 x64 architecture, under **All** > **Windows** > **Windows 10**, select **x64**. |

4. Specify *Windows Run As* settings (for online shell scripts and KScripts that run on Windows devices only):

| Option | Description |
|---|---|
| **Local System** | Run the script with administrative privileges on the local device. Use this setting for all scripts created with a template. |
| **Logged-in user** | Run the script as the user who is logged in to the local device. This affects the user's profile. |

| Option | Description |
|---|---|
| **All logged-in users** | Run the script once for every user that is logged in to the device. This affects the profiles of all users. |
| **Credentials** | Run the Online Shell Script and KScripts in the context of credentials that are specified here. Select existing credentials from the drop-down list, or select **Add new credential** to add credentials not already listed.<br>See Add and edit User/Password credentials.<br>**NOTE:** When running online KScripts on Windows devices, message windows are not displayed on target devices when you select the option to run the script as a specific credentialed user. To display message windows, run the script as Local System, Logged-in user, or All logged-in users. |

5. In the *User Notify* section, specify user alert settings. Alerts are available only for online KScripts and online shell scripts on Windows and Mac devices running the KACE Agent version 5.1 and higher:

| Option | Description |
|---|---|
| **Alert User Before Run** | Allow the user to run, cancel, or delay the action. This is especially important when reboots are required. If no user is logged in, the script runs immediately. |
| **Options** | Options presented to the user in the alert dialog (available when you select **Alert user before run**):<br>• **OK**: Run immediately.<br>• **Cancel**: Cancel until the next scheduled run.<br>• **Snooze**: Prompt the user again after the *Snooze Duration*.<br>If the time specified in the *Timeout* elapses without a user response, the script runs at that time.<br>Interaction with *Run As*:<br>• Only the console user can see the alert dialog, and therefore choose to Snooze or Cancel, regardless of the *Run As* setting.<br>• Enabling an alert prompts the console user even if the script is set to run as all users or another user. |
| **Timeout** | The amount of time, in minutes, for the dialog to be displayed before an action is performed. If this time period elapses without the user pressing a button, the appliance performs the action specified in the *Timeout* drop-down list. |
| **Timeout Action** | The action to be performed when the **Timeout** period elapses without the user choosing an option. |
| **Snooze Duration** | The amount of time, in minutes, for the period after the user clicks **Snooze**. When this period elapses, the dialog appears again. |
| **Initial Message** | The message to be displayed to users before the action runs.<br>To customize the logo that appears in the dialog, see Configure appliance General Settings without the Organization component. |

6. In the *Schedule* section, specify run options:

| Option | Description |
|---|---|
| **None** | Run in combination with an event rather than on a specific date or at a specific time. |
| **Every n hours** | Run at a specified interval. |
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |
| **Run on the nth of every month/ specific month at HH:MM** | Run on the same day every month, or a specific month, at the specified time. |
| **Run on the nth weekday of every month/specific month at HH:MM** | Run on the specific weekday of every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>`* * * * *`<br>`\| \| \| \| +————————day of week (0-6)(Sun=0)`<br>`\| \| \| +————————month (1-12)`<br>`\| \| +————————day of month (1-31)`<br>`\| +————————hour (0-23)`<br>`+————————minute (0-59)`<br>Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (/)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3.<br>Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |

| Option | Description |
|---|---|
| **View Task Schedule** | Click to view the task schedule. The *Task Schedule* dialog box displays a list of scheduled tasks. Click a task to review the task details. For more information, see View task schedules. |

7. In the *Schedule Options* section, select the applicable options.

| Option | Description |
|---|---|
| **Also run once at next device checkin** (for offline KScripts only) | Runs the offline KScript once when new scripts are downloaded from the appliance. |
| **Also Execute before login** (for offline KScripts only) | Runs the offline KScript when devices start up. This might cause devices to start up more slowly than normal.<br>**NOTE:** If a device has an Active Directory or Group Policy Object setting that displays a message that the user must acknowledge before logging on, scripts do not run until the message is acknowledged. |
| **Also Execute after login (before desktop loads)** (for offline KScripts only) | Runs the offline KScript after users enter Windows login credentials. |
| **Allow run while disconnected** (for offline KScripts only) | Allows the offline KScript to run even if the target device cannot contact the appliance to report results. In such a case, results are stored on the device and uploaded to the appliance during the next connection. |
| **Allow run without a logged-in user** | Allows the script to run even if a user is not logged in. To run the script only when the user is logged in to the device, clear this option. |
| **Run on next connection if offline** | For online KScripts or Shell Scripts, this option enables the script to run on offline machines when they become online again.<br>When a script runs, it calculates the number of machines it is supposed to run on based on their labels, or their operating systems, or by manually identifying selected machines. Given that set of machines, the script then determines which of those machines are currently online, and then queues up a task for the online machines in the Konductor.<br>When you select this option, the script skips the step that identifies online machines and it runs on the online machines. For the offline machines, the task is added to the Konductor's queue, and it runs when those machine become online.<br>Any subsequent tasks for running the same script (for example, for an offline machine that already exists in the Konductor's queue) overwrite the existing tasks, so there can never be more than one task in the Konductor's queue for the same machine.<br>Having a high number of tasks in the Konductor may affect the appliance's performance, so the best practice is to use offline scripts for those machines that are typically offline, and only use this option with online scripts when the target machines are expected to be online, to avoid an overpopulating the Konductor's queue.<br>By default, this option is disabled. |

8. To upload files required by the script:

a. In the *Dependencies* section, click **Add new dependency**.
b. Click **Browse** or **Choose File**.
c. Select a file, then click **Open** or **Choose**.

**If a Replication Share is specified and enabled, the dependencies are downloaded from the specified Replication Share.**

**NOTE:** If the Replication Share is inaccessible, the dependencies are downloaded from the appliance. To enable this setting, select the *Failover To Appliance* check box on the *Replication Schedule Detail* page. See Create Replication Shares.

Repeat this step to add dependencies as needed.

9. **Online or Offline KScripts only**. In the *Tasks* section, click **New Task** to add a task.

**The process flow of a task is a script similar to the following:**

```
IF Verify THEN
            Success
ELSE IF Remediation THEN
            Remediation Success
ELSE
            Remediation Failure
```

a. In the *Policy* or *Job Rules* section, specify the following settings for Task 1:

| Option | Description |
|---|---|
| **Attempts** | Enter the number of times the appliance attempts to run the script.<br>If the script fails but remediation is successful, you might want to run the task again to confirm the remediation step. To do this, set the number of attempts to 2 or more. If the *Verify* section fails, the script runs the number of times specified in this field. |
| **On Failure** | • Select **Break** to stop running upon failure.<br>• Select **Continue** to perform remediation steps upon failure. |

b. In the *Verify* section, click **Add** to add a step, then select one or more steps to perform.

**See Adding steps to task sections of scripts.**

c. In the *On Success* and *Remediation* sections, select one or more steps to perform.

**See Adding steps to task sections of scripts.**

d. In the *On Remediation Success* and *On Remediation Failure* sections, select one or more steps to perform.

**See Adding steps to task sections of scripts.**

**TIP:** To remove a dependency, click the **Delete** button next to the item: . This button appears when you mouse over an item.

**TIP:** Click the **Edit** button next to *Policy or Job Rules* to view the token replacement variables that can be used anywhere in the script: . The variables are replaced at runtime with appropriate values.

**TIP:** See Token replacement variables.

10. **Online shell scripts only**. In the *Script* section, specify the following settings:

| Option | Description |
|---|---|
| **Script Text** | Type the script contents. |

| Option | Description |
|---|---|
| **Script File Name** | Enter the name and extension of the file that will contain the specified script.<br>**IMPORTANT: You must ensure the proper file extension is associated with the script to enable it to run on the target OS. For example, you can run `.sh` scripts on Mac and Linux devices, and `.ps1` PowerShell scripts on Windows devices.** |
| **Timeout (minutes)** | Specify the maximum number of minutes the script can run on the target device. |
| **Upload File** | If the script creates a file, and you want to upload that file to the appliance, select this option, and provide the following information:<br>• **Upload File Name**: Enter the name of the file.<br>• **Upload File Directory Path**: Specify the directory where you want to store the file. If you want to use the default script directory (`<appliance_installation_directory>/scripts`), leave this field blank. |
| **Delete Downloaded Files** | If the script requires any other files to run, such as installers, and you want to delete them after the script execution, select this option. |

11. Do one of the following:
    - **Click Run Now to immediately push the script to all devices.**

      Use this option with caution. See Using the Run and Run Now commands.
    - **Click Save.**

# Edit scripts

You can edit the three types of scripts: offline KScripts, online KScripts, and online Shell Scripts. You can also edit offline KScripts and online KScripts with the XML editor.

Scoped users can view the details of all scripts, but they can save changes only to those to scripts that affect the devices or labels that are associated with their scope. For more information about scoped users, see Add or edit User Roles.

1. Go to the *Script Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Scripting**, then click **Scripts**.
   c. Display the *Script Detail* page by doing one of the following:
      - Click the name of a script.
      - Select **Choose Action** > **New**.
2. Modify the script as needed.
3. Select options for configuration, deployment, and scheduling. See Add offline KScripts, online KScripts, or online shell scripts.
4. To edit the raw XML of the script, scroll to the *Schedule* section, then click **Edit XML**.
5. Click **Save**.

# Delete scripts from the Scripts page

You can delete scripts from the Scripts page.

1. Go to the *Scripts* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Scripting**, then click **Scripts**.
2. Select the check box next to one or more scripts.
3. Select **Choose Action > Delete**, then click **Yes** to confirm.

# Delete scripts from the Script Detail page

You can delete scripts from the *Script Detail* page.

1. Go to the *Script Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Scripting**, then click **Scripts**.
    c. Click the name of a script.
2. Click **Delete**, then click **Yes** to confirm.

# Structure of importable scripts

You can create a script in an external XML editor and import it to the appliance.

Imported scripts must conform to the following structure:

- The root element `<kbots></kbots>` includes the URL of the KACE DTD `"kbots xmlns="http://kace.com/Kbots.xsd">...<kbots>`
- One or more `<kbot>` elements.
- Exactly one `<config>` element within each `<kbot>` element.
- Exactly one `<execute>` element within each `<config>` element.
- One or more `<compliance>` elements within each `<kbot>` element.

The following is an example of the XML structure for an appliance script:

```
<?xml version="1.0" encoding="utf-8" ?>
<kbots xmlns="http://kace.com/Kbots.xsd">
<kbot>
<config name="name="" type="policy" id="0" version="version="" description=
  "description="">
                        <execute disconnected="false" logged_off="false">
                        </execute>
</config>
<compliance>
</compliance>
</kbot>
</kbots>
```

In the preceding example, the `</config>` element corresponds to the *Configuration* section on the *Script Detail* page. This element is where you specify the name of the policy or job (optional), and the script type (policy or job). Within this element you can also indicate whether the script can run when the target device is disconnected or logged off from the appliance.

You can specify whether the script is enabled and describe the specific tasks the script is to perform within the <compliance> element.

**TIP:** To create a script that performs some of the same tasks as an existing script, duplicate the existing script, and open it in an XML editor. The script's <compliance> element gives you an idea of how the script works, and how you can change it. See Duplicate scripts.

## Import scripts

You can import scripts to the appliance as needed.

1. Go to the *Scripts* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Scripting**, then click **Scripts**.
2. Select **Choose Action** > **Import**.
3. Paste the existing script into the space provided, then click **Save**.

## Duplicate scripts

If there is a script that is similar to a script you want to create, you can duplicate that script and edit it as needed. Using duplication can be faster than creating a script from scratch.

1. Go to the *Script Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Scripting**, then click **Scripts**.
    c. Click the name of a script.
2. At the bottom of the page, click **Duplicate** to display the *Scripts* page.

    **The duplicated script appears on the list.**
3. Click the linked name of the duplicated script to open it for editing.

**See Edit scripts.**

# Using the Run and Run Now commands

The **Run** and **Run Now** commands enable you to run scripts on target devices immediately without setting a schedule.

Running scripts without setting a schedule is useful when:

- You suspect that devices on your network are infected with a virus or other vulnerability, and they might compromise the entire network if not resolved right away.
- You want to test and debug scripts on a specific device or a set of devices during development.

To run Online KScripts, target devices must have an Agent connection to the appliance.

**TIP:** To minimize the risk of deploying scripts to unintended devices, create a label that represents the devices on which you want to perform the **Run Now** command.

The **Run Now** command is available on these Administrator Console pages:

- *Run Now* and *Script Detail* pages: Running scripts from the *Scripting* > *Run Now* page enables you to run the selected script on target devices.
- *Scripts* page: Running scripts from the *Scripts* page using the **Run Now** option in the *Choose Action* menu enables you to run multiple scripts at the same time.
- *Mac Profile Detail*: Using the **Run Now** command on the *Mac Profile Detail* page runs a script that installs or removes the selected Mac profile on target devices that have an Agent connection to the appliance.
- *Mac Profiles*: Selecting **Choose Action > Run** on the *Mac Profiles* page runs scripts that install or remove multiple Mac profiles at the same time, provided that target devices have an Agent connection to the appliance.

**NOTE:** In case you encounter an error while running a script, refer to Error codes caused by patching and scripting for a list of error codes that may help you diagnose the issue.

# Run scripts from the Run Now page

You can run scripts on target devices from the *Run Now* page.

**CAUTION: Scripts are deployed immediately when you click Run Now.**

- Use Run Now cautiously.
- Do not click **Run Now** unless you are certain that you want to run the script on the target devices.

1. Go to the *Run Now* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Scripting**, then click **Run Now**.
2. In the *Scripts* drop-down list, select a script. To find a script, begin typing in the field.
3. In the *Deploy* section, specify deployment options:

| Option | Options and Descriptions |
|---|---|
| **Labels** | Limit deployment to devices that belong to specified labels. To select labels, click **Edit**, drag labels to the *Limit Deployment to* window, then click **Save**.<br>If you select a label that has a Replication Share or an alternate download location, the appliance copies digital assets from that Replication Share or alternate download location instead of downloading them directly from the appliance.<br>**NOTE:** The appliance uses a Replication Share before it uses the KACE Alt Location. |
| **Devices** | Limit deployment to one or more devices. To find devices, begin typing in the field. Scoped users can see only those devices that are associated with their role, when the role is assigned a label. For more information about scoping devices to user roles, see Add or edit User Roles. |

4. Click **Run Now**.

   **The *Run Now Status* page appears.**

# Run scripts from the Script Detail page

You can run scripts on target devices from the *Script Detail* page.

1. Go to the *Script Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Scripting**, then click **Scripts**.
    c. Click the name of a script.
2. Scroll to the bottom of the page, then click **Run Now**.

    **The *Run Now Status* page appears.**

# Run scripts from the Scripts page

You can run scripts from the *Scripts* page.

1. Go to the *Scripts* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Scripting**, then click **Scripts**.
2. Select the check box next to one or more scripts.
3. Select **Choose Action** > **Run Now**.

    **The *Run Now Status* page appears.**

# Monitor Run Now status and view script details

You can view the status of scripts that have been started using the **Run Now** command and access script details.

Ensure that firewall settings do not block the KACE Agent from listening on port 443.

The **Run Now** command communicates over port 443. Scripts might fail to deploy if firewall settings block the KACE Agent from listening on that port. For more information about port requirements, see Verifying port settings, NTP service, and website access.

1. Go to the *Run Now Status* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Scripting**, then click **Run Now Status**.
2. Review the information on the *Run Now Status* list.

**Information on this page includes:**

- **Started**: The time the **Run Now** command was issued.
- **Name**: The name of the script. Click this script name to view the *Run Now Detail* page.
- **Targeted**: The number of devices on which the script is scheduled to run.
- **Pushed, Running, Pending**: The number of devices on which the script is attempting to run.
- **Succeeded, Failed, Completed**: The number of devices on which the script has run.
- **Success Rate**: The percentage of scripts that ran successfully on target devices.

The numbers in the *Pushed*, *Running*, *Pending*, *Succeeded*, *Failed*, and *Completed* columns increment accordingly as the script is deployed to target devices. If errors occur in pushing the scripts to the selected devices, you can search the scripting logs to determine the cause. See Search the scripting logs.

3. Click the link in the *Started* column of a script to display the *Run Now Status Detail* page.

   **Information on this page includes:**

   - **Run Now Statistics**: The results of a script that was pushed, the push failures, push successes, completed devices, running devices, and successes and failures in numbers and percentage.
   - **Failed Deployment**: The devices that the appliance could not contact and therefore did not receive the policy. When the script is pushed, it might take some time for the device to complete a policy.
   - **Running**: The devices that have received the policy but have not reported its results. After the policy runs, it reports either success or failure. The results are sorted under the appropriate section. Each individual device page also has the results of the Run Now events run on that device.
   - **Failed Execution**: The devices on which the script failed.
   - **Successful Execution**: The devices on which the script ran successfully.

# About configuration policy templates

Configuration policy templates enable you to create policy-related scripts. These scripts can be deployed to configure policies on managed devices.

This section includes descriptions of the settings for each of the scripts you can create.

The Windows templates include:

- Add Dell Command | Monitor scripts
- Add Desktop Wallpaper scripts
- Add Desktop Shortcuts scripts
- Add Event Log Reporter scripts
- Add MSI Installer scripts
- Add Power Management scripts
- Add Registry scriptsAdd Registry scripts
- Add Remote Desktop Control Troubleshooter scripts
- Add UltraVNC scripts
- Add Uninstaller scripts

The Mac OS X templates include:

- Add Active Directory scripts
- Add Power Management scripts
- Add VNC scripts

# Using Windows configuration policies

You can create configuration policies or scripts to run on Windows devices using configuration policy templates.

**NOTE:** If you edit a template-based policy, keep the *Run As* setting as local system.

## About starting Windows Automatic Updates on Windows devices

There are several ways to start Windows Automatic Updates on Windows managed devices.

To start Windows Automatic Updates, do one of the following:

- Enable the Windows Automatic Updates Settings policy of the appliance. See .
- Enable the local policy for Windows Automatic Updates on the device.
- Modify the registry key for Windows Automatic Updates on the device.
- Set up the Group Policy on the domain for Windows Automatic Updates on the device.

If you use appliance patching to automatically deploy Windows updates on a device, you must disable Windows Automatic Updates on the device by any other process to avoid conflicts among the different deployment processes.

## About Dell Command | Monitor

Dell Command | Monitor is the monitoring tool of the Dell Command Suite. With it, a remote management application such as the appliance can perform management and monitoring activities.

Using Dell Command | Monitor gives the appliance the following abilities for certain Dell devices:

- Gain access to management information.
- Monitor device status.
- Change the state of enterprise client systems.

Earlier versions of Dell Command | Monitor were named Dell OpenManage™ Client Instrumentation (OMCI). The appliance supports only Dell Command | Monitor 9.0 or higher.

### Supported physical hardware

Dell Command | Monitor is available for the following Dell hardware.

- Dell Venue 11 Pro
- Dell OptiPlex™
- Dell Precision Workstation™
- Dell Latitude™

### Supported Microsoft operating systems

The following operating systems are supported for Dell Command | Monitor.

- Microsoft Windows 8.1 (32-bit and 64-bit), Microsoft Windows 8.1 Professional (32-bit and 64-bit), and Enterprise (32-bit and 64-bit)
- Microsoft Windows 8 (32-bit and 64-bit), Microsoft Windows 8 Professional (32-bit and 64-bit), and Enterprise (32-bit and 64-bit)
- Microsoft Windows 7, Windows 7 Service Pack 1 (SP1), Professional, Enterprise, and Ultimate x86 (32-bit) and x64 (64-bit) editions
- Microsoft Windows Vista Business SP1 x86 (32-bit) and x64 (64-bit) editions
- Microsoft Windows Vista Ultimate SP1, and SP2 x86 (32-bit) and x64 (64-bit) editions
- Microsoft Windows Vista Enterprise SP1, and SP2 x86 (32-bit) and x64 (64-bit) editions

### Classes and properties queried for information

The appliance, using Dell Command | Monitor, queries the following DCIM Windows Management Instrumentation (WMI) classes and properties.

The information returned from the queries appears in the *Dell Command | Monitor* group on the *Device Detail* page for the Dell hardware device in inventory.

You can create custom reports that collect any combination of the properties, using the report wizard. See Create reports using the report wizard.

| Class | Properties | **Report wizard** *Fields to Display* **group** | **Report wizard** *Fields to Display* **item name** |
|---|---|---|---|
| DCIM_FlatPanel | N/A | Dell Command \| Monitor - Flat Panel Display | Aspect Ratio |
| | DisplayType | | Display Type |
| | HorizontalResolution | | Horizontal Resolution |
| | PrimaryStatus | | Primary Status |
| | VerticalResolution | | Vertical Resolution |
| DCIM_DesktopMonitor | N/A | Dell Command \| Monitor - Monitor | Aspect Ratio |
| | CurrentResolutionH | | Current Horizontal Resolution |
| | CurrentResolutionV | | Current Vertical Resolution |
| | Description | | Description |
| | InputDisplayPort | | Supports DisplayPort |
| | InputDVI | | Supports DVI |
| | InputHDMI | | Supports HDMI |

| Class | Properties | Report wizard *Fields to Display* group | Report wizard *Fields to Display* item name |
|---|---|---|---|
| | ManufactureDate | | Manufacture Date |
| | N/A | | Physical Diagonal Size (cm) |
| | N/A | | Physical Diagonal Size (in) |
| | PhysicalSizeH | | Physica lHorizontal Size (cm) |
| | PhysicalSizeV | | Physical Vertical Size (cm) |
| | PrimaryStatus | | PrimaryStatus |
| | SerialNumber | | Serial Number |
| | StandbyModeSupported | | Supports Standby Mode |
| | SuspendModeSupported | | Supports Suspend Mode |
| | VeryLowPowerSupported | | Supports Very Low Power Mode |
| DCIM_VProSettings | VProCharacteristics | Dell Command \| Monitor - vPro Settings | vPro Characteristics |
| DCIM_AMTSettings | AMTSupported | Dell Command \| Monitor - AMT Settings | AMT Supported |
| | IDEREnabled | | IDE-R Enabled |
| | SOLEnabled | | SOL Enabled |
| DCIM_PhysicalMemory | BankLabel | Dell Command \| Monitor - Physical Memory | Bank Label |
| | Capacity | | Capacity (bytes) |
| | ElementName | | Name |
| | ManufactureDate | | Manufacture Date |
| | Manufacturer | | Manufacturer |
| | MemoryType | | Memory Type |
| | Model | | Model |

| Class | Properties | Report wizard *Fields to Display* group | Report wizard *Fields to Display* item name |
|---|---|---|---|
| | PartNumber | | Part Number |
| | PrimaryStatus | | Primary Status |
| | SerialNumber | | Serial Number |
| | Speed | | Speed (MHz) |
| DCIM_Processor | Caption | Dell Command \| Monitor - Processor | Caption |
| | CurrentClockSpeed | | Current Clock Speed (MHz) |
| | ElementName | | Name |
| | MaxClockSpeed | | Max Clock Speed (MHz) |
| | NumberOfEnabledCores | | Number of Cores Enabled |
| | PrimaryStatus | | Primary Status |
| | Stepping | | Stepping |
| DCIM_ProcessorCapabilities | NumberOfHardwareThreads | | Hardware Threads |
| | NumberOfProcessorCores | | Number of Cores |
| DCIM_Battery | N/A | Dell Command \| Monitor - Battery | Charge Health (%) |
| | Chemistry | | Chemistry |
| | DesignCapacity | | Design Capacity (mWh) |
| | DesignVoltage | | Design Voltage (mV) |
| | ExpectedLife | | Expected Life (minutes) |
| | FullChargeCapacity | | Full Charge Capacity (mWh) |
| | HealthState | | Health State |
| | Name | | Name |
| | PrimaryStatus | | Primary Status |
| | RechargeCount | | Recharge Count |

| Class | Properties | Report wizard *Fields to Display* group | Report wizard *Fields to Display* item name |
|---|---|---|---|
| DCIM_LogEntry | CreationTimeStamp | N/A | N/A |
| | RecordData | | |
| | RecordFormat | | |

**Hardware alerts available in reports from Dell Command | Monitor**

The following settings determine how much alert information is included in a report created with the report wizard.

| Report wizard *Fields to Display* group | Report wizard *Fields to Display* item name |
|---|---|
| Dell Command \| Monitor - Hardware Alerts | Category |
| | Description |
| | Severity |
| | Timestamp |

# Add Dell Command | Monitor scripts

Dell Command | Monitor is the monitoring tool of the Dell Command Suite. With it, a remote management application such as the appliance can perform management and monitoring activities. Using the *Dell Command | Monitor* page, you can name and save a Managed Installation for deploying or removing Dell Command | Monitor from appliance managed devices that support the tool.

You have devices with supported Dell hardware and Microsoft operating systems. See About Dell Command | Monitor.

You have downloaded Dell Command | Monitor from the Dell TechCenter at http://en.community.dell.com/techcenter/enterprise-client/w/wiki/7531.dell-command-monitor.

**NOTE:** Although this topic refers to installation, you can also use the *Dell Command | Monitor* page to remove Dell Command | Monitor from a device.

1. Go to the *Windows Dell Command | Monitor* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Scripting**, then click **Configuration Policies**.
    c. On the *Configuration Policies* panel, in the *Windows* section, click **Dell Command | Monitor**.
2. **Optional**: Change the name if you require a more precise name than the default.
3. Set the *Action*, either keep the default **Install**, or change it to **Uninstall**.
4. Click **Save** to display the *Managed Installation Detail* page with the configuration information filled in for the action you have chosen.

**The appliance automatically populates the** *Name*, *Software*, *Associated Software*, **and** *Full Command Line* **fields.**

Complete filling out the needed information on the *Managed Installation Detail* page. See Create Managed Installations for Windows devices.

# Add Desktop Wallpaper scripts

Use this template to build scripts that control the desktop wallpaper settings of Windows devices.

**The recommended format for wallpaper files is bitmap (BMP). The specified wallpaper file is distributed to devices when the script runs.**

1. Go to the *Desktop Wallpaper* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Scripting**, then click **Configuration Policies**.
    c. On the *Configuration Policies* panel, in the *Windows* section, click **Desktop Wallpaper**.
2. Provide the following information:

| Option | Description |
|---|---|
| **Name** | A name that identifies the script. This name appears on the *Scripts* page. |
| **Use wallpaper** | Display the wallpaper file on the desktop of target devices. |
| **Wallpaper bitmap file** | Click **Browse** or **Choose File** to select and upload the file to use for the wallpaper. The file must be in BMP or JPG format. |
| **Position** | Select an option in the *Position* drop-down list:<br>• **Stretch**: Stretch the image so that it covers the entire screen.<br>• **Center**: Display the image in the center of the screen.<br>• **Tile**: Repeat the image over the entire screen. |

3. Click **Save** to display the *Script Detail* page.
4. Select options for configuration, deployment, and scheduling. See Add offline KScripts, online KScripts, or online shell scripts.
5. To edit the raw XML used in the script, click **Edit XML** below the *Schedule* section.
6. Click **Save**.

# Add Desktop Shortcuts scripts

Use this template to create scripts that add Internet shortcuts to the Desktop or *Start* menu of Windows devices.

**For example, you could use this script to add a shortcut to a company website or any other URL.**

1. Go to the *Windows Desktop Shortcuts* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Scripting**, then click **Configuration Policies**.
    c. On the *Configuration Policies* panel, in the *Windows* section, click **Desktop Shortcuts**.
2. Provide the following information:

| Option | Description |
|---|---|
| **Name** | A name that identifies the script. This name appears on the *Scripts* page. |

3. Click **Add Shortcut**.
4. Specify shortcut settings:

| Option | Description |
|---|---|
| **Name** | The text label that appears below or next to the shortcut. |
| **Target** | The full path to the application, file, or URL to be launched when the shortcut is selected. For example:<br>To create shortcut for explorer.exe, use this format: `C:\WINDOWS\explorer.exe`<br>To create a shortcut from the UNC share for explorer.exe, use this format:<br>`\\192.168.1.1\WINDOWS\explorer.exe`<br>or<br>`\\HostName\WINDOWS\explorer.exe` |
| **Parameters** | The command line parameters required for the shortcut. For example:<br>`/S /IP=123.4` |
| **Working Directory** | The changes to the current working directory. For example: `C:\Windows\Temp` |
| **Location** | The location where you want the shortcut to appear. Options include: **Desktop** and **Start Menu**. |

5. Click **Save Changes** to save the shortcut.
6. Click **Add Shortcut** to add more shortcuts. To edit or delete a shortcut, hover over a shortcut and click the **Edit** button or the **Delete** button:  .
7. Click **Save** to display the *Script Detail* page.
8. Select options for configuration, deployment, and scheduling. See Add offline KScripts, online KScripts, or online shell scripts.
9. To edit the raw XML used in the script, click **Edit XML** below the *Schedule* section.
10. Click **Save**.

# Add Event Log Reporter scripts

Use this template to create scripts that query the Windows Event Log and upload the results to the appliance.

1. Go to the *Windows Event Log Reporter* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Scripting**, then click **Configuration Policies**.
    c. On the *Configuration Policies* panel, in the *Windows* section, click **Event Log Reporter**.
2. Provide the following information:

| Option | Description |
|---|---|
| **Name** | A name that identifies the script. This name appears on the *Scripts* page. |

| Option | Description |
|---|---|
| **Output File Name** | The name of the log file created by the script. |
| **Log File** | The type of log you want to query: Software, System, or Security. |
| **Event Type** | The type of event you want to query: Information, Warning, or Error. |
| **Source Name** | (Optional) The names of sources to which the query is restricted. |

3. Click **Save** to display the *Script Detail* page.
4. Select options for configuration, deployment, and scheduling. See Add offline KScripts, online KScripts, or online shell scripts.
5. To edit the raw XML used in the script, click **Edit XML** below the *Schedule* section.
6. Click **Save**.
7. To view the event log of a device, click **Inventory**, then click a device name.
8. In *Scripting Logs*, under *Currently Deployed Jobs and Policies*, click the **View logs** link next to *Event Log*.

# Add MSI Installer scripts

Use this template to create scripts that set the basic command-line arguments for running MSI-based installers on Windows devices.

**For command-line options, go to the Microsoft MSI Command-Line documentation: http://msdn.microsoft.com/en-us/library/windows/desktop/aa367988%28v=vs.85%29.aspx.**

1. Go to the *Windows MIS Installer* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Scripting**, then click **Configuration Policies**.
    c. On the *Configuration Policies* panel, in the *Windows* section, click **MSI Installer**.
2. Provide the following information:

| Option | Description |
|---|---|
| **Name** | A name that identifies the script. This name appears on the *Scripts* page. |
| **Action** | The task to be performed. Tasks include **Install**, **Uninstall**, **Repair missing files**, and **Reinstall all files**. |
| **Software** | The application to use for the script. To search for an application, begin typing in the field. |
| **MSI Filename** | The MSI filename (required if the file is a ZIP archive). |
| **User Interaction** | How the installation appears to users. Options include: **Default**, **Silent**, **Basic UI**, **Reduced UI**, and **Full UI**. |
| **Install Directory** | The directory on the target device where the application is to be installed. |
| **Additional Switches** | Any additional installer switches. Additional switches are inserted between the `msiexe.exe` and the `/i foo.msi` arguments. |

| Option | Description |
|---|---|
| **Additional Properties** | Any additional properties. These properties are inserted at the end of the command line. For example:<br>`msiexec.exe /s1 /switch2 /i patch123.msi TARGETDIR=C:\patcher PROP=A PROP2=B` |
| **Feature List** | The features to install. Use commas to separate features. |
| **Store Config per device** | Whether to store configuration information for individual devices. |
| **After install** | The action to be performed after installation. |
| **Restart Options** | The action to be performed after the device restarts. |
| **Logging** | The information to record in the installation log. Use **Ctrl**-click or **Command**-click to select multiple items. |
| **Log File Name** | The name of the log file. |

3. Click **Save** to display the *Script Detail* page.
4. Select options for configuration, deployment, and scheduling. See Add offline KScripts, online KScripts, or online shell scripts.
5. To edit the raw XML used in the script, click **Edit XML** below the *Schedule* section.
6. Click **Save**.

# About power management and power consumption

To get an overview of device power consumption, you can run power management reports for a set time, such as a month.

For more information about the *Power Management* category of reports, see Creating reports.

You can also configure the amount of time that device uptime information is retained. See Configure appliance General Settings with the Organization component enabled. This option is one of the last configuration options.

To collect information about the power use of desktop devices:

- Create a Smart Label in inventory for the chassis type.
- Create reports grouping devices by the chassis type.
- Make a Smart Label in inventory for **Uptime since last reboot** that contains time period in which you are interested.

# Add power management scripts for Windows devices

Use this template to create energy management profiles for Windows devices. Power usage settings are a trade-off between CPU usage and power usage.

On Windows devices, power management is configured using the built-in **powercfg** command.

1. Go to the *Windows Power Management* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General

Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Scripting**, then click **Configuration Policies**.

c. On the *Configuration Policies* panel, in the *Windows* section, click **Power Management**.

2. On the *Configuration Policy: Windows Power Management* page, select your target operating system.
3. Select a profile: **Balanced**, **High Performance**, **Power Saver**, or **Custom**.

**NOTE:** If you choose the *Custom* profile, and under *Hard disk* set *Turn off hard disk after (Seconds)* to '*0*' (zero), the hard disk will never turn off.

4. Click **Save** to display the *Script: Edit Detail* page.
5. Select options for configuration, deployment, and scheduling, then click **Save**. See Adding and editing scripts.

# Add Registry scripts

Use this template to create scripts that enforce registry settings on Windows devices.

1. Use `regedit.exe` to locate and export the values from the registry that you are interested in.
2. Open the .reg file that contains the registry values you want with notepad.exe and copy the text.
3. Go to the *Windows Registry* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Scripting**, then click **Configuration Policies**.
   c. On the *Configuration Policies* panel, in the *Windows* section, click **Registry**.
4. Provide the following information:

| Option | Description |
|---|---|
| **Name** | A name that identifies the script. This name appears on the *Scripts* page. |
| **Registry File** | The registry values to apply when the script runs. |

5. Click **Save** to display the *Script Detail* page.
6. Select options for configuration, deployment, and scheduling. See Add offline KScripts, online KScripts, or online shell scripts.
7. To edit the raw XML used in the script, click **Edit XML** below the *Schedule* section.
8. Click **Save**.

A new script is created, which checks that the values in the registry file match the values found on the target devices. Any missing or incorrect values are replaced.

# Add Remote Desktop Control Troubleshooter scripts

Use this template to create a troubleshooting script for the Remote Desktop Control feature on Windows devices.

This script tests the following:

- **Terminal Services**: To access a Windows device using Remote Desktop, Terminal Services must be running. This script verifies that Terminal Services is running.
- **Firewall Configuration**: If the Windows Firewall is running on the device, the script tests for configurations that might block Remote Desktop Control requests.

1. Go to the *Remote Desktop Control Troubleshooter* page:

a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
b. On the left navigation bar, click **Scripting**, then click **Configuration Policies**.
c. On the *Configuration Policies* panel, in the *Windows* section, click **Remote Desktop Control Troubleshooter**.

2. Provide the following information:

| Option | Description |
|---|---|
| **Name** | A name that identifies the script. This name appears on the *Scripts* page. |
| **Firewall Configuration** | Specify the settings to apply when the script runs. |

3. Click **Save** to display the *Script Detail* page.
4. Select options for configuration, deployment, and scheduling. See Add offline KScripts, online KScripts, or online shell scripts.
5. To edit the raw XML used in the script, click **Edit XML** below the *Schedule* section.
6. Click **Save**.

# Add UltraVNC scripts

Use this template to create a script to distribute UltraVNC to Windows devices. UltraVNC is a free application that enables administrators to log in to devices remotely.

For more information on UltraVNC, go to http://www.uvnc.com.

1. Go to the *Windows Ultra VNC* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Scripting**, then click **Configuration Policies**.
   c. On the *Configuration Policies* panel, in the *Windows* section, click **UltraVNC**.
2. Provide the following information:

| Option | Description |
|---|---|
| **Name** | A name that identifies the script. This name appears on the *Scripts* page. |
| **Install Mirror Driver** | Install the optional UltraVNC Mirror Video Driver.<br>Mirror Video Driver is a driver that allows faster and more accurate updates. It also makes a direct link between the video driver framebuffer memory and UltraWinVNC server.<br>Using the framebuffer directly eliminates the use of the CPU for intensive screen blitting, which can boost speed and reduce CPU load. |
| **Install Viewer** | Install the optional UltraVNC Viewer. Viewer is a tool used to connect to VNC servers and remotely view desktops. Install Viewer only if you need to initiate remote sessions from the managed device. |
| **Disable tray icon** | Prevent the UltraVNC tray icon from appearing on the device. |

| Option | Description |
|---|---|
| **Disable client options in tray icon menu** | Prevent client options from appearing in the tray icon menu on devices. This option is available only if **Disable Tray Icon** is enabled. |
| **Disable properties panel** | Disable the UltraVNC properties panel on devices. |
| **Block end user from closing UltraVNC** | Prevent device users to shut down WinVNC. |
| **Password** and **Read Only Password** | Provide password for authentication. |
| **Require Windows Logon** | Use Windows Logon authentication and export the ACL from your VNC® installation. Use `MSLogonACL.exe /e acl.txt`. Copy and paste the contents of the text file into the *ACL* field. |
| **Encryption Key** | Use key-based encryption. To use key-based encryption, create and upload a key:<br>a. In the UltraVNC Viewer, select the MSRC4Plugin from the DSPLugin list.<br>b. Click **Config**, then enter the full path where the key file will be placed.<br>c. Click **Gen Key**, then upload the key file. |

3. Click **Save** to display the *Script Detail* page.
4. Review the script generated by the template to verify the output.
5. Select options for configuration, deployment, and scheduling. See Add offline KScripts, online KScripts, or online shell scripts.
6. To edit the raw XML used in the script, click **Edit XML** below the *Schedule* section.
7. Click **Save**.

# Add Uninstaller scripts

Use this template to create scripts that manage applications and processes on Windows devices. Scripts can run uninstall commands, stop processes, and delete directories.

1. Go to the *Windows Uninstaller* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Scripting**, then click **Configuration Policies**.
   c. On the *Configuration Policies* panel, in the *Windows* section, click **Uninstaller**.
2. Provide the following information:

| Option | Description |
|---|---|
| **Name** | A name that identifies the script. This name appears on the *Scripts* page. |
| **Software** | The application to use for the script. To search for an application, begin typing in the field. |

| Option | Description |
|---|---|
| **File**<br>**Parameters**<br>**Directory** | The command information. When you select the application, the template attempts to provide the uninstall command directory, file, and parameters. Verify that the values are correct. |
| **Delete Directory** | The full name of the directory to be deleted after the uninstall command runs. For example: `C:\Program Files\`**Example_App**`\`. |
| **Kill Process** | The full name of the process to be stopped before the uninstall command runs. For example: `notepad.exe`. |

3. Click **Save** to display the *Script Detail* page.
4. Select options for configuration, deployment, and scheduling. See Add offline KScripts, online KScripts, or online shell scripts.
5. To edit the raw XML used in the script, click **Edit XML** below the *Schedule* section.
6. Click **Save**.

# Using Mac OS X configuration policies

You can create scripts that configure policies on Mac OS X devices using configuration policy templates.

## Add Active Directory scripts

Use this template to create scripts that add or remove devices to or from domains on Mac OS X devices. You can also use this script to ensure that Mac OS X devices check in to Active Directory databases.

When creating the script, you must specify a username and password for a network account with administrative privileges to add or remove devices to or from the specified domain.

1. Go to the *Mac Active Directory* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Scripting**, then click **Configuration Policies**.
    c. On the *Configuration Policies* panel, in the *Mac* section, click **Active Directory**.
2. Provide the following information:

| Option | Description |
|---|---|
| **Name** | A name that identifies the script. This name appears on the *Scripts* page. |
| **Action** | Specify whether you want to add or remove a device from the current domain. |
| **Network Credentials** | Enter your administrator username and password.<br>**NOTE:** The resulting script assumes that you have root access and shows your password unencrypted (clear text), so make sure that anyone using this script is trusted. |

| Option | Description |
|---|---|
| **Domain To Configure** | Specify the LDAP domain name, user authentication information, and other information. |

3. Click **Save** to display the *Script Detail* page.
4. Select options for configuration, deployment, and scheduling. See Add offline KScripts, online KScripts, or online shell scripts.
5. To edit the raw XML used in the script, click **Edit XML** below the *Schedule* section.
6. Click **Save**.

# Add Power Management scripts

Use this template to create energy management profiles for Mac OS X devices. Power usage settings are a trade-off between CPU usage and power usage.

To apply unique settings for each power source, create multiple configuration scripts. Some features might not be supported on some devices.

1. Go to the *Mac Power Management* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Scripting**, then click **Configuration Policies**.
    c. On the *Configuration Policies* panel, in the *Mac* section, click **Power Management**.
2. Provide the following information:

| Option | Description |
|---|---|
| **Name** | A name that identifies the script. This name appears on the *Scripts* page. |
| **Profile Name** | Specify the profile option to use:<br>• **Better energy savings**: Enforce settings that save energy. This might result in lower performance. When you select this setting, the options in the *Profile Options* section are not editable.<br>• **Normal**: Use the default settings. When you select this setting, the options in the *Profile Options* section are not editable.<br>• **Better Performance**: Enforce settings that optimize performance. This might result in higher energy use. When you select this setting, the options in the *Profile Options* section are not editable.<br>• **Custom**: Use custom profile options. When you select this setting, the options in the *Profile Options* section become editable. |

| Option | Description |
|---|---|
| **Power Source** | Select a power source:<br>• **All**: The policy always applies, regardless of the device's power source.<br>• **Battery**: The policy applies only when the device is using internal battery power.<br>• **Charger (Wall Power)**: The policy applies only when the device is connected to a power outlet.<br>• **UPS**: The policy applies only when the device is connected to a UPS (uninterruptable power supply). |
| **Operating System** | If you select **Custom** in the *Profile* drop-down list, specify, the operating system to which this policy applies. the *Profile Options* update to show only those options that are available to the selected version. |

3. Click **Save** to display the *Script Detail* page.
4. Select options for configuration, deployment, and scheduling. See Add offline KScripts, online KScripts, or online shell scripts.
5. To edit the raw XML used in the script, click **Edit XML** below the *Schedule* section.
6. Click **Save**.

# Add VNC scripts

Use this template to create scripts that configure the built-in VNC (Virtual Network Computing) settings on Mac OS® devices. The VNC settings determine whether viewers can control device screens.

This script also enables or disables screen sharing, which requires a username and password of an account on the Mac to connect from another Mac running Mac OS X. Use this script with caution: Although the credentials are encrypted, the VNC session might not be.

1. Go to the *Mac VNC* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Scripting**, then click **Configuration Policies**.
    c. On the *Configuration Policies* panel, in the *Mac* section, click **VNC**.
2. Provide the following information:

| Option | Description |
|---|---|
| **Name** | A name that identifies the script. This name appears on the *Scripts* page. |
| **Enabled** | Enable the policy. |
| **Password** | Provide a password for the VNC. |

3. Click **Save** to display the *Script Detail* page.
4. Select options for configuration, deployment, and scheduling. See Add offline KScripts, online KScripts, or online shell scripts.
5. To edit the raw XML used in the script, click **Edit XML** below the *Schedule* section.
6. Click **Save**.

# Edit policies and scripts

You can edit policies and scripts as needed.

1. Go to the *Script Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Scripting**, then click **Scripts**.
    c. Display the *Script Detail* page by doing one of the following:
    - Click the name of a script.
    - Select **Choose Action** > **New**.
2. Change options for configuration, deployment, and scheduling.

    **See Add offline KScripts, online KScripts, or online shell scripts.**
3. At the bottom of the page, click **click here** next to one of the following options:
    - *To re-edit the policy using the original editor*: **View and edit the initial settings available in the template.**
    - *To edit the policy using this editor*: **View and edit all settings.**
4. Edit the policy, then click **Save**.

# Search the scripting logs

You can search for text strings in the scripting logs. If the organization component is enabled on your appliance, you search scripting logs for each organization separately.

When scripts run on managed devices, logs are created and uploaded to the appliance. You can search for text strings in the scripting logs, and apply labels to devices whose logs match the search text. You can then run actions on the labeled devices as needed.

1. Go to the *Search Scripting Logs* page.
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Scripting**, then click **Search Scripting Logs**.
2. In the *Search for* field, enter the search criteria or text string you want to find. Text strings must be at least four characters in length. Searches with shorter text strings result in zero matches.

    Use the following operators when entering search criteria:

| Operator | Function |
|---|---|
| **+** | Use a leading plus sign to find entries that include the text. |
| **-** | Use a leading minus sign to find entries that do not include the text. |
| ***** | Use a trailing asterisk to find logs that contain words that begin with the specified characters. |

| Operator | Function |
|---|---|
| " | Enclose text in double quotes to find exact matches for the phrase. |

3. Select search criteria:

| Option | Description |
|---|---|
| **All uploaded logs** | Search all available scripting logs. If the Organization component is enabled on the appliance, the search searches all logs for the selected organization.<br>**NOTE:** Scripting logs are deleted during appliance upgrades. If the appliance has been upgraded, logs that were uploaded before the upgrade are no longer available. |
| **Last uploaded logs** | Search the most recent scripting logs. If the Organization component is enabled on the appliance, the search searches all logs for the selected organization. |
| **Script** | Search logs related to all scripts, or search only the specified script. |
| **Log** | Search all logs, or search only the specified log. |
| **Label** | Search for logs uploaded by all devices, or search for logs uploaded by devices associated with the specified label. |

4. Click **Search**.

   **The search results display the logs and the devices that have uploaded those logs.**
5. To apply a label to the devices that are displayed, select a label in the drop-down list under the search results.

# Exporting scripts

If you have multiple organizations or appliances, you can export scripts and transfer them among organizations and appliances as needed.

See About importing and exporting resources.

# Managing Mac profiles

You can use the appliance to distribute Mac profiles to Agent-managed devices. Mac profiles contain payloads, or configuration settings, for user-level and system-level policies.

Distributing Mac profiles using the appliance is an efficient way to configure settings on the Mac devices you manage, and it provides an alternative to configuring and distributing profiles using OS X Server.

You can configure user- and system-level Mac profile payloads, or configuration settings, in the appliance Administrator Console. In addition, you can create custom payloads using the Apple Profile Manager, download the `MOBILECONFIG` file that contains those payloads, and upload that file to the appliance for distribution.

For more information about Mac profiles, go to http://help.apple.com/profilemanager/mac/4.0.

### How the KACE Agent distributes profiles

When you add or upload a new Mac profile, the appliance creates the Online KScript required to install or remove the profile from devices. Like other Online KScripts, scripts that contain Mac profiles run when the KACE Agent is connected to the target device according to the schedule and deployment options specified in the profile.

# Tracking changes to Mac profile settings

If History subscriptions are configured to retain information, you can view the details of the changes made to settings, assets, and objects. This information includes the date the change was made and the user who made the change, which can be useful during troubleshooting.

See About history settings.

# Adding, editing, and uploading Mac profiles

You can add Mac user and system profiles to the appliance, and you can edit Mac profiles as needed. In addition, you can upload `MOBILECONFIG` files that contain the configuration information to the appliance.

## Add or edit Mac user profiles

You can add Mac user profiles to the appliance using the Administrator Console. User profiles contain configuration settings that apply to users, such as email settings. User profiles that have been added to the appliance can be deployed to Agent-managed Mac OS X devices. For the list of supported Mac OS X versions, see the *Technical Specifications* available on the product documentation page: https://support.quest.com/kace-systems-management-appliance/technical-documents.

If you are adding or editing profiles, make sure that you have the account information, server information, and port information required to configure Exchange, LDAP, or Mail payloads.

**NOTE:** You can edit the payloads of profiles you have configured in the Administrator Console. However, you cannot view or edit the payloads of profiles that have been uploaded to the Administrator Console.

1. Go to the *Mac Profile Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Scripting**, then click **Mac Profiles**.
    c. Do one of the following:
    - Click the name of a profile.
    - Click **Choose Action > New User Profile**.
2. In the *General Options* section, provide the following information:

| Option | Description |
|---|---|
| **Profile Name** | The name to be displayed on the *Mac Profiles* list. This name does not need to be unique, but it should be descriptive enough for you to identify the profile in a list. |

| Option | Description |
|---|---|
| | **NOTE:** You can change the name of a profile any time. However, if you change the name of a profile after it has been installed on a device, the profile name is not updated on the device. The profile continues to be identified by the name it had when it was installed. |
| **Description** | Additional information about the profile, such as its configuration settings or its intended use. |
| **User ability to remove profile** | Whether users can remove the profile from their devices. Options include:<br>• **Never**: Users are not allowed to remove the profile.<br>• **Always**: Users are allowed to remove the profile any time without entering a password.<br>• **With Password**: Users are allowed to remove the profile provided that they enter the password associated with the profile. |
| **Automatically remove profile** | Whether the profile will be removed automatically after a specified amount of time. This action is useful when you are configuring devices that need to have different profiles after a specific date, such as the end of a school semester. Options include:<br>• **Never**: The profile is not scheduled to be removed automatically.<br>• **On Date**: The profile is scheduled to be removed automatically on the specified date. Dates must be specified in **mm/dd/yyyy** format.<br>• **After**: The profile is scheduled to be removed after the specified amount of time has passed. Time can be specified in days or hours. |

3. **Optional**: In the *Payloads* section, add or edit configuration settings for Exchange, LDAP, or Mail.
   - Add or edit Exchange configuration information:

**NOTE:** To prompt users to enter their own information, such as their user name, email address, or password, leave fields blank. Some fields, such as *Account Name*, however, cannot be left blank.

| Option | Description |
|---|---|
| **Account Name** | The name used to identify the account. |
| **User** | The name of the user. |
| **Email Address** | The address to use for the email account. |
| **Password** | The password of the email account. |

| Option | Description |
|---|---|
| **Internal Exchange Host and Port** | The hostname of the internal Exchange server and the port used for email communication. |
| **External Exchange Host and Port** | The hostname of the external Exchange server and the port used for email communication. |
| **Internal Server Path** | The path to the server on the internal network. |
| **External Server Path** | The path to the server on the external network. |
| **Use SSL for Internal Exchange Host** | Whether to use Secure Sockets Layer for email transmitted within the domain. |
| **Use SSL for External Exchange Host** | Whether to use Secure Sockets Layer for email transmitted outside the domain. |

- Add or edit LDAP configuration information:

  **NOTE:** To prompt users to enter their own information, such as their username or password, leave fields blank. Some fields, such as *Account Hostname*, however, cannot be left blank.

| Option | Description |
|---|---|
| **Account Description** | The name of the LDAP account, such as `Example Corporation LDAP Account`. |
| **Account Username** | The username of the account to be used to log in to the LDAP server. |
| **Account Password** | The password of the account to be used to log in to the LDAP server. |
| **Account Hostname** | The hostname or IP address of the LDAP server. |
| **Use SSL** | Whether to use Secure Sockets Layer for connections to the LDAP server. |

| Option | Description |
|---|---|
| **Search Settings** | The settings used to search for information on the LDAP server. |
| • **Description** | Information that differentiates the search information in a list. |
| • **Scope** | The depth of the search. Whether the search will be conducted on:<br>• **Base**: Includes objects in the base or zero level only.<br>• **One Level**: Includes objects immediately subordinate to the base, but not including the base.<br>• **Subtree**: Includes objects in the base and subtree. |
| • **Search Base** | **Search Base**: The location in the directory from which the search begins. The Search Base specifies a location or container in the LDAP or Active Directory structure, and the criteria should include all the users that you want to authenticate. Enter the Base DN most specific combination of OUs, DCs, or CNs that match your criteria, ranging from left (most specific) to right (most general). For example, this path leads to the container with users that you need to authenticate:<br>OU=end_users,DC=company,DC=com. |

◦ Add or edit Mail configuration information:

**NOTE:** To prompt users to enter their own information, such as their display name or email address, leave fields blank. Some fields, such as *Incoming Mail Server*, however, cannot be left blank.

| Option | Description |
|---|---|
| **Account Description** | The name of the account, such as `Example Corporation Mail Account`. |
| **Account Type** | The protocol (POP or IMAP) used to access the account. |
| **User Display Name** | How the user's name appears in the *From* field in email messages. |
| **Email Address** | The user's email address. |
| **Incoming Mail Server and Port** | The hostname or IP address and port number used for incoming mail. |

| Option | Description |
|---|---|
| **Outgoing Mail Server and Port** | The hostname or IP address and port number used for outgoing mail. Use the following standard port assignments:<br>• SMTP: 25 (465 with SSL)<br>• POP3: 110 (995 with SSL)<br>• IMAP: 143 (993 with SSL) |
| **Incoming Mail User Name** | The username to use for the incoming mail server. |
| **Outgoing Mail User Name** | The username to use for the outgoing mail server. |
| **Incoming Mail Authentication Type** | The method of authenticating the user for incoming mail. Authentication types include Password, MD5 Challenge-Response, NTLM, HTTP MD5 Digest. |
| **Outgoing Mail Authentication Type** | The method of authenticating the user for outgoing mail. Authentication types include Password, MD5 Challenge-Response, NTLM, HTTP MD5 Digest. |
| **Incoming mail use SSL** | Whether to use Secure Socket Layer for mail delivered to the user account. |
| **Outgoing mail use SSL** | Whether to use Secure Socket Layer for mail sent from the user account. |

4. (Optional) In the *Deploy* section, select the target devices for the profile:

**TIP:** You can create a profile without selecting target devices. However, profiles cannot be deployed until target devices are selected.

| Option | Description |
|---|---|
| **All Devices** | Distribute the profile to all KACE Agent-managed devices running a supported version of Mac OS X (version 10.8, 10.9, or 10.10). If the Organization component is enabled on your appliance, this distribution includes all supported Mac devices in the selected organization. |
| **Labels** | Distribute the profile only to the devices in the labels that you select. Limiting the distribution to labels, especially Smart Labels, helps to ensure that profiles are applied appropriately.<br>To use this option, you must already have created labels or Smart Labels. See Adding Smart Labels for devices. |
| **Devices** | Distribute the profile to the supported Mac OS X devices that you select (version 10.8, 10.9, or 10.10). To search for devices, begin typing in the field. |

| Option | Description |
|---|---|
| **Operating Systems** | The operating systems on which the application runs. Applications are deployed only to devices with the selected operating systems.<br>a. Click **Manage Operating Systems**.<br>b. In the **Operating Systems** dialog box that appears, select the OS versions in the navigation tree, as applicable.<br>You have an option to select OS versions by their family, product, architecture, release ID, or build version. You can choose a specific build version, or a parent node, as needed. Selecting a parent node in the tree automatically selects the associated child nodes. This behavior allows you to select any future OS versions, as devices are added or upgraded in your managed environment. For example, to select all build current and future versions associated with a Mac 10.11 El Capitan x86 architecture, under **Mac > 10.11 El Capitan**, select **x86**. |
| **Remove All** | Remove all selected devices from the *Devices* list in this section. |

5. In the *Schedule* section, select the options for distributing the profile to target devices:

| Option | Description |
|---|---|
| **None** | Do not distribute the profile on a schedule. Profiles that have their schedules set to **None** have a status of **Disabled** on the *Mac Profiles* list. However, profiles whose schedule is set to **None** can still be deployed if you select **Run Now** at the bottom of the page. |
| **Every n minutes/ hours** | Run at a specified interval. |
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |
| **Run on the nth of every month/ specific month at HH:MM** | Run on the same day every month, or a specific month, at the specified time. |
| **Run on the nth weekday of every month/specific month at HH:MM** | Run on the specific weekday of every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>`* * * * *`<br>`\| \| \| \| +————————day of week (0-6)(Sun=0)`<br>`\| \| \| +———————month (1-12)`<br>`\| \| +————————day of month (1-31)`<br>`\| +———————hour (0-23)` |

| Option | Description |
|---|---|
| | `+————————minute (0-59)`<br>Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (/)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3.<br>Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |
| **View Task Schedule** | Click to view the task schedule. The *Task Schedule* dialog box displays a list of scheduled. Click a task to review the task details. For more information, see View task schedules. |

6. In the *Deployment Options* section, select the options for prompting users about the profile installation:

| Option | Description |
|---|---|
| **Runtime prompt for logged-in users** | When the Agent begins the profile installation, a prompt is displayed to users who are logged in to the target device. |
| **Login prompt for all users** | Whenever users log in to the target device, they are prompted to install the profile if they have not done so already. |
| **Both runtime and login prompts** | When the Agent begins the profile installation, users who are logged in to the target device are prompted to install the profile if they have not done so already. Users who log in after the script runs are also prompted to install the profile. |

7. At the bottom of the page, select one of the following actions:

| Option | Description |
|---|---|
| **Save** | Save the profile and return to the *Mac Profiles* list. |
| **Run Now** | On target devices that have an active Agent connection to the appliance, install the profile now according to the selected deployment options. See Using the Run and Run Now commands. |

| Option | Description |
|---|---|
| **Duplicate** | Create a copy of the profile with `Copy of` prepended to the profile name. This option is not available for new profiles that have not yet been saved. See Add Mac profiles using existing profiles as templates. |
| **Remove** | Create a profile that can be used to remove the profile from target devices. This option is not available for new profiles that have not yet been saved. See Remove Mac profiles from managed devices. |
| **Delete** | Remove the profile from the appliance. This does not remove the profile from devices on which it is installed, and this option is not available for new profiles that have not yet been saved. See Delete Mac profiles from the appliance. |
| **Cancel** | Discard changes and return to the *Mac Profiles* list. |

# Add or edit Mac system profiles

You can add Mac system profiles to the appliance using the Administrator Console. System profiles contain configuration settings that apply to devices, such as passcode requirements. System profiles that have been added to the appliance can be deployed to Agent-managed Mac OS X devices. For the list of supported Mac OS X versions, see the *Technical Specifications* available on the product documentation page: https://support.quest.com/kace-systems-management-appliance/technical-documents.

You have established policies for accessing apps and setting passcodes.

**NOTE:** You can edit the payloads of system profiles you have configured in the Administrator Console. However, you cannot view or edit the payloads of profiles that have been uploaded to the Administrator Console.

1. Go to the *Mac Profile Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Scripting**, then click **Mac Profiles**.
    c. Do one of the following:
    - Click the name of a profile.
    - Click **Choose Action** > **New System Profile**.
2. In the *General Options* section, provide the following information:

| Option | Description |
|---|---|
| **Profile Name** | The name to be displayed on the *Mac Profiles* list. This name does not need to be unique, but it should be descriptive enough for you to identify the profile in a list.<br>**NOTE:** You can change the name of a profile any time. However, if you change the name of a profile after it has been installed on a device, the profile name is not updated on the device. The profile continues to be identified by the name it had when it was installed |

| Option | Description |
|---|---|
| **Description** | Additional information about the profile, such as its configuration settings or its intended use. |
| **User ability to remove profile** | Whether users can remove the profile from their devices. Options include:<br>• **Never**: Users are not allowed to remove the profile.<br>• **Always**: Users are allowed to remove the profile any time without entering a password.<br>• **With Password**: Users are allowed to remove the profile provided that they enter the password associated with the profile. |
| **Automatically remove profile** | Whether the profile will be removed automatically after a specified amount of time. This is useful when you are configuring devices that need to have different profiles after a specific date, such as the end of a school semester. Options include:<br>• **Never**: The profile is not scheduled to be removed automatically.<br>• **On Date**: The profile is scheduled to be removed automatically on the specified date. Dates must be specified in **mm/dd/yyyy** format.<br>• **After**: The profile is scheduled to be removed after the specified amount of time has passed. Time can be specified in days or hours. |

3. In the *Payloads* section, add or edit *Gatekeeper* configuration information.

| Option | Description |
|---|---|
| **Allow Apps Downloaded From** | Whether users are allowed to download apps from:<br>• **Mac App Store**: Users can download apps only from the Mac App Store.<br>• **Mac App Store and Identified Developers**: Users can download apps from the Mac App Store and from developers who have digitally signed their apps with a unique Developer ID from Apple.<br>• **Anywhere**: Users can download apps from anywhere without restriction. |
| **Don't allow user to override Gatekeeper setting** | Whether users are allowed to modify the app download settings. |

4. Add or edit *Passcode* configuration information.

**NOTE:** In this section, the term **passcode** is synonymous with the term **password**.

| Option | Description |
|---|---|
| **Allow simple value** | Allow users to select passcodes with character sequences that are repeating, ascending, and descending. |
| **Require alphanumeric value** | Require users to select passcodes that contain at least one letter and one number. |
| **Minimum passcode length** | The smallest number of characters allowed in passcodes. |
| **Minimum number of complex characters** | The smallest number non-alphanumeric characters, such as *or ! allowed in passcodes. |
| **Maximum number of failed attempts** | The number of times users can enter incorrect passcodes to unlock devices before being locked out of their accounts. |
| **Maximum grace period for device lock** | When system settings specify that devices should be locked after a period of inactivity, this setting provides a window of time during which users can unlock their devices without entering their passcodes. After the grace period expires, users must enter their passcodes to unlock devices. |
| **Maximum passcode age in days** | The number of days after which passcodes must be changed. |
| **Passcode history** | The number of passcodes that must be unique before a passcode can be reused. |
| **Delay after failed login attempts in minutes** | The number of minutes that must pass before users can attempt to log in after reaching the maximum number of failed login attempts. |

5. In the *Deploy* section, select the target devices for the profile:

| Option | Description |
|---|---|
| **All Devices** | Distribute the profile to all KACE Agent-managed devices running a supported version of Mac OS X (version 10.8, 10.9, or 10.10). If the Organization component is enabled on your appliance, this includes all supported Mac devices in the selected organization. |
| **Labels** | Distribute the profile only to the devices in the labels that you select. Limiting the distribution to labels, especially Smart Labels, helps to ensure that profiles are applied appropriately.<br>To use this option, you must already have created labels or Smart Labels. See Adding Smart Labels for devices. |

| Option | Description |
|---|---|
| **Devices** | Distribute the profile to the supported Mac OS X devices that you select (version 10.8, 10.9, or 10.10). To search for devices, begin typing in the field. |
| **Operating Systems** | The operating systems on which the application runs. Applications are deployed only to devices with the selected operating systems.<br>a. Click **Manage Operating Systems**.<br>b. In the **Operating Systems** dialog box that appears, select the OS versions in the navigation tree, as applicable.<br>You have an option to select OS versions by their family, product, architecture, or build version. You can choose a specific build versions, or a parent node, as needed. Selecting a parent node in the tree automatically selects the associated child nodes. This behavior allows you to select any future OS versions, as devices are added or upgraded in your managed environment. For example, to select all build current and future versions associated with a Mac 10.11 El Capitan x86 architecture, under **Mac > 10.11 El Capitan**, select **x86**. |
| **Remove All** | Remove all devices from the *Devices* list in this section. |

6. In the *Schedule* section, select the options for distributing the profile to target devices:

| Option | Description |
|---|---|
| **None** | Do not distribute the profile on a schedule. Profiles that have their schedules set to **None** have a status of **Disabled** on the *Mac Profiles* list. However, profiles whose schedule is set to **None** can still be deployed if you select **Run Now** at the bottom of the page. |
| **Every n minutes/ hours** | Run at a specified interval. |
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |
| **Run on the nth of every month/ specific month at HH:MM** | Run on the same day every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>`* * * * *`<br>`\| \| \| \| +----------day of week (0-6)(Sun=0)`<br>`\| \| \| +----------month (1-12)`<br>`\| \| +----------day of month (1-31)` |

| Option | Description |
|---|---|
| | `\| +----------hour (0-23)`<br>`+----------minute (0-59)`<br>Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (/)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3.<br>Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |

7. At the bottom of the page, select one of the following actions:

| Option | Description |
|---|---|
| **Save** | Save the profile and return to the *Mac Profiles* list. |
| **Run Now** | On target devices that have an active Agent connection to the appliance, install the profile now according to the selected deployment options. See Using the Run and Run Now commands. |
| **Duplicate** | Create a copy of the profile with `Copy of` prepended to the profile name. This option is not available for new profiles that have not yet been saved. See Add Mac profiles using existing profiles as templates. |
| **Remove** | Create a profile that can be used to remove the profile from target devices. This option is not available for new profiles that have not yet been saved. See Remove Mac profiles from managed devices. |
| **Delete** | Remove the profile from the appliance. This does not remove the profile from devices on which it is installed, and this option is not available for new profiles that have not yet been saved. See Delete Mac profiles from the appliance. |
| **Cancel** | Discard changes and return to the *Mac Profiles* list. |

# Add Mac profiles using existing profiles as templates

You can add Mac profiles by duplicating existing profiles. This is useful if you want to install an existing profile on different sets of devices, or schedule profile installations to occur at different times. You can duplicate profiles, and change the target devices or schedules as needed.

You have added a user or system profile to the appliance.

**Profiles that have been imported cannot be duplicated.**

1. Go to the *Mac Profiles* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Scripting**, then click **Mac Profiles**.
2. Click the name of a profile to display the *Mac Profile Detail* page.
3. At the bottom of the page, click **Duplicate**.

    **The profile is duplicated, and it appears on the** *Mac Profile* **list with `Copy of` prepended to the profile name. Duplicated profiles have the same properties and identification numbers as the original profiles, but their schedules are automatically set to None to prevent duplicated actions from being performed on the same sets of devices**

# Upload Mac profiles to the appliance

The appliance enables you to upload `MOBILECONFIG` files that contain the configuration settings required to create Mac profiles.

You have obtained a file that contains the configuration settings, or payloads, required for the profile, and that file uses the filename extension `MOBILECONFIG`. For example, `mail.mobileconfig`. For information about creating Mac profiles and downloading them from the Mac OS X Server, go to http://help.apple.com/profilemanager/mac/4.0.

**NOTE:** You cannot view or edit the payloads of profiles that have been uploaded to the Administrator Console. However, you can modify the payloads in the `MOBILECONFIG` file outside the Administrator Console, then upload the edited file as a new profile.

1. Go to the *Mac Profiles* list page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Scripting**, then click **Mac Profiles**.
2. Click **Choose Action** > **Upload a Profile**.
3. Click **Browse** or **Choose File** to locate the `MOBILECONFIG` file.
4. Click **Upload**

    **The profile appears on the** *Mac Profiles* **list with** *Imported* **in the** *Source* **column.**

Select deployment and schedule options for the profile. See:

- Add or edit Mac user profiles
- Add or edit Mac system profiles

# Installing and managing Mac profiles

You can install Mac profiles, view the devices that have Mac profiles installed, and export the list of profiles that have been added to the appliance.

## Distribute Mac profiles on a schedule

You can configure the appliance to distribute Mac profiles to Agent-managed Mac OS X devices periodically according to a schedule. This configuration is useful if you have devices that might be offline and unavailable for installation when you select the *Run* option, and for periodically installing profiles on new devices added to inventory.

You have added or uploaded a Mac profile and you have Agent-managed Mac OS X devices in your inventory.

1. Go to the *Mac Profile Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Scripting**, then click **Mac Profiles**.
    c. Click the name of a profile.
2. In the *Schedule* section, select the options for distributing the profile to target devices:

| Option | Description |
|---|---|
| **None** | Do not distribute the profile on a schedule. Profiles that have their schedules set to **None** have a status of **Disabled** on the *Mac Profiles* list. However, profiles whose schedule is set to **None** can still be deployed if you select **Run Now** at the bottom of the page. |
| **Every n minutes/ hours** | Run at a specified interval. |
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |
| **Run on the nth of every month/ specific month at HH:MM** | Run on the same day every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>`* * * * *`<br>`\| \| \| \| +----------day of week (0-6)(Sun=0)`<br>`\| \| \| +-----------month (1-12)`<br>`\| \| +-----------day of month (1-31)`<br>`\| +-----------hour (0-23)`<br>`+-----------minute (0-59)` |

| Option | Description |
|---|---|
| | Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (/)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3.<br>Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |

3. Click **Save**.

   **The *Mac Profiles* page appears. The *Targeted* column shows the number of devices that are scheduled to have the profile installed. The *Succeeded* column shows the number of devices on which the profile has been installed. Agents on target devices receive instructions to install the profile at the next connection according to the schedule and deployment options specified.**

# Install Mac profiles on devices using the Run option

After you add or upload Mac profiles to the appliance, you can use the *Run* option to install those profiles on Agent-managed Mac OS X devices running version 10.8, 10.9, or 10.10.

You have added Mac profiles, and you have Agent-managed Mac OS X devices in your inventory.

**TIP:** When you use the *Run* option to install Mac profiles on devices, profiles are installed only if devices have an Agent connection to the appliance when the script runs. To ensure that profiles are installed on devices that are offline, consider setting up schedules to deploy profiles. See Distribute Mac profiles on a schedule.

1. Go to the *Mac Profile Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Scripting**, then click **Mac Profiles**.

c. Click the name of a profile.

2. To install the profile on a different set of devices, click **Duplicate** at the bottom of the page to create a copy of the profile, then click the name of the duplicated profile to return to the *Mac Profile Detail* page.
3. On the *Mac Profile Detail* page, select the target devices and deployment options. See:
   - Add or edit Mac user profiles
   - Add or edit Mac system profiles
4. At the bottom of the page, click **Run Now**.

   **The *Mac Profiles* page appears. The *Targeted* column shows the number of devices that are scheduled to have the profile installed. The *Succeeded* column shows the number of devices on which the profile has been installed. On target devices that have an active Agent connection to the appliance, the profile is installed according to the selected deployment options.**
5. To run multiple profiles at once, select the check boxes next to profiles on the *Mac Profiles* page, then click **Choose Action** > **Run**.
6. To view additional details about the profile installation, click **Run Now Status** on the left navigation bar.

# Identify devices that have Mac profiles installed

Device detail pages show the Mac profiles that have been installed on devices, and Mac profile detail pages show devices that have Mac profiles installed.

1. Go to the *Mac Profile Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Scripting**, then click **Mac Profiles**.
   c. Click the name of a profile.
2. Scroll down to the *Results* section at the bottom of the page.

   **The table lists the devices on which the profile is installed. The *Installed* column indicates the date the profile was installed on the device. The *Last Updated* column indicates the most recent date the KACE Agent detected that the profile was installed on the device.**
3. Go to the *Device Detail* page:
   a. On the left navigation bar, click **Inventory**, then click **Dashboard**.
   b. Click the name of a device.
4. Scroll down to the *Mac Profiles* section.

   **The table lists all the profiles that are installed on the device. The *Installed* column indicates the date the profile was installed on the device. The *Last Updated* column indicates the most recent date the KACE Agent detected that the profile was installed on the device.**

# View Mac profiles

You can use the *View By* list to sort Mac profiles by source, action, and scope.

You have added or uploaded Mac profiles to the appliance.

1. Go to the *Mac Profiles* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Scripting**, then click **Mac Profiles**.
2. In the *View By* drop-down list, which appears above the table on the right, select one of the following:

| Option | Description |
|---|---|
| **All Items** | Display the complete list of profiles. |
| **Source** | Display only those profiles that match the selected source:<br>• **Imported**: Profiles that have been uploaded to the appliance.<br>• **Configured**: Profiles whose payloads were configured using the Administrator Console. |
| **Action** | Display only those profiles that match the selected action:<br>• **Add**: Profiles that are configured to install configuration settings on the target devices.<br>• **Remove**: Profiles that are configured to remove configuration settings from target devices. |
| **Scope** | Display only those profiles that match the selected scope:<br>• **System**: Profiles that configure system settings, such as passcode settings.<br>• **User**: Profiles that configure user settings, such as email account settings. |
| **Status** | Display only those profiles that match the selected status:<br>• **Active**: Profiles that are configured to run according to a schedule.<br>• **Disabled**: Profiles whose schedule is set to **None**. |

# Export the Mac profiles list

You can export the list of profiles that appears on the *Mac Profiles* list to CSV (comma-separated values), Excel, or TSV (tab-separated values) formats.

You have created or uploaded Mac profiles.

1. Go to the *Mac Profiles* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Scripting**, then click **Mac Profiles**.

2. **Optional**: To export selected profiles, select the check boxes next to the profiles you want to export.
3. Do one of the following:
   - **To export all profiles in the list, click Choose Action > Export > Export All to format name.**
   - **To export only the select profiles, click Choose Action > Export Selected to format name.**

# Removing and deleting Mac profiles

You can use the appliance to remove Mac profiles from managed devices, and you can delete Mac profiles from the appliance.

## Remove Mac profiles from managed devices

Mac profiles can be configured to remove user and system profiles from Agent-managed Mac OS X devices. This configuration is useful when you have installed a profile on a large number of devices, and you need to remove that profile from all of those devices or from a subset of those devices.

You have used the appliance to install a profile on managed devices, and the original Mac profile has not been deleted from the appliance.

**IMPORTANT: If you delete a profile from the appliance, you can no longer use the appliance to remove that profile from managed devices.**

1. Go to the *Mac Profile Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Scripting**, then click **Mac Profiles**.
   c. Click the name of a profile.
2. At the bottom of the page, click **Remove**.

   **A dialog appears explaining the remove process.**
3. Click **Remove from Device**.

   **The *Mac Profile Detail* page for a new profile, with the *Action* set to *Remove*, appears. The new profile has the same *Profile Name* and *Profile Identifier* as the original profile. The original profile, with the *Action* set to *Add*, remains on the list with its *Schedule* set to *None*. This prevents the same profile from being installed on or removed from the same set of devices, and it enables you to reactivate the original profile later if necessary.**
4. On the *Mac Profile Detail* page in the *Deploy* section, select the devices from which you want to remove the profile:

| Option | Description |
|---|---|
| **All Devices** | Remove the profile from all KACE Agent-managed devices running a supported version of Mac OS X (version 10.8, 10.9, or 10.10). If the Organization component is enabled on your appliance, this action includes all supported Mac devices in the selected organization. |
| **Labels** | Remove the profile from the devices in the labels that you select. Limiting the removal to labels, |

| Option | Description |
|---|---|
| | especially Smart Labels, helps to ensure that profiles are removed appropriately.<br>To use this option, you must already have created labels or Smart Labels. See Adding Smart Labels for devices. |
| **Devices** | Remove the profile from the supported Mac OS X devices that you select (version 10.8, 10.9, or 10.10). To search for devices, begin typing in the field. |
| **Operating Systems** | Select the operating systems of the devices from which you want to remove the profile. Only supported operating systems (Mac OS X version 10.8, 10.9, or 10.10) are displayed. To remove the profile from all supported Mac operating systems, leave all operating systems unselected. |
| **Remove All** | Remove all selected devices from the *Devices* list in this section. |

5. In the *Schedule* section, select the options for removing the profile from target devices:

| Option | Description |
|---|---|
| **None** | Do not remove the profile on a schedule. Profiles that have their schedules set to **None** have a status of **Disabled** on the *Mac Profiles* list. However, profiles whose schedule is set to None can still be removed if you select **Run Now** at the bottom of the page. |
| **Every n minutes/ hours** | Run at a specified interval. |
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |
| **Run on the nth of every month/ specific month at HH:MM** | Run on the same day every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>`* * * * *`<br>`\| \| \| \| +----------day of week (0-6)(Sun=0)`<br>`\| \| \| +----------month (1-12)`<br>`\| \| +----------day of month (1-31)`<br>`\| +----------hour (0-23)`<br>`+----------minute (0-59)` |

| Option | Description |
|---|---|
| | Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (/)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3.<br>Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |

6. At the bottom of the page, select one of the following actions:

| Option | Description |
|---|---|
| **Save** | Save the profile and return to the *Mac Profiles* list. |
| **Run Now** | On target devices that have an active Agent connection to the appliance, remove the profile now according to the selected deployment options. See Using the Run and Run Now commands. |
| **Duplicate** | Create a copy of the profile with `Copy of` prepended to the profile name. |
| **Delete** | Remove the profile from the appliance. This action does not remove the profile from devices on which it is installed. See Delete Mac profiles from the appliance. |
| **Cancel** | Discard changes and return to the *Mac Profiles* list. |

**The *Mac Profiles* page appears. The *Targeted* column shows the number of devices that are scheduled to have the profile removed. The *Succeeded* column shows the number of devices from which the profile has been removed. On target devices that have an active Agent connection to the appliance, the profile is removed according to the selected options.**

# Example: Remove a profile that has been deployed to specified devices

If you inadvertently deploy profiles to target devices, you can remove them by creating a *Remove* profile.

1. You have created a Mac system profile with these scheduling and deployment options:
   - Scheduled to be installed daily at 8:00.
   - Installed, or scheduled to be installed, on 100 target devices.
2. After creating the profile, you realize that you do not want to have the profile installed on 10 of the 100 target devices. You need to remove the profile from the 10 devices and continue to keep the profile available to the other 90 devices.

   **NOTE:** This example uses a Mac system profile, but you can remove both Mac system and Mac user profiles as needed.

1. Go to the *Mac Profile Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Scripting**, then click **Mac Profiles**.
   c. Click the name of the profile. In this example, we refer to this profile as **Profile A**.
2. On the *Mac Profile Detail* page for **Profile A**, click **Remove**.

   **A dialog appears explaining the remove process.**
3. Click **Remove from Device**.

   **The *Mac Profile Detail* page for a new profile, with the *Action* set to *Remove*, appears. The new profile has the same *Profile Name* and *Profile Identifier* as the original profile. In this example, this is Profile A Remove. The original profile, with the *Action* set to *Add*, remains on the list with its *Schedule* set to *None*. This prevents the same profile from being installed on or removed from the same set of devices, and it enables you to reactivate Profile A later if necessary.**
4. On the *Mac Profile Detail* page for **Profile A Remove**, in the *Deploy* section, select the devices from which you want to remove the profile.
5. Do one of the following:
   - If you have set the profile to run on a schedule, click **Save** at the bottom of the page.
   - To run the profile on devices that currently have a connection to the appliance, click **Run Now**.

   **The *Mac Profiles* page shows the number of target devices in the *Targeted* column and the number of devices from which the profile has been removed in the *Succeeded* column for Profile A Remove.**
6. When the *Succeeded* column shows that the profile has been removed from all target devices, **Profile A Remove** is no longer needed, and you can delete it from the appliance. See Delete Mac profiles from the appliance.
7. In **Profile A**, verify that the correct devices are targeted and enable the profile:
   a. Go to the *Mac Profile Detail* page for **Profile A**.
   b. Change the list of target devices to include only the correct 90 devices.
   c. Enable the profile. See:
   - Add or edit Mac user profiles
   - Add or edit Mac system profiles

# Delete Mac profiles from the appliance

You can delete Mac profiles from the appliance as needed.

Deleting a profile does not remove it from any devices on which it has been installed. To remove profiles from devices, use the **Remove** option. See Remove Mac profiles from managed devices.

**NOTE:** If you delete a profile from the appliance, you can no longer use the appliance to remove that profile from managed devices.

1. Go to the *Mac Profile Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Scripting**, then click **Mac Profiles**.
    c. Click the name of a profile.
2. At the bottom of the page, click **Delete**.

    **A dialog appears.**
3. Verify that you want to delete the profile from the appliance, then click **Delete Profile**.

    **The profile is removed from the appliance and it no longer appears on the *Mac Profiles* list. However, the Profile Identifier continues to be displayed on the *Device Detail* page of devices on which the profile is installed.**

# Using Task Chains

Task Chains allow you to create a sequence of tasks to run in a specific order.

You can add one or more Patch Schedules, Scripts, File Synchronization items, and Wake-On LAN Requests to a Task Chain. Use Task Chains, for example, when you need to deploy managed installations and then run scripts on target devices. The order of tasks in a Task Chain can be easily changed, as required.

**NOTE:** You cannot add individual Managed Installations to a Task Chain.

Each Task Chain runs against a configured set of devices, as defined in the Task Chain.

If a target device in a Task Chain is offline, you can configure the Task Chain to run when the device becomes connected. When a target device is referenced in multiple Task Chains, only one Task Chain runs against the device at a time.

The following concepts apply to device selections in a Task Chain:

- Devices selected in a Task Chain override those set for patching schedules and scripts when they run as part of a Task Chain.
- Devices selected in a Task Chain do not affect any Managed Installation (MI) or File Synchronization (FS) items associated with those devices. Any Inventory, MI, and FS tasks are queued for each device in the Task Chain, and any MI and FS that are configured to run on each machine are deployed.
- Wake-on-LAN (WoL) schedules run once per Task Chain, when the first device in the Task Chain encounters the WoL Task. The WoL Task runs against the devices selected in the Task Chain.

    **NOTE:** A WoL Task should always be scheduled as a first Task in a Task Chain. This causes WoL packets to be pushed to all devices at once and the devices will wait for this task, since it is the first Task. When a WoL task is not the first task in the Task Chain, WoL packets are pushed to all devices at once regardless of the current state of the task running in the task chain.

# Add and edit Task Chains

A Task Chain is a collection of tasks that can run in a specific order. Use the *Task Chain Detail* page to add and edit Task Chains.

1. Go to the *Task Chains* list page:

a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
b. On the left navigation bar, click **Distribution**, then click **Task Chains**.

2. Do one of the following:
   - Select **Choose Action** > **New**.
   - Click the name of a task chain.
3. In the *Configure* section, specify the following options:

| Option | Description |
|---|---|
| **Name** | The name of the task chain. |
| **Enabled** | Select this check box to allow this task chain to run. |
| **Description** | A brief description of the task chain. |

4. Still in the *Configure* section, specify the devices on which you want the Task Chain to run.
   - **To choose devices that belong to labels, in the *Configure* section, under *Labels*, click Manage Associated Labels. In the *Select Labels* dialog box that appears, select one or more labels associated with the devices that you want to select. Close the dialog box.**
   - **To choose devices by operating system, click Manage Operating Systems. In the Operating Systems dialog box that appears, select the OS versions in the navigation tree, as applicable.**

     You have an option to select OS versions by their family, product, architecture, release ID, or build version. You can choose a specific build version, or a parent node, as needed. Selecting a parent node in the tree automatically selects the associated child nodes. This behavior allows you to select any future OS versions, as devices are added or upgraded in your managed environment. For example, to select all build current and future versions associated with the Windows 10 x64 architecture, under **All** > **Windows** > **Windows 10**, select **x64**.
5. In the *Schedule* section, specify the schedule settings:

| Option | Description |
|---|---|
| **None** | Run in combination with an event rather than on a specific date or at a specific time. |
| **Every n hours** | Run at a specified interval. |
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |
| **Run on the nth of every month/ specific month at HH:MM** | Run on the same day every month, or a specific month, at the specified time. |
| **Run on the nth weekday of every month/specific month at HH:MM** | Run on the specific weekday of every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported): |

| Option | Description |
|---|---|
| | `* * * * *`<br>`\| \| \| \| +----------day of week (0-6)(Sun=0)`<br>`\| \| \| +----------month (1-12)`<br>`\| \| +----------day of month (1-31)`<br>`\| +----------hour (0-23)`<br>`+----------minute (0-59)`<br>Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (/)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3.<br>Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |
| **View Task Schedule** | Click to view the task schedule. The *Task Schedule* dialog box displays a list of scheduled tasks. Click a task to review the task details. For more information, see View task schedules. |

6. In the *Tasks* section, add one or more Tasks.
   a. Click **New Task** to add a Task.
   b. In the *New Task* area that appears, click **Task Type** and select from the available types, as required.

**Some task types:**

- Have an **Abort on Failure** option. Selecting this option causes the task chain to stop executing on a given machine if it fails on that machine.
- Allow you to select a specific user-defined task, such as Wake-On-LAN, Scripts, and Patch Schedules.
- Run all applicable Tasks on the machine, such as the Managed Installation (MI) and File Synchronization (FS) tasks.

**Also, certain task types, allow you to select a specific user-defined task. Other task types, such as the Managed Installation (MI) and File Synchronization (FS) tasks run all applicable MI or FS tasks on the machine.**

**The selected Task appears in the *Tasks* section.**

7. To reorder the Tasks in the Task Chain, in the top-right corner of the task area, click  , and drag and drop the Task into a desired place in the sequence.
8. To delete a Task from the Task Chain, in the bottom-right corner of the task area, click  .
9. Click **Save**.

To run a task chain, select it on the *Task Chains* list page, and click **Choose Action > Run**.

# Patching devices and maintaining security

The appliance enables you to patch managed devices to improve software functionality and protect devices and networks from vulnerabilities.

# Using the Security Dashboard

The Security Dashboard provides an overview of patching processes for the selected organization (if applicable), or the appliance.

If the Organization component is enabled on the appliance, and you are logged in to the Administrator Console (`http://`**appliance_hostname**`/admin`), the Security Dashboard shows information for the selected organization.

You can access the Security Dashboard if one or more roles associated with your user account grants access to this dashboard. If you want to hide it, edit your user roles, as needed. For more information, see Add or edit User Roles.

**TIP:** The appliance updates the summary widgets periodically. To update most of the widgets any time, click the **Refresh** button in the upper right of the page: . To update most individual widgets, hover over the widget, then click the **Refresh** button above the widget. Some widgets may require additional steps.

# About the Security Dashboard widgets

Security Dashboard widgets contain information about the overall patch compliance for your managed devices.

This section describes the widgets available on the Security Dashboard. If the Organization component is enabled on your appliance, the widgets show the information for the selected organization at the Admin level.

This dashboard provides an overview of patch compliance in your environment, and the information about patching processes. Use it to quickly review the level of system patches installed on managed devices and look for any indicators that can improve your system security. For example, you can focus on the device patch compliance and review your patching schedules to ensure the latest system updates are installed and running on your managed devices.

| Widget | Description |
|---|---|
| Critical Patch Compliance | This widget shows the deployment progress of patches that are marked as critical. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| Dell Updates | This widget displays the number of Dell applications, BIOSs, and firmware updates that can be applied to managed devices. The updates are categorized as *Moderate*, *Important*, or *Critical*, depending on the urgency of the update. After a Dell Update schedule is created, data appears in the widget. See Configure Dell Update schedules. |

| Widget | Description |
|---|---|
| | If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| Compliance By Machine | This widget displays a donut chart, where each section of the chart indicates the percentage of patch compliance for each managed device. Hovering over each section of the chart displays the percentage of the patch compliance for the selected device.<br>You can change the information that appears in the widget by choosing the patch publisher, operating system, label, classification, severity, KB number, and availability date. You can also switch between bar chart and donut views, as applicable. You can also install multiple instances of this widget on the Security Dashboard using a different set of parameters in each instance. |
| Compliance By Patch | This widget provides a donut chart, where each section of the chart indicates the percentage of compliance for each applicable patch. Hovering over each section of the chart displays the percentage of the compliance for the selected patch.<br>You can change the information that appears in the widget by choosing the patch publisher, operating system, label, classification, severity, KB number, and availability date. You can also switch between bar chart and donut views, as applicable. You can also install multiple instances of this widget on the Security Dashboard using a different set of parameters in each instance. |
| Patch Installation Progress | This widget shows the progress of patching tasks that are running on managed devices. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| Patches Deployed | This widget displays the number of patches that are currently deployed.<br>You can change the information that appears in the widget by choosing the patch publisher, operating system, label, classification, severity, KB number, and availability date. You can also switch between bar chart and donut views, as applicable. You can also install multiple instances of this widget on the Security Dashboard using a different set of parameters in each instance. |
| Patches Failed | This widget displays the number of patches that failed to deploy.<br>You can change the information that appears in the widget by choosing the patch publisher, operating system, label, classification, severity, KB number, and availability date. You can also switch between bar chart and donut views, as applicable. You can also install multiple instances of this widget on the Security Dashboard using a different set of parameters in each instance. |
| Patches Released | This widget displays the number of patches that are released and available for deployment.<br>You can change the information that appears in the widget by choosing the patch publisher, operating system, label, classification, severity, KB number, and availability date. You can also switch between bar chart and donut views, as applicable. You can also install multiple instances of this widget on the Security Dashboard using a different set of parameters in each instance. |
| Patching Tasks Completed | This widget shows the progress of patching tasks, such as detect, deploy, and rollback tasks, on managed devices. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |

| Widget | Description |
|---|---|
| Reports | This widget contains links to common patching reports. Use them to quickly generate a specific report, such as *Critical and Recent Bulletin List* , *Devices not compliant by patch*, and others. |
| SCAP Summary | This widget provides information about SCAP scans that have been performed on devices. If the Organization component is enabled on your appliance, the widget shows the information for the selected organization. |
| Views | This widget contains links to common patching pages and wizards, including any custom views that you created. Use them to quickly navigate to specific pages, such as the *Patch Catalog*. If you have any custom views, they are sorted alphabetically. If you want the custom views to appear in a specific order, you can prefix their names with numbers, as needed. |
| Windows 10 Releases | This widget shows a bar chart, with each item in the chart representing a particular Windows 10 release and the number of managed devices running that version. This can give you an idea of how many devices are candidates for published Windows 10 updates. |

# Customize the Security Dashboard

You can customize the Inventory Dashboard to show or hide widgets as needed.

1. Go to the *Inventory Dashboard*.
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Security**, then click **Dashboard**.
2. Hover over the widget, then use any of the following buttons:
    - : Refresh the information in the widget.
    - : Display information about the widget.
    - : Hide the widget.
    - : Resize the widget.
    - : Drag the widget to a different position on the page.
3. Some widgets are editable, allowing you to filter the information that they display. To edit an editable widget, click and in the dialog box that appears, select the patch publisher, operating system, label, classification, severity, KB number, and availability date. You can also switch between bar chart and donut views, as applicable.
4. Click the **Customize** button in the top-right corner of the page to view available widgets.
5. To show a widget that is currently hidden, click **Install**.

# About patch management

Patch management is the process of obtaining, testing, and installing patches for software on devices. The appliance enables you to automate patch management, which helps to improve software functionality and protect devices and networks from vulnerabilities.

With patch management you can detect and deploy the latest security patches and software updates for Windows and Mac devices that use the appliance.

**NOTE:** The Patch Management component is supported on Windows and Mac devices only. Patch Management is not available for Linux devices.

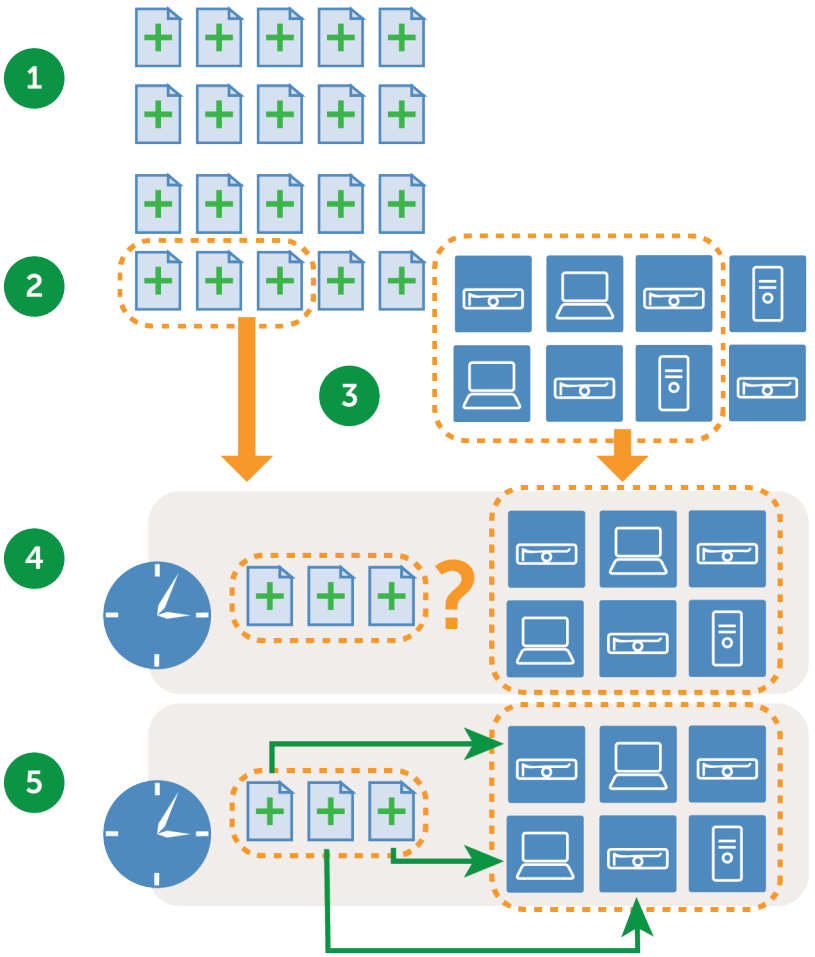
# Patching workflow

Patching workflow includes subscribing to patches, selecting patch download settings, using labels to identify patches and the devices to be patched, and scheduling patching jobs.

The patching workflow includes the following tasks.

- Subscribing to the patches that you want to download. If the Organization component is installed on your appliance, you set subscription settings for each organization separately. Additional workflow details are available for first-time patch subscription. See Subscribing to patches and configuring download settings.
- Selecting patch download settings on the *Patch Subscription Settings* page. See Select patch and feature update download settings.
- Creating Smart Labels to group devices for patching and patches for deployment. See Using Smart Labels for patching.
- Creating patching schedules to detect and deploy packages. If the Organization component is installed on your appliance, you create patch schedules for each organization separately. See Configuring patch schedules.

Figure 11. Patching workflow




| Legend number | Action |
|---|---|
| 1 | Signature files for patches you subscribe to are downloaded to the appliance from Quest. Patch packages are downloaded from Quest and from software vendors. |
| 2 | Smart Labels group the downloaded patches. |
| 3 | Smart Labels select devices to patch. |
| 4 | Patches needed by the devices are detected according to a schedule. |
| 5 | Patches are deployed to devices according to a schedule. |

# About patch signature files

Patch signature files include the security bulletins and other files that define patches; they do not include the patch packages that are used to install patches.

Patch signature files are downloaded from Quest according to the subscription and download options you select. For more information on downloading patch signature files, see Select patch and feature update download settings.

# About patch packages

Patch packages are the files required to install patches.

Patch packages are downloaded from Quest according to the subscription and download options you select. In some cases, patch packages are also downloaded directly from vendors, such as Microsoft and Adobe.

There are two options for downloading patch packages:

- **Downloading only those patches that you need**: You can choose to download only those packages that have been detected as required by managed devices. Downloading this way reduces download time and disk space. In addition, you can choose to automatically remove patches after a specified time if detect results show that the patches are not needed.
- **Maintaining a full cache of patches**: You can choose to maintain a full cache of packages regardless of whether the patches are required by managed devices. This method keeps packages available for quick deployment, but it requires more download time and disk space than downloading only those packages that you need.

For more information about package download options, see Select patch and feature update download settings.

# About patch testing and security

Quest provides safe, timely, and high-quality patch signatures for Windows and Mac operating systems, and many popular applications.

Before patch signatures are made available to the appliance, Quest performs the following security checks:

- Verification of patch metadata produced by each content development team.
- Validation of patch installation and uninstallation processes.
- Confirmation that the patch does not disrupt the stability of the targeted operating systems and applications.

## About the patch testing environment

Quest uses VMware® ESX®, VMware® vCenter™, Microsoft® Azure®, and custom hardware bench testing.

Testing methods include verification that patch-naming conventions comply with Quest policies.

### About assessment testing

Assessment testing verifies that the Patch Management component is performing properly.

The testing verifies that:

- An applicable non-patched device shows as applicable and not patched.
- A patched device shows as installed and not applicable.
- No false positives exist in the detection of the digital fingerprint.
- Patch content is compliant with mandatory baselines.
- Vulnerability is correctly displayed in the Update Server.
- All Smart Label, sorting, and other visual features are functioning properly.

### About deployment testing

Deployment testing verifies that patches are being deployed appropriately.

The testing verifies that:

- The package is deployable.
- The suppress-reboot functionality works.
- The uninstallation functionality works.
- On-demand package caching works.
- Automatic deployment scheduling works.
- Agent package download works.
- SHA1 checksum ensures package integrity.
- The Agent automatically runs assessment after patch deployment.
- The Agent restarts automatically after reboot.

# About the patch quality assurance process

Quest provides Patch Management customers more value through the content development and quality assurance processes. The quality assurance teams verify the patch install and uninstall processes as well as the patch metadata produced by the content development team. Providing quality content to our customers is a high priority. To ensure successful delivery of content, Quest executes test cases covering the following test components.

### Testing environment

Quest invests heavily in testing infrastructure. The content development and quality assurance teams have access to a virtual enterprise environment representing nodes of various configurations. Quest uses a mix of virtual desktops and servers in addition to custom physical bench testing to ensure that our testing infrastructure is state of the art.

### Application testing

Quest tests with various applications as necessary to ensure the requirements of the patch are satisfied.

### Testing strategy

Quest uses the following types of testing:

- **General testing** verifies the following:
  - Patch-naming convention complies with the Quest policies.
- **Assessment testing** verifies the following:
  - An applicable non-patched system shows applicable and not patched.
  - An patched system shows installed and not applicable.
  - False positives in the detection of digital fingerprint.
  - The content complies with mandatory baselines.
  - The patch is correctly displayed in Patch Server, including all filtering, sorting and other visual functionality.
- **Deployment testing** verifies the following:
  - The package can be successfully deployed.
  - The suppress reboot functionality works correctly.
  - The uninstall functionality works correctly.
  - On-demand package caching works correctly.
  - Automatic deployment scheduling works correctly.
  - Agent package downloads.
  - The package hash ensures the package integrity.
  - The agent automatically runs assessment after each patch deployment.
  - The agent restarts automatically after a reboot.

### Trusted delivery and flexibility

Quest processes are designed and implemented to maximize global availability through a secure content distribution network. All communications with Quest are conducted through encrypted, secure channels to ensure the integrity of security content.

Using a best practice approach, critical security patches are automatically downloaded to customer locations, based on their subscription options. Additional security patches may be downloaded, as necessary, to create a customized version of the KACE Patch Content Repository within the customer's own secure enterprise environment.

# Best practices for patching

Best practices for patching devices include testing patches, using labels to organize devices and patches, and notifying users when systems are being patched.

- **Test patches before deploying them**

  Test patches on selected devices before deploying them to all devices. This testing ensures that patches do not break anything before they are widely deployed.
  When choosing test devices, look for these characteristics:
  - Devices whose users are technically sophisticated and can communicate problems effectively.
  - Devices that have access to the systems and software that reflect the working environment.

For a thorough test, devices should function normally for at least a week after being patched. If no problems are reported after a week, the patch can be deployed to the remaining devices on the network.

- **Use labels to organize devices and patches**

  You can use Smart Labels to automatically group devices by type, such as laptop, desktop, and server. In addition, you can use Smart Labels to automatically group patches by importance, such as critical operating system patches and lower priority patches for other applications. You can then create patching schedules to match each type of device and patch.
  See:

  - Using Smart Labels for patching
  - Creating and managing patch schedules

- **Use either Windows Update or the appliance to patch Windows devices**

  There are two options for patching Windows devices:

  - **Use Windows Update**: Windows Update is a Microsoft feature that downloads and installs updates to Windows operating systems. If you enable Windows Update on managed devices, use Patch Management on the appliance only to detect Windows operating system patches, not to deploy them. Patches will be deployed by Windows Update.
  - **Use the appliance**: You can download and deploy patches for Windows operating systems using Patch Management. If you use Patch Management on the appliance, disable Windows Update on managed devices, because patches will be deployed by the appliance.

  **TIP:** The appliance enables you to create a policy that specifies whether or not managed devices use Windows Update. See Using Windows configuration policies.

- **Minimize downtime during patching**

  Schedule patch deployment during periods when device use is lower to minimize downtime. Keep in mind that device use varies depending on the device type:

  - **Servers**: These require careful and well-publicized upgrades. When patching servers, you might need to plan ahead by several weeks.
  - **Desktops**: These have more flexible options for patching, because they are often left running when they are not in use.
  - **Laptops**: These are the most difficult to patch, because they are often only available to patch while being used.

  For more information about creating patch schedules for each type of device, see:

  - About scheduling critical OS patches for desktops and servers
  - About scheduling critical patches for laptops

- **Notify users when devices are being patched**

  Be sure to notify users when the devices they use are being patched. This is especially important if devices need to be restarted as part of the patching process. There are several ways to inform users of patching schedules:

  - **Send email or use other messaging systems**: Notify users in advance through email and other messaging systems outside the appliance Administrator Console. This notification is especially useful when patching might prevent access to critical systems, such as servers, for a time.
  - **Send an alert message from the appliance**: Use the appliance Administrator Console to create an alert and broadcast it to all devices or to selected devices. These broadcast alerts can be used to remind users that patching is about to start.

For more information on creating alerts, see Broadcasting alerts to managed devices.

- **Provide alerts during patching**: When you schedule patching, choose to alert users before patching, and prompt users before rebooting their devices. You can also enable users to snooze or postpone reboots if necessary. See Configuring patch schedules.

For more information about scheduling patching for various devices, see:

- About scheduling critical OS patches for desktops and servers
- About scheduling critical patches for laptops

- **Set time limits on patching jobs to reduce impact on users**

  Patching jobs can require extensive bandwidth and resources. To reduce the impact on users, you can set time limits on patching jobs. For example, you could configure patching jobs to start at 04:00 and stop at 07:00. Any patching jobs that are in progress at 07:00 are suspended. Jobs resume where they left off when the next scheduled patching job begins. See Configuring patch schedules.

- **Use Replication Shares to optimize network resources**

  Use Replication Shares to optimize network resource requirements and download time. Replication Shares are devices that keep copies of files for distribution, which can be useful for managed devices that are deployed across multiple geographic locations. For example, using a Replication Share, a device in New York could download patch files from another device at the same office, rather than downloading those files from an appliance in Los Angeles.
  For more information on setting up and using Replication Shares, see Using Replication Shares.

- **Find information on the Quest Knowledge Base**

  Quest Support has a Knowledge Base of articles about the appliance, which you can access at https://support.quest.com/kace-systems-management-appliance/kb. The Knowledge Base is continually updated with solutions to real-world appliance problems that administrators encounter. To view patching articles, go to the Knowledge Base and search for *Security*.

- **Use ITNinja.com to connect with other IT professionals**

  Sponsored by Quest KACE, ITNinja.com (formerly AppDeploy.com) is a product-agnostic IT-focused community website. It is the Internet's leading destination for IT professionals to share information and ask questions about system-management related topics. See http://itninja.com.

# Subscribing to and downloading patches

To enable patching, you need to subscribe to patches and schedule patch downloads to the appliance.

## About patch subscription and downloads

Patch subscription is the process of selecting the operating systems and applications for which you want to receive patches.

If the Organization component is enabled on your appliance, you select subscription settings for each organization separately.

After you subscribe to patches, the appliance downloads them according to the schedule you set. When patches are downloaded, you can test and deploy them. You can choose to automatically deploy patches as well, but such deployment is recommended for low-risk or time-important patches only. See:

- Select patch and feature update download settings
- Using Smart Labels for patching

### Applications that the appliance can patch

**For a list of applications that the appliance can patch, go to https://support.quest.com/kb/112030, and open the attachment.**

### NTP service requirement

When downloading patches using HTTPS, the NTP (Network Time Protocol) service must be running on the appliance. The NTP service is required because the secure protocol uses the current date stamps from the appliance to ensure certificate validity. If the NTP service is not running, patch download failures, suggesting invalid certificates, might result.

# Websites that must be accessible to the appliance

To complete patch downloads, access product information, and interact with Quest Support, the firewall, DNS server, and proxy server settings must allow the appliance to access specific domains on both port 80 and port 443.

**Table 29. Domains that must be accessible to the appliance**

| Domain | Used for |
|---|---|
| https://support.quest.com/download-product-select | Quest updates |
| http://servicecdn.kace.com | SCAP (Secure Content Automation Protocol) |
| https://service.kace.com | appliance and Agent updates from Quest |
| https://support.quest.com | Quest Support |
| http://cdn01.catalog.kace.com/ | Quest Updates |
| https://cdn01.catalog.kace.com/ | Quest Updates |
| https://quest.com/kace | Localized content, third-party software licenses, and product information |
| http://www.itninja.com | ITNinja community features |
| http://appdeploy.com | Redirects to ITNinja.com |
| http://download.windowsupdate.com | Microsoft updates |
| http://download.microsoft.com | Microsoft updates |

| Domain | Used for |
|---|---|
| http://www.microsoft.com/en-us/default.aspx | Microsoft updates |
| https://api.dell.com | Dell updates |
| http://ftp.dell.com | Dell updates |
| http://ardownload.adobe.com/ | Adobe Application Updates |
| http://armdl.adobe.com/ | Adobe Application Updates |
| https://airdownload.adobe.com/ | Adobe Application Updates |
| https://fpdownload.macromedia.com/ | Adobe Application Updates |
| http://swcdn.apple.com/ | Apple Updates |
| https://swdist.apple.com | Apple Updates |
| http://download.winzip.com/ | Corel Updates including WinZip |
| https://download.winzip.com/ | Corel Updates including WinZip |
| https://download.virtualbox.org/ | Oracle updates including Java |
| http://download.autodesk.com/ | Autodesk Updates |
| http://knowledge.autodesk.com/ | Autodesk Updates |
| http://revit.downloads.autodesk.com/ | Autodesk Updates |
| http://trial2.autodesk.com/ | Autodesk Updates |
| http://up.autodesk.com/ | Autodesk Updates |
| https://knowledge.autodesk.com/ | Autodesk Updates |
| https://up.autodesk.com/ | Autodesk Updates |
| https://cdn.sw.altova.com/ | Altova Updates |
| http://download.imgburn.com/ | ImgBurn Updates |
| https://www.realvnc.com/ | RealVNC Updates |
| https://www.uvnc.eu/ | UltraVnc Updates |
| https://download-installer.cdn.mozilla.net/ | Mozilla Firefox Updates |

| Domain | Used for |
|---|---|
| https://www.python.org/ | Python Updates |
| https://the.earth.li/ | Putty Updates |
| http://cdn1.evernote.com/ | EverNote Updates |
| https://cdn1.evernote.com/ | EverNote Updates |
| http://cdn01.foxitsoftware.com/ | Foxit Updates |
| https://download.ccleaner.com/ | Piriform Updates |
| https://media.inkscape.org/ | inkscape Updates |
| https://download.cdburnerxp.se/ | Canneverbe Updates |
| http://download.videolan.org/ | VideoLAN Updates |
| https://www.tightvnc.com/ | TightVNC Updates |
| http://downloadarchive.documentfoundation.org/ | LibreOffice Updates |
| https://download.filezilla-project.org/ | FileZilla Updates |
| https://e3.boxcdn.net/ | Box Inc. Updates |
| http://www.rarlab.com/ | WinRAR GmbH Updates |
| https://www.rarlab.com/ | WinRAR GmbH Updates |
| http://ftp.uni-kl.de/ | Wireshark Updates |
| https://www.wireshark.org/ | Wireshark Updates |
| https://notepad-plus-plus.org/ | Notepad++ Updates |

# Overview of first-time patch-subscription workflow

Patch detection signatures and patch packages are not downloaded to the appliance by default. You must subscribe to the patches you want and then schedule a time to download them.

To save network bandwidth and disk space, Quest recommends that you download patch definition signatures first, because they are much smaller in size than patch packages. Then you can detect the patches that you need, and select the download settings that work best for your network.

The following workflow is for first-time patch-subscription.

1. **Gather information**: Identify the operating systems, language packages, and applications installed on managed devices so that you know what you need to subscribe to. You can find this information on the appliance *Dashboard* page as well as by running reports. See View details about operating systems and applications.
2. **Select initial patch subscription settings**: Subscribe to the operating systems and languages required by managed devices. See Subscribing to patches and configuring download settings.
3. **Download patch detection signatures**: Patch detection signatures are smaller files that can be downloaded quickly and do not require much disk space. Download the patch detection signatures of the patches you subscribe to. Downloading these signatures enables you to view available patches and identify the patch packages you want to download later. See Select patch and feature update download settings.
4. **Run a detect-only patching job**: Schedule a Detect-only patching job to identify the patches required by managed devices. A detect-only patching job is a one-time operation that shows how large the first patching job is going to be. Also, it indicates how to allocate resources based on device availability for patch installations and reboots. To run a detect-only patching job, create a patching schedule that detects patches on all devices. See Configuring patch schedules.
5. **Select patch package download settings**: After you have identified the patch packages that you need, set a time for package downloads to occur. See Select patch and feature update download settings.

# View details about operating systems and applications

You can view information about the operating systems and applications installed on managed devices on the *Summary Detail* page.

Before you subscribe to patches, gather information about the operating systems, language packages, and software installed on managed devices so that you know what subscriptions you need.

1. Do one of the following:
   - **If your appliance has the Organization component enabled, and you want view information for the appliance, log in to the System Administration Console: `http://appliance_hostname/system`, or select System from the drop-down list in the top-right corner of the page.**
   - **If your appliance does not have the Organization component enabled, or if you want to view organization-level information, log in to the Administrator Console : `http://appliance_hostname/admin`. Or, if the *Show organization menu in admin header* option is enabled, select an organization in the drop-down list in the top-right corner of the page next to the login information.**
2. Click **Home** to display the *Dashboard* page.
3. In the top-right corner of the page, click **View Details**.

   **The *Dashboard Detail* page appears. The *Devices* section shows the operating systems of managed devices for the appliance or for the selected organization.**
4. In the *Software* section, click **Software Titles**.

The appliance runs a report that displays the software installed on managed devices. See About reports.

# Subscribing to patches and configuring download settings

To establish a patching workflow, you can subscribe to patches and configure patch download settings.

# Subscribe to patches

You can subscribe to patches for the operating systems and applications on your managed devices.

Before you subscribe to and download patches, identify the operating systems and applications installed on managed devices, and verify patching requirements. See View details about operating systems and applications.

1. Go to the *Patch Subscription Settings* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Security**, then click **Patch Management**.
    c. On the *Patch Management* panel, click **Subscriptions**.
2. The *Patch Status* section provides several details about the latest patch download and appliance disk space. Here you can also determine if newly downloaded patches should be marked as active or inactive by default.

| Option | Description |
|---|---|
| **Activate New Patches** | Mark new patches as Active. This setting enables patches that match your subscription settings after every download. If this option is not selected, new patches are marked as Inactive. This enables you to test patches before they are deployed. |

3. Specify the *Subscription* settings. The operating systems and locales specified in the subscription control the patches that are downloaded.

| Option | Description |
|---|---|
| **Windows Operating Systems** | Download patches for the selected Windows operating systems. Click the edit button to manage the list of operating systems: . Select **All Windows in Inventory** to select the Windows operating systems based on managed devices. To ignore Windows operating system patches, select **Disabled**. Or, select the check boxes next to one or more Windows operating systems.<br>Selected items are displayed after you save the settings. |
| **Mac Operating Systems** | Download patches for the selected Mac operating systems. Click the edit button to manage the list of operating systems: . Select **All Mac in Inventory** to select the Mac operating systems based on managed devices. To ignore Mac operating system patches, select **Disabled**. Or, select the check boxes next to one or more Mac operating systems.<br>Selected items are displayed after you save the settings. |
| **Locales** | Download patches for the selected languages. Click the edit button to manage the list of locales: . Select **All Locales** to download patches regardless of the locale or select the check boxes next to one or more locales.<br>Selected items are displayed after you save the settings. |

**NOTE:** At least one operating system and one locale must be selected for a patch subscription.

4. Specify the *Application Patches* settings. These settings are used to determine the patch status once the patch files are downloaded. This can be active, inactive or disabled.

| Option | Description |
|---|---|
| **Publishers** | Subscribe to applications patches based on its vendor. Click the edit button to manage the selected types:  . Select **All Publishers** to select patches from all available publishers. Or, select the check boxes next to one or more publishers.<br>Selected items are displayed after you save the settings. |

5. Specify the subscription's *Advanced Options*.

| Option | Description |
|---|---|
| **Classification** | Click and select a type of this subscription. You can choose to select **All Classifications**, to make it **Disabled**, or click **Select Classification**, and choose one or more of the existing values, as applicable: **Critical Updates**, **Definition Updates**, **Feature Packs**, **Full Software**, **Hotfix**, **Security Updates**, **Service Packs**, **Tools**, **Update Rollups**, **Updates**, and **Upgrades**. |
| **Severity** | Click and select a severity of this subscription. You can choose to select **All Severities**, to make it **Disabled**, or click **Select Severity**, and choose one or more of the existing values, as applicable: **Critical**, **Important**, **Low**, **Moderate**, and **Recommended**. |
| **Labels** | Download only those patches that match the selected labels. Click **Manage Associated Labels** to select the labels.<br>This refinement is important when disk space is limited. If the total disk space required for selected patches exceeds the space available on the appliance, patches cannot be downloaded.<br>**NOTE:** Appliance disk space information appears in the *Patch Status* section at the top of the page. |
| **Disable Windows Embedded Patches** | Identify and disable any embedded Windows patches. When this option is selected, the signatures for embedded patches are downloaded, but they cannot be deployed unless they meet the subscription criteria. |
| **Inactivate Superseded Patches** | Mark patches that have been superseded to the *Inactive* state after every download. Inactive Superseded Patches are identified with **Inactive** on the *Patch Catalog* page. |
| **Detect Disabled Patches** | Enable the appliance to identify disabled patches when it runs a Detect job. If this option is selected, the signatures for disabled patches are downloaded for detection purposes only. Patches cannot be deployed unless they meet the subscription criteria. |

6. Click **Save**.

Selected patches are downloaded automatically at the next scheduled download time. If a patch does not match the subscription settings after download, it appears as **Disabled**. If a patch matches the subscription settings but it is either superseded or manually set to inactive, the state appears as **Inactive**.

# Select patch and feature update download settings

The patches and Widows Feature Updates you subscribe to are downloaded to the appliance according to the settings you choose.

Be aware that the first patch download might use a large amount of network bandwidth.

1. Go to the *Patch and Feature Update Download Settings* page.
   - **If the Organization component is not enabled on the appliance, on the left navigation bar click** *Security***.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click *Patch and Feature Update Download Settings*.
3. In the *Configure File Downloads* section, select the following options.

| Option | Description |
|---|---|
| **Patching** | • **Disabled**: Prevents the downloading of patch packages. This prevention includes the installers that are required to install the patches.<br>• **All subscribed files**: Maintains a full cache of subscribed packages on your appliance. This option downloads all deployment packages to which you subscribe, without checking to determine whether they are required for your environment. It is important for some environments to maintain a full cache. For example, if you select the **Offline Target** or **Online Source** option, full caching is required.<br>• **Files detected as missing**: Allows the appliance to determine which packages to download based on the results of Detect jobs. If a patch detection signature has been detected as Not Installed on any managed device, the patch package is downloaded. If no managed devices are detected as Not Installed, no packages for this patch are downloaded. |
| **Feature Updates** | • **Disabled**: Prevents the downloading of Windows Feature Updates. This prevention includes the installers that are required to install the patches.<br>• **Files detected as missing**: Allows the appliance to determine which packages to download based on the results of Detect jobs. If a Feature Update signature has been detected as Not Patched on any managed device, the Windows Feature Update package is downloaded. If no managed devices are detected as Not Updated, no packages for this Windows Feature Updates are downloaded. |
| **Delete unused files after __ days** | Deletes patches and Windows Feature Updates that have not been deployed in the specified number of days. Patches and Windows Feature Updates that are marked as *Inactive* or *Disabled* are automatically deleted during the patch download process. |
| **Offline Update** | The action to take if the appliance is offline when the update process is scheduled to start. Clear the *Offline Update* option if the appliance is expected to be connected to the internet and can download patches or Windows Feature Updates directly. |
| **Offline Target** | The Offline Target to use if the appliance is not connected to the internet, and you want to upload the patch and Windows Feature Update files from a local directory. If you have a appliance that is connected to the internet, you can configure that appliance as an Offline Source. Then you can manually copy the patch files from the Offline Source Patches file share to the following directory on the Offline Target: `\\`**appliance_host**`\patches`.<br>Click **Upload** to load patch TAR files. |

| Option | Description |
|---|---|
| **Online Source** | Whether the appliance is used as a source for a different appliance. When this option is selected, patch files are downloaded to the appliance's Patch and Windows Feature Update file share. |
| **Update Description Actions** | For each type of updates (*Signature*, *Feature Update Files*, *Patch Files*), it provides a description and access to the available actions:<br>• **Check for Update**: Click to download patch signature files.<br>• **Delete**: Click to immediately remove all patches or Windows Feature Updates from the appliance. This can be useful if you no longer need any patches and you want to quickly reclaim the disk space that they used.<br>• **Run Now**: Click to immediately download the patches or Windows Feature Updates to which you have subscribed, regardless of the subscription schedule. |

4. Select schedule options for patch and Windows Feature Update signatures in the *Schedule* section. File signatures include the security bulletins and other files that define patches and Windows Feature Updates downloaded from Quest.

| Option | Description |
|---|---|
| **Signature Download** | Select **None** to prevent the downloading of patch and Windows Feature Update signatures. |
| **Every __ hours** | Downloads signatures at a specified interval. Use caution when specifying frequent intervals (4, 8 or 12 hours), because this can increase bandwidth requirements. |
| **Every day at the specified time** | Select **day** to download patch or Windows Feature Update detection signatures every day, or select a day of the week to download once a week.<br>Select the time to start the download. Time is displayed in 24-hour clock format, where 0 is midnight, 1:00 a.m. is 1 and 11:00 p.m. is 23.<br>**NOTE:** When setting up patch or Windows Feature Update downloads, timing is important. The appliance activity log is created at 1:30, and maintenance tasks occur between 01:00 and 01:30. Quest recommends that you schedule downloads to occur after the log and maintenance tasks are complete, which is about 3:00. |
| **On the nth of every month or on a specific month at HH:MM** | Select the day of the month to download patch or Windows Feature Update detection signatures on a monthly basis. |

5. Set the schedule options for feature update and patch files.

| Option | Description |
|---|---|
| **After signature download** | Downloads packages after the signatures have been downloaded. This option is not available if **Patching** is disabled in the *Configure File Downloads* section. |
| **Every __ minutes** | Specifies the frequency with which packages are downloaded. This option is available only if *Files detected as missing* in the *Configure File Downloads* section is selected. |

| Option | Description |
|---|---|
| **Download Blackout: Start __ End __** | Specifies a time period during which files cannot be downloaded. For example, use an early morning stop time to prevent the process from using a large amount of network bandwidth during regular working hours.<br>If you select this option, the appliance stops file downloads at the specified time. It does not start file downloads again until the next specified download time. When the download resumes, it starts up where it left off. Downloads that are incomplete might not appear on the *Patch Catalog* or *Windows Feature Update Catalog*page. |

6. Click **Save**.

To schedule patch detection and deployment for managed devices, see Creating and managing patch schedules. To schedule Windows Feature Update detection and deployment for managed Windows 10 devices, see Configure Windows Feature Update schedules.

# Viewing available patches and download status

You can review the available patches and set appropriate patch download filters to download only the patches you need.

For example, once the patch packages are downloaded, you can set a filter to view patches based on category; view Operating System patches only.

## View available patches

After you have subscribed to patches, and the patches have been downloaded, you can view available patches.

You must subscribe to patch detection signatures and select patch download settings to view patches. See:

- Subscribe to patches
- Select patch and feature update download settings

1. Go to the *Patch Catalog* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Security**, then click **Patch Management**.
    c. On the *Patch Management* panel, click **Catalog**.
2. Search for application patches.
    a. Click the **Advanced Search** tab above the list on the right to display the *Advanced Search* panel.
    b. Enter search criteria:

    ```
    Patch Listing Information: Category | is | Application
    ```

    c. Click **Search**.

## View patch download status

After you have subscribed to patches, you can view patch download status.

You must subscribe to patches to view patch download status. See Subscribe to patches.

1. Go to the *Patch Catalog* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General

Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Security**, then click **Patch Management**.

c. On the *Patch Management* panel, click **Catalog**.

2. Do one of the following:

   - **In the *View By* drop-down list, which appears above the table on the right, select Download Status > Downloaded or Download Status > Not Downloaded.**
   - **Click the Advanced Search tab, which appears above the table on the right, then select search criteria. For example:**

     `Patch Listing Information: Download Status | is | Downloaded`

See Viewing patch information.

# Best practices for resolving patch subscription issues

Occasionally you may see an error message indicating that your patch subscription license has expired:

The error message

`Your patch subscription has expired. Please contact support for assistance.`

Before engaging the KACE support, you can take some preliminary steps to resolve the issue.

This error may be caused by one of the following issues:

- In most cases, it happens when your license key has passed its three year validation period.
- A new license key is provided, but the account may not be synchronized yet with the KACE database.

**If a new key has been requested but not yet delivered:**

Ensure the following email message has not been stopped by a spam filter. This is the message format of the new license key notification sent by the KACE licensing team:

`Sender: license@quest.com`

`Subject:` KACE Service Desk `License Number for (PO# <PO number>) order# <order number>`

**If a new key has been applied but the error persists:**

1. Validate your product license:
   a. Go to the appliance *Control Panel*.
      - If the Organization component is not enabled on the appliance, click **Settings**.
      - If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** in the drop-down list in the top-right corner of the page, then click **Settings**.

   b. On the left navigation bar, click **Appliance Updates** to display the *Appliance Updates* page.

   c. On the right of the *License Information*, click .

   d. Select *Validate License*, then click **Yes** to confirm.

   **TIP:** For complete information about this page, see Update the appliance license key.

2. Perform a manual patch signature download.

a. Go to the appliance *Patch Download Settings* page.
   - If the Organization component is not enabled on the appliance, click **Settings**.
   - If the Organization component is enabled on the appliance, log in to the appliance , `http://`**appliance_hostname**`/system`, or select **System** in the drop-down list in the top-right corner of the page, then click **Settings**.
   - Go to **Security** > **Patch Management** > **Patch Download Settings**.

b. Click **Run Now**. After the patch download is completed, the error message disappears.

**TIP:** For complete information about this page, see Select patch and feature update download settings.

**If you completed the above step, but the issue remains:**

1. Go to https://support.quest.com/create-service-request and create a new service request (SR).
2. Provide the answers to the following questions in the request:
   - When did the issue start for the first time?
   - Did something change before the issue?
   - Verify and confirm the issue in the patch download log. Document the findings in the SR or upload the log files into the SR.
   - Which license key is currently in use? The complete license key is required. If this is not possible, the last five characters are acceptable.
   - If available, what is the old (previous) license key?
   - What is the static IP Address of the appliance?
   - What is the MAC Address of the appliance?
3. Upload your appliance log files as an attachment to the SR.
   a. Go to the appliance *Control Panel*.
      - If the Organization component is not enabled on the appliance, click **Settings**.
      - If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** in the drop-down list in the top-right corner of the page, then click **Settings**.
   b. On the left navigation bar, click **Support**.
   c. In the *Troubleshooting Tools* section, click **Retrieve appliance activity logs**.
   d. Click **Save File** to download the logs.

**NOTE:** Clear your browser's cache after encountering an error situation during a patch download. Failing to do so may prevent the appliance from downloading patches after this error is encountered.

# Creating and managing patch schedules

You can manage patch schedules that detect, deploy, and rollback the patches to which you subscribe.

For information on subscribing to patches, see Subscribing to and downloading patches.

# About scheduling critical OS patches for desktops and servers

You can configure the appliance to install critical OS patches on desktops and servers according to a schedule.

Desktops are usually less crucial than servers and less mobile than laptops, so it is easier to schedule a time to patch them. Usually, you can schedule routine updates for the early morning hours before users arrive.

Servers run critical services that your organization requires. Schedule patching for servers in advance, and warn users of the temporary service outages that patching requires. Push server patches in the early morning hours or other times when the fewest number of users require the server resources.

## Workflow for critical OS patches for desktops and servers

The workflow includes identifying devices, identifying patches, scheduling actions, and deploying patches.

- **Identify desktops**: Create a Smart Label that identifies all devices that are desktops. This excludes servers and laptops. See Add a Smart Label for desktops.
- **Identify servers**: Create a Smart Label that identifies all servers. See Add a Smart Label for servers.
- **Identify critical OS patches**: Create a Smart Label that identifies all critical OS patches. See Add a Smart Label for critical OS patches.
- **Schedule detect and deploy actions**: Schedule a detect and deploy job that identifies whether the devices in the Smart Label need to be updated, deploys critical patches to them, and forces a reboot if required. See Configuring patch schedules.
- **Deploy patches individually to servers**: Schedule a job that deploys patches to servers as needed. See Configuring patch schedules.
- **Notify users**: When you schedule patching, be sure to notify users of the schedule so that they know when the devices they use are being patched. This is especially important if devices need to be restarted and might be unavailable as part of the patching process. You can notify users by sending email and other messaging services outside the appliance Administrator Console. See Best practices for patching.

# About scheduling critical patches for laptops

Because laptops are often powered off or disconnected from the network, it can be difficult to find a good time to patch them. The two most popular choices for patching laptops are at the start of the business day or during lunch time.

Most Quest KACE customers patch laptops using two schedules, one for detecting and one for deploying.

## Workflow for critical patches for laptops

The workflow for applying critical patches to laptops includes identifying devices, identifying patches, scheduling actions, and deploying patches.

Setting up automatic detect and deploy actions consists of the following workflow:

- **Identify critical patches**: Create a patch Smart Label to automatically identify critical patches for laptops. See Using Smart Labels for patching.
- **Schedule Detect actions**: Create and run a schedule to periodically detect critical patches on laptops. See Configuring patch schedules.
- **Schedule Deploy actions**: Create and run a schedule to periodically deploy critical patches on laptops. See Configuring patch schedules.
- **Check patching status**: Periodically check patching status using reports and the patch. See Viewing patch schedules, status, and reports.
- **Notify users**: Notify users of the patching schedule. You can notify users by sending email and other messaging services outside the appliance Administrator Console. See "Notify users when devices are being patched" in Best practices for patching.

# About scheduling non-critical patches

You can configure the appliance to install non-critical patches according to a schedule.

To schedule non-critical patches:

- **Detect patches**: Create a patching schedule to detect patches on all devices to determine the size of the patching job. See Configuring patch schedules.
- **Inactivate patches**: If there are patches you do not want to deploy, mark them as **Inactive**.
- **Test patches**: Create a schedule to detect and deploy patches to your test devices. See Configuring patch schedules.
- **Identify patches for desktops and servers**: Create a patch Smart Label to automatically capture the patches to deploy on servers. See Using Smart Labels for patching.
- **Detect and deploy desktop and server patches** (see Configuring patch schedules):
  - Create a schedule to periodically detect and deploy patches on your desktops.
  - Create a schedule to periodically detect and deploy patches on your servers.
- **Detect and deploy laptop patches** (see Configuring patch schedules):
  - Create a schedule to periodically detect patches on your laptops.
  - Create a schedule to periodically deploy patches on your laptops.
- **Check patching status**: Periodically check the patching status. See Viewing patch schedules, status, and reports.

# Configuring patch schedules

You can create and configure patch schedules and set a time for them to run. Patch schedules do not interfere with Managed Installations or other distributions.

## Fields in the Patch Schedule Detail pages

Fields in the *Schedule Detail* wizard and the *Schedule Detail* page enable you to configure and schedule patch actions.

### General Information

| Option | Description |
|---|---|
| **Name** | A name that identifies the schedule. This name appears on the *Patch Schedules* page. |
| **Description** | A brief description of the patch schedule. |

### Action section

The action associated with the patch schedule.

The patch action behavior is dependent on the combination of reboot, detect, deploy, and rollback selections you make. Whenever a patch action does both a Detect pass and something else, as is the case with Detect and Deploy and Detect and Rollback, the action is repeated cyclically until the Detect action finds no further patches to deploy or roll back. This behavior might result in multiple Reboot actions for a single scheduled run. In addition, the type of device you are patching affects the type of patch action to use.

The following actions are available:

- **Detect**: Detects patches that are installed on, or missing from, managed devices. Detect-only actions are recommended when the *Patch Download Settings* are configured to download only . Running a detect-only action before the deploy creates a list of patch files to download before deployment begins.
- **Detect and Stage**: Detects patches that are installed or missing from managed devices, and downloads patch files to the agent device for later deployment.
- **Detect and Deploy**: Detects and deploys patches to managed devices. These types of actions are used when managing desktops and servers. Detect and Deploy patching jobs require a connection between the device and the appliance; they do not run offline. For more information about messaging protocol connections, see Configure Agent communication and log settings.
- **Detect, Stage and On-demand Deploy**: Detects patches that are installed or missing from managed devices, downloads patch files to the agent device, and causes the Windows system tray on the agent device to alert the user that the patches are ready for deployment. The user can then initiate the deployment process at their convenience.
  - These schedules are only available for Windows devices with agents version 11.0 or later.
  - The *Agent Status Icon On Device* option must be enabled in the agent communication settings. You can find these settings on the *Organization Detail* page, under *Communication and Agent Settings* (if one or more Organization components are enabled), or on the *Communication Settings* page (if you do not have an Organization component). For more information, see Configure Agent communication and log settings.
- **Deploy**: Deploys applicable patches to managed devices. This is useful when you know that specific patches need to be deployed to managed devices. A final Detect job runs either after the patch is deployed or, if a reboot is required, after the device reboots and the Agent reconnects to the appliance.
- **Detect and Rollback**: Detects and removes unwanted patches from managed devices. Rollbacks may not be available for some patches. See Determine whether a patch can be rolled back.
- **Rollback**: Removes unwanted patches from managed devices. Rollbacks may not be available for some patches. See Determine whether a patch can be rolled back.

### Detect section

| Option | Description |
|---|---|
| **All Patches** | Detect all available patches. This process can take a long time. Also, it might detect patches for software that is not installed on, or required by, managed devices. For example, if managed devices use anti-virus applications from only one vendor, you might not need to detect patches for all anti-virus vendors. *All Patches*, however, |

| Option | Description |
|---|---|
| | detects all missing patches regardless of whether they are required by managed devices. To refine patch detection, set up labels for the patches you want to detect, then use the *Patch Labels* option. |
| **Patch Labels** | Restrict the action to the patches in the labels that you select. This is the most commonly used option.<br>1. Click **Manage Associated Labels**.<br>2. In the *Select Labels* dialog box that appears, drag one or more labels (as applicable) to the *Limit Detect to* area, then click **OK**.<br>To use this option, you must already have Smart Labels for the applicable patches. See Using Smart Labels for patching. |
| **Select from suggested criteria** | Select a patch using a pre-defined criteria. This allows you to focus on a specific type of patches based on your OS. For example, you can choose the critical Windows patches issued in the past 30 days.<br>1. Click **Select from suggested criteria**.<br>2. In the *Select Suggested Criteria* dialog box that appears, click **Select Suggested Criteria**, then click **Save**. |
| **Detect Timeout** | The amount of time, in hours, for the patching action to complete. |

### Deploy section

| Option | Description |
|---|---|
| **All Patches** | Deploy all patches to the selected devices. |
| **Patch Labels** | Restrict the action to the patches in the labels that you select. This is the most commonly used option.<br>1. Click **Manage Associated Labels**.<br>2. In the *Select Labels* dialog box that appears, drag one or more labels (as applicable) to the *Limit Deploy to* area, then click **OK**.<br>To use this option, you must already have Smart Labels for the applicable patches. See Using Smart Labels for patching. |
| **Select from suggested criteria** | Select a patch using a pre-defined criteria. This allows you to focus on a specific type of patches based on your OS. For example, you can choose the critical Windows patches issued in the past 30 days.<br>1. Click **Select from suggested criteria**.<br>2. In the *Select Suggested Criteria* dialog box that appears, click **Select Suggested Criteria**, then click **Save**. |
| **Maximum Deploy Attempts** | The maximum number of attempts the appliance deploys or rolls back the patch. Specify a number between one '1' and ten "10". If you specify zero '0', the deployment or rollback does not run. A value higher than ten "10" results in an error message.<br>As a last step in patch deployment or rollback, the appliance verifies whether the patch was deployed or rolled back successfully. If a deployment or rollback fails, the |

| Option | Description |
|---|---|
| | appliance attempts to deploy or rollback the patch again until one of the following occurs:<br>• The deployment or rollback succeeds.<br>• The maximum number of attempts is reached.<br>• The scheduled deployment or rollback period ends and patching is suspended. |
| **Deploy Timeout** | The amount of time, in hours, for the patching action to complete. |

### Rollback section

| Option | Description |
|---|---|
| **All Patches** | Roll back all patches on the selected devices. |
| **Patch Labels** | Restrict the action to the patches in the labels that you select. This is the most commonly used option.<br>1. Click **Manage Associated Labels**.<br>2. In the *Select Labels* dialog box that appears, drag one or more labels (as applicable) to the *Limit Rollback to* area, then click **OK**.<br>To use this option, you must already have Smart Labels for the applicable patches. See Using Smart Labels for patching. |
| **Select from suggested criteria** | Select a patch using a pre-defined criteria. This allows you to focus on a specific type of patches based on your OS. For example, you can choose the critical Windows patches issued in the past 30 days.<br>1. Click **Select from suggested criteria**.<br>2. In the *Select Suggested Criteria* dialog box that appears, click **Select Suggested Criteria**, then click **Save**. |
| **Maximum Rollback Attempts** | The maximum number of attempts, between 0 and 99, to indicate the number of times the appliance tries to deploy or rollback the patch. If you specify 0, the appliance attempts to deploy or rollback the patch indefinitely.<br>As a last step in patch deployment or rollback, the appliance verifies whether the patch was deployed or rolled back successfully. If a deployment or rollback fails, the appliance attempts to deploy or rollback the patch again until one of the following occurs:<br>• The deployment or rollback succeeds.<br>• The maximum number of attempts is reached.<br>• The scheduled deployment or rollback period ends and patching is suspended. |
| **Deploy Timeout** | The amount of time, in hours, for the patching action to complete. |

### On-demand Deployment Timeout Settings section

| Option | Description |
|---|---|
| **Automatically Deploy After** | The amount of time after which the deployment takes place if the agent device does not receive any input from the user. |

### Devices section

| Option | Description |
|---|---|
| **All Devices** | To apply this schedule to all managed devices, select this options. Clear the check box to limit the patch acton to specific labels or devices. |
| **Device Labels** | Restrict the action to the patches in the labels that you select. This is the most commonly used option.<br>1. Click **Manage Associated Labels**.<br>2. In the *Select Labels* dialog box that appears, drag one or more labels (as applicable) to the *Limit Run to* area, then click **OK**.<br>To use this option, you must already have Smart Labels for the applicable patches. See Using Smart Labels for patching. |
| **Devices** | Run patch actions on the devices that you select.<br>• To search for devices, begin typing in the field.<br>• To remove all specified devices and start again, click **Remove All**.<br>• Scoped users can see only those devices that are associated with their role, when the role is assigned a label. For more information about user roles, see Add or edit User Roles. |
| **Operating Systems** | Select the operating systems of the devices that you want to patch. The default is all operating systems. When this option is configured, the schedule only applies to devices with the selected operating systems.<br>1. Click **Manage Operating Systems**.<br>2. In the **Operating Systems** dialog box that appears, select the OS versions in the navigation tree, as applicable.<br>You have an option to select OS versions by their family, product, architecture, release ID, or build version. You can choose a specific build version, or a parent node, as needed. Selecting a parent node in the tree automatically selects the associated child nodes. This behavior allows you to select any future OS versions, as devices are added or upgraded in your managed environment. For example, to select all build current and future versions associated with the Windows 10 x64 architecture, under **Windows > Windows 10**, select **x64**. |

### Notify section

| Option | Description |
|---|---|
| **Options** | The alerts displayed to users when patch actions run. To perform the action without notifying the user, leave the *Options* field blank.<br>• **OK**: Run immediately.<br>• **Cancel**: Cancel until the next scheduled run.<br>• **Snooze**: Prompt the user again after the *Snooze Duration*. |
| **Timeout** | The amount of time, in minutes, for the dialog to be displayed before an action is performed. If this time period elapses without the user pressing a button, the appliance performs the action specified in the *Timeout* drop-down list. |

| Option | Description |
|---|---|
| **Timeout Action** | The action to be performed when the **Timeout** period elapses without the user choosing an option. |
| **Snooze Duration** | The amount of time, in minutes, for the period after the user clicks **Snooze**. When this period elapses, the dialog appears again. |
| **Snooze Until Limit** | Select the **Snooze Until Limit** check box to enable the user to Snooze the patch action a specified number of times. Specify the number of **Attempts**. |
| **Initial Message** | The message to be displayed to users before the action runs. To customize the logo that appears in the dialog, see Configure appliance General Settings with the Organization component enabled. |
| **Progress Message** | The message displayed to users during the patch action. |
| **Completion Message** | The message displayed to users when the patch action is complete. |

### Reboot section

| Option | Description |
|---|---|
| **Options** | The options for rebooting the managed device:<br>• **No Reboot**: The device does not reboot even though a reboot might be required for the patch to take effect. This option is not recommended because deploying patches without rebooting when required can leave systems unstable. Further, patches that require reboots are only shown as deployed after the reboot.<br>• **Prompt User**: Waits for the user to accept the reboot before restarting the device. If the user snoozes or cancels the reboot, patching stops until a reboot occurs. Selecting a Snooze Duration in the agent dialog box that appears on the target device pauses the reboot prompt for the specified snooze interval.<br>• **Force Reboot**: Reboots as soon as a patch requiring it is deployed. Forced reboots cannot be canceled. Force Reboot works well for desktops and servers. You might not want to force reboot on laptops. Force Reboot works well with servers because they usually have no dedicated users. However, it is important to warn users that services will not be available when servers are being patched and re-booted. See Best practices for patching. |
| **Automatically reboot when no one is logged in** | Automatically reboot the managed device if no users are logged in. |
| **Message** | The message to be displayed to the user before the device reboots. For information about adding a custom logo to the message dialog, see Configure appliance General Settings with the Organization component enabled. |
| **Timeout** | The amount of time, in minutes, for the dialog to be displayed before an action is performed. If this time period elapses without the user pressing a button, the appliance performs the action specified in the *Timeout* drop-down list.<br>When *Force Reboot* is selected, the timeout behavior takes into consideration the `KUSerAlert` and global KACE Agent process timeouts. The global timeout, set |

| Option | Description |
|---|---|
| | through the *Agent and Communication Settings* section, always determines how long any agent-launched processes can run for, including the `KUserAlert` timeout. For example, if the `KUserAlert` timeout is set to two hours, and you set the global timeout to one hour, the agent will stop the `KUserAlert` because it runs too long. Therefore the global timeout must be set to the desired timeout that is longer than the `KUserAlert` timeout. This value must be set accordingly.<br>For more information about agent settings, see Configure Agent communication and log settings. |
| **Timeout Action** | The action to be performed when the **Timeout** period elapses without the user choosing an option. |
| **Reboot Delay (countdown)** | Postpone the reboot using a countdown. The countdown is in minutes. |
| **Reboot Now** | Reboot the device immediately. |
| **Reboot Later** | Reboot the device later. |
| **Number of prompts** | The number of prompts the user receives before the device reboots. For example, if you enter a value of 5, the device automatically reboots the fifth time the user receives the reboot prompt. In other words, the user can delay the reboot only four times if the **Number of prompts** value is set to 5. |
| **Reprompt Interval** | The time that elapses before the user is reprompted to reboot. |

### Schedule section

| Option | Description |
|---|---|
| **None** | Run in combination with an event rather than on a specific date or at a specific time. This option is useful if you want to patch servers manually, or perform patch actions that you do not want to run on a schedule. |
| **Every _ hours** | Run at a specified interval. |
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |
| **Run on the n**th **of every month/ specific month at HH:MM** | Run on the **n**th day every month, (for example, the first or the second) day of every month, or a specific month, at the specified time. |
| **Run on the nth weekday of every month/specific month at HH:MM** | Run on the specific weekday of every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>`* * * * *`<br>`\| \| \| \| +————————day of week (0-6)(Sun=0)` |

| Option | Description |
|---|---|
| | <pre>\| \| \| +----------month (1-12)<br>\| \| +----------day of month (1-31)<br>\| +----------hour (0-23)<br>+----------minute (0-59)</pre><br>Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (/)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3.<br>Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |
| **View Task Schedule** | Click to view the task schedule. The *Task Schedule* dialog box displays a list of scheduled. Click a task to review the task details. For more information, see View task schedules. |
| **Timezone** | The timezone to use when scheduling the action. Select **Server** to use the timezone of the appliance. Select **Agent** to use the timezone of the managed device. |
| **Run on next connection if offline** | Run the action the next time the managed device connects to the appliance, if the device is currently offline. This option is useful for laptops and other devices that are periodically offline. If this option is not selected, and the device is offline, the action does not run again until the next scheduled time. |
| **Delay run after reconnect** | Delay the schedule by a specified amount of time. The time delay period begins when the patch action is scheduled to run. |
| **End after** | The time limit for patching actions.<br>For example, if you schedule patches to run at 04:00, you might want all patching actions to stop at 07:00 to prevent bandwidth issues when users start work. To do so, you could specify **180** in the minutes box.<br>When this time limit is reached, any patching tasks that are in progress are suspended, and their status on Security logs is *Suspended*.<br>These patching tasks do not resume on the next run and instead start from the beginning with each scheduled patching action. |

# Configure patch schedules

You can create and configure patch schedules and set a time for them to run. Patching schedules do not interfere with Managed Installations or other distributions.

1. Start the *Schedule Detail* wizard:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Security**, then click **Patch Management**.
    c. On the *Patch Management* panel, click **Schedules**.
    d. On the *Patch Schedules* list page, do one of the following:

    - To create a new patch schedule, click **Choose Action > New (Wizard)**.
    - To edit an existing schedule, click the schedule name in the list, then on the *Patch Schedule Summary* page that appears, click **Edit**.

    **The *Schedule Detail* wizard appears, as selected. The same options are available on the *Schedule Detail* page. You can switch between the page and wizard by clicking Classic View or Wizard View in the top-right corner, as applicable.**

2. In the *Schedule Detail* wizard, on the *General Information* page, specify the general details for this schedule.

    **See General Information for descriptions of the options.**

3. Click **Next**.
4. On the *Action* page, select the action that you want to associate with the schedule.

    **See Action section for descriptions of the options.**

5. **Detect, Detect and Stage, Detect and Deploy, Detect, Stage and On-demand Deploy, Detect and Rollback schedules only**. On the *Action* page, in the *Detect* section, specify the detection options for the schedule.

    **See Detect section for descriptions of the options.**

6. **Detect and Deploy, Detect, Stage and On-demand Deploy, and Deploy schedules only**. In the *Deploy* section, specify the detection options for the schedule.

    **See Deploy section for descriptions of the options.**

7. **Detect and Rollback and Rollback schedules only**. In the *Rollback* section, specify the rollback options for the schedule.

    **See Rollback section for descriptions of the options.**

8. **Detect, Stage and On-demand Deploy schedules only**. In the *OnDemand Deployment Timeout Settings* section, specify the deployment timeout option for the Detect, Stage and On-demand Deploy schedule.

    **See On-demand Deployment Timeout Settings section for descriptions of the options.**

9. Click **Next**.
10. On the *Devices* page, specify the devices you want to associate with this schedule.

    **See Devices section for descriptions of the options.**

11. Click **Next**.
12. **Detect and Deploy, Deploy, Detect and Rollback, and Rollback schedules only**. On the *Notification* page, configure the notification options for the schedule.

**See Notify section for descriptions of the options.**

13. Click **Next**.
14. In the *Reboot* section, specify the reboot options for the schedule.

    **See Reboot section for descriptions of the options.**

15. Click **Next**.
16. In the *Schedule* section, specify options for the schedule.

    **See Schedule section for descriptions of the options.**

17. Click **Save**.

    **The *Patch Schedule Summary* page appears, displaying the newly created or updated schedule. For more information about this page, see Review patch schedule details. If you added any devices that match the Smart Label criteria, they are automatically included in the patching schedule.**

# Error codes caused by patching and scripting

The following Fail error codes that can be encountered during patching (Detection or Deployment phase only) or scripting.

**Table 30. Error codes encountered during patching or scripting**

| Error code | Description |
|---|---|
| 8001 | The command sent to the plugin unrecognized by the `KPluginsKacePatch` |
| 8002 | Failure parsing the command sent to the plugin |
| 8003 | Failure downloading a Manifest file |
| 8004 | Failure to extract the downloaded Manifest file |
| 8005 | General failure while handling the PreDetect command (for example, invalid function inputs) |
| 8007 | Failure to generate PreDetect results |
| 8008 | General failure while handling the Detect command (for example, invalid function inputs) |
| 8009 | Failure parsing the Detect Manifest file |
| 8010 | Failure to generate Detect results |
| 8011 | A reboot is pending |
| 8012 | Failure to upload a results log |
| 8013 | General failure while handling the Detect file (for example, invalid function inputs) |
| 8014 | Failure downloading a patch Detect file |
| 8015 | Checksum mismatch between the patch Detect file and the detection Manifest record |

| Error code | Description |
|---|---|
| 8016 | Failure to create a checksum file for the patch Detect file |
| 8017 | Failure to load the patch Detect file |
| 8018 | Failure to decrypt the patch Detect file |
| 8019 | Failure to unzip the patch Detect file |
| 8020 | Failure to parse the json in the patch Detect file |
| 8021 | Detection type in the patch Detect file not recognized as a valid detection method |
| 8100 | Failure parsing the Manifest file |
| 8101 | General failure while handling the Deploy command (for example, invalid function inputs) |
| 8102 | General failure while handling the Rollback command (for example, invalid function inputs) |
| 8103 | Invalid Handler Specific Data (HSD) type |
| 8150 | Checksum mismatch between the requested file and the Manifest record |
| 8151 | Failure downloading a requested file |
| 8152 | Failure to create a checksum file for a downloaded file |
| 8200 | Invalid command scalar operation |
| 8201 | Invalid command string operation |
| 8202 | Invalid command |
| 8250 | Invalid path to the results file |
| 8251 | Failure to create a results file |

# Viewing patch schedules, status, and reports

You can view patch schedules as well as the status of patches, either in general or by device. In addition, you can search for individual packages within patches, and you can view patch-related reports.

## View a list of patch schedules

You can view summary information for the patch schedules that have been created on the appliance. If the Organization component is enabled on your appliance, you view patch schedules for each organization separately.

1. Go to the *Patch Schedule* page:

a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
b. On the left navigation bar, click **Security**, then click **Patch Management**.
c. On the *Patch Management* panel, click **Schedules**.

**Columns available on the *Patch Schedules* page include:**

| Option | Description |
|---|---|
| **Last Update** | The date and time the patch schedule was updated. |
| **Name** | The name of the patch schedule. Click to see more details on the *Patch Schedule Summary* page. For more information, see Review patch schedule details. |
| **Schedule** | The frequency at which the patch schedule is set to run. Disabled indicates that the patch is not set to run on a schedule. |
| **Action** | The type of patch action to be performed. |
| **Reboot Option** | Whether the patch schedule requires managed devices to reboot when the patch runs. |
| **All Devices** | Whether the patch schedule is targeting all devices (Yes) or selected devices (No). |
| **Pending** | The number of managed devices on which the patch is scheduled to run. Patches with this status show one of the following in the *Security* section of the *Device Detail* page:<br>• *waiting to connect*<br>• *scheduled*<br>• *waiting to schedule* |
| **Downloading** | The number of managed devices that are downloading the patch. Patches with this status show the following in the *Security* section of the *Device Detail* page: *downloading* |
| **Executing** | The number of managed devices on which the patch is running. Patches with this status show one of the |

| Option | Description |
| --- | --- |
| | following in the *Security* section of the *Device Detail* page:<br>• *handshake*<br>• *detecting*<br>• *rolling back*<br>• *deploying*<br>• *cleanup*<br>• *verifying*<br>• *alerting*<br>• *upload* |
| **Rebooting** | The number of managed devices that are rebooting as part of the patching process. Patches with this status show one of the following in the *Security* section of the *Device Detail* page:<br>• *rebooting*<br>• *reboot pending*<br>• *connecting* |
| **Paused** | The number of managed devices on which the patching process is paused or snoozed. Patches with this status show one of the following in the *Security* section of the *Device Detail* page:<br>• *reboot snoozed*<br>• *snoozed* |
| **Succeeded** | The number of managed devices on which the patching process finished successfully. Patches with this status show the following in the *Security* section of the *Device Detail* page: *completed*. |
| **Failed** | The number of managed devices for which errors were reported during the patching process. Patches with this status show one of the following in the *Security* section of the *Device Detail* page:<br>• *suspended*<br>• *cancelled* |
| **Offline** | The number of managed devices that were not connected when the patching process was scheduled to run. Patches with this status show the following in the *Security* section of the *Device Detail* page: *not scheduled*. |

| Option | Description |
|---|---|
| **Complete** | The number of managed devices on which the patching process completed with a status of *Succeeded*, *Failed*, or *Offline*. |

2. (Optional) To change column visibility, select **Column Visibility** from the *Table Options* drop-down list above the table on the right.

# Review patch schedule details

When you configure a patching schedule, this page displays details about the schedule configuration and its status.

1. Go to the *Patch Schedule Summary* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Security**, then click **Patch Management**.
    c. On the *Patch Management* panel, click **Schedules**.
    d. Click the name of a patch schedule.
2. Review the contents of the *Configuration* section.

| Option | Description |
|---|---|
| **Created** | The date and time the schedule is created. |
| **Modified** | The date and time the schedule is last modified. |
| **Last Run** | The date and time the schedule is last run. |
| **Name** | The name of the schedule. |
| **Action** | The action associated with the schedule:<br>• **Detect**: Detects patches that are installed on, or missing from, managed devices. Detect-only actions are recommended when the *Patch Download Settings* are configured to download only . Running a detect-only action before the deploy creates a list of patch files to download before deployment begins.<br>• **Detect and Stage**: Detects patches that are installed or missing from managed devices, and downloads patch files to the agent device for later deployment.<br>• **Detect and Deploy**: Detects and deploys patches to managed devices. These types of actions are used when managing desktops and servers. Detect and Deploy patching jobs require a connection between the device and the appliance; they do not run offline. For more information about messaging protocol connections, see Configure Agent communication and log settings.<br>• **Detect, Stage and On-demand Deploy**: Detects patches that are installed or missing from managed devices, downloads patch files to the agent device, and causes the Windows system tray on the agent device to alert the user that the |

| Option | Description |
|---|---|
| | patches are ready for deployment. The user can then initiate the deployment process at their convenience.<br>◦ These schedules are only available for Windows devices with agents version 11.0 or later.<br>◦ The *Agent Status Icon On Device* option must be enabled in the agent communication settings. You can find these settings on the *Organization Detail* page, under *Communication and Agent Settings* (if one or more Organization components are enabled), or on the *Communication Settings* page (if you do not have an Organization component). For more information, see Configure Agent communication and log settings.<br>• **Deploy**: Deploys applicable patches to managed devices. This is useful when you know that specific patches need to be deployed to managed devices. A final Detect job runs either after the patch is deployed or, if a reboot is required, after the device reboots and the Agent reconnects to the appliance.<br>• **Detect and Rollback**: Detects and removes unwanted patches from managed devices. Rollbacks may not be available for some patches. See Determine whether a patch can be rolled back.<br>• **Rollback**: Removes unwanted patches from managed devices. Rollbacks may not be available for some patches. See Determine whether a patch can be rolled back. |
| **Description** | A brief description of the patch schedule. |
| **Devices** | This field only appears when the schedule is configured to apply to all devices. |
| **Device Label** | One or more Smart Labels associated with the devices against which the schedule runs. For more information, see Using Smart Labels for patching. This field only appears when the schedule is configured to apply to selected devices. |
| **Device Name** | One or more selected devices against which the schedule runs. This field only appears when the schedule is configured to apply to selected devices. |
| **Patches to Detect** | **Detect schedules only**. This field only appears when the schedule is configured to detect all patches. |
| **Detect Label** | **Detect schedules only**. One or more Smart Labels associated with the scheduled patches. For more information, see Using Smart Labels for patching. This field only appears when the schedule is configured to detect selected patches. |
| **Patches to Deploy** | **Deploy schedules only**. This field only appears when the schedule is configured to deploy all patches. |
| **Deploy Label** | **Deploy schedules only**. One or more Smart Labels associated with the scheduled patches. For more information, see Using Smart Labels for patching. This field only appears when the schedule is configured to deploy selected patches. |
| **Patches to Rollback** | **Rollback schedules only**. This field only appears when the schedule is configured to remove all patches. |

| Option | Description |
|---|---|
| **Rollback Label** | **Rollback schedules only**. One or more Smart Labels associated with the scheduled patches. For more information, see Using Smart Labels for patching. This field only appears when the schedule is configured to remove selected patches. |
| **Alerts** | **Schedules without the Deploy action only**. The alerts displayed to users when patch actions run:<br>• **OK**: Run immediately.<br>• **Cancel**: Cancel until the next scheduled run.<br>• **Snooze**: Prompt the user again after the *Snooze Duration*. |
| **Reboot** | **Schedules without the Deploy action only**. The options for rebooting the managed device:<br>• **No Reboot**: The device does not reboot even though a reboot might be required for the patch to take effect. This option is not recommended because deploying patches without rebooting when required can leave systems unstable. Further, patches that require reboots are only shown as deployed after the reboot.<br>• **Prompt User**: Waits for the user to accept the reboot before restarting the device. If the user snoozes or cancels the reboot, patching stops until a reboot occurs. Selecting a Snooze Duration in the agent dialog box that appears on the target device pauses the reboot prompt for the specified snooze interval.<br>• **Force Reboot**: Reboots as soon as a patch requiring it is deployed. Forced reboots cannot be canceled. Force Reboot works well for desktops and servers. You might not want to force reboot on laptops. Force Reboot works well with servers because they usually have no dedicated users. However, it is important to warn users that services will not be available when servers are being patched and re-booted. See Best practices for patching. |
| **Schedule** | The selected schedule details. Click **View Task Schedule** to see a detailed task scheduler. In the dialog box that appears, click a task to review the task details. For more information, see View task schedules. |
| **Run on Next Connection in Offline** | Indicates if the schedule runs the action the next time the managed device connects to the appliance, if the device is currently offline. |
| **Delay Run After Reconnect** | If configured, this option indicates the amount of time the schedule is delayed for. The time delay period begins when the patch action is scheduled to run. |
| **End After** | If configured, this option indicates the maximum amount of time the schedule can run for. When this time limit is reached, any patching tasks that are in progress are suspended. |

3. In the *Schedule Status* section, review the overall patch schedule status on any of the following tabs:

| Tab | Contents |
|---|---|
| **By Machine** | Devices selected for patching. Each entry displays the device name, its IP address, the patching status (see Patching status definitions), patch results, and the date the patching completed. You can expand a device node to view the applicable patches. Each patch entry shows the patch ID, associated Knowledge Base article number, |

| Tab | Contents |
|---|---|
| | patch name, and the current status (Patched, Not Patched, Staged, and Detect, Stage, or Deploy Failure). |
| **By Patch** | Patches selected for detection, staging, and deployment. Each entry displays the patch ID, associated Knowledge Base article number, patch name, and the numbers of devices that are patched, not patched, and those that encountered detect or deploy failures. |
| **Patched** | Patches successfully installed on devices. Each entry displays the patch ID, associated Knowledge Base article number, and the patch name. You can expand a patch node to view the devices on which the patch is installed. |
| **Not Patched** | Patches that are not installed on devices. Each entry displays the patch ID, associated Knowledge Base article number, and the patch name. You can expand a patch node to view the devices on which the patch is to be installed. |
| **Staged** | Patches that are staged for installation. Staging refers to patch files being copied to the agent device for later deployment. Each entry displays the patch ID, associated Knowledge Base article number, and the patch name. You can expand a patch node to view the devices on which the patch is to be installed. |
| **Detect Failures** | Incomplete patches that resulted in a detection failure. Each entry displays the patch ID, associated Knowledge Base, patch name, and the associated error code (see Error codes caused by patching and scripting). You can expand a patch node to view the devices on which the failure is encountered. |
| **Stage Failures** | Incomplete patches that resulted in a staging failure. Each entry displays the patch ID, associated Knowledge Base article number, patch name, and the associated error code (see Error codes caused by patching and scripting). You can expand a patch node to view the devices on which the failure is encountered. |
| **Deploy Failures** | Incomplete patches that resulted in a deployment failure. Each entry displays the patch ID, associated Knowledge Base, patch name, and the associated error code (see Error codes caused by patching and scripting). You can expand a patch node to view the devices on which the failure is encountered. |

4. **Optional**. After reviewing the schedule details, you can perform any of the following actions:
   - To edit the patching schedule, click **Edit**. For more information, see Configure patch schedules.
   - To run the patching schedule, click **Run Now**.
   - To make a copy of the patching schedule, click **Duplicate**.
   - To delete the patching schedule, click **Delete**.

# Patching status definitions

A patching status indicates the state of the current task. This information appears on the *Patch Schedule Summary* page, in the *Schedule Status* section. For more information, see Review patch schedule details.

**Table 31. Patching status definitions**

| Patching status | Definition |
|---|---|
| **alerting** | Alert sent to user, waiting for confirmation. |

| Patching status | Definition |
|---|---|
| **cancelled** | Task cancelled by user. |
| **cleanup** | Payload files from agent not accessed since last 90 days. |
| **completed** | Task completed. |
| **connecting** | Agent reconnecting after reboot. |
| **deploy** | Patch deployment in progress. |
| **detect** | Patch detection in progress. |
| **downloading** | Patch deployment waiting for packages to download. |
| **error** | Task not completed due to time out or other error. |
| **not scheduled** | Task not yet created for this device. |
| **predetect** | Pre-detection with the Agent in progress. |
| **reboot pending** | Patches deployed, reboot required to continue. |
| **reboot snoozed** | Patches deployed, reboot required to continue. After a configured interval the end user is reminded to reboot. |
| **rolling-back** | Patch rollback in progress. |
| **scheduled** | Task scheduled and is waiting to run. |
| **snoozed** | Task snoozed, user to be reminded after the configured snooze duration. |
| **stage** | Downloading files for later deployment. |
| **suspended** | Task suspended before reaching completion. |
| **uploading logs** | Uploading pre-detection, detection, deployment, verification, or rollback logs. |
| **verifying** | Post-deployment verification detection in progress. |
| **version check** | Task checking the patch version. |
| **waiting on-demand deploy** | Task waiting for the user action to deploy the schedule. |
| **waiting to connect** | Device disconnected. |
| **waiting to schedule** | Task waiting to schedule in the Agent's time zone. |

# View patch status

You can view the status of patches, including a list of the devices on which patches have been deployed.

1. Go to the *Patch Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Security**, then click **Patch Management**.
    c. On the *Patch Management* panel, click **Catalog**.
2. Scroll down to the *Deployment Status* table.

    **The table shows details about the patch, including a list of the devices on which the patch has been deployed.**

# View patch status by device

You can view patch status for each managed device.

1. Go to the organization *Device Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Dashboard**.
    c. Click the name of a device.
2. Scroll down to the *Security* section, then click the **Patching Detect/Deploy Status** link.

The list of the patches installed on the device appears.

# View files within patches

You can view the files contained in each patch.

1. Go to the *Patch Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Security**, then click **Patch Management**.
    c. On the *Patch Management* panel, click **Catalog**.
2. Scroll down to the *Associated Files* table.

# View patch reports

You can view reports related to patching.

1. Go to the Patch Management *Reports* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Security**, then click **Patch Management**.

c. On the *Patch Management* panel, click **Reporting**.

**The *Reports* page appears, with Patching selected in the *View By* drop-down list. This page provides links to patch-related reports.**

# Managing patch rollbacks

If rollback is supported for patches, you can roll back patches to remove them from managed devices.

Some vendors and patch-types do not support rollbacks, however. For example, large software patches, such as Service Packs, cannot be rolled back.

## Determine whether a patch can be rolled back

You can search the *Patch Catalog* page to find out whether patches can be rolled back after they are deployed to managed devices.

1. Go to the *Patch Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Security**, then click **Patch Management**.
    c. On the *Patch Management* panel, click **Catalog**.
    d. Click the name of a patch.
2. Click the **Advanced Search** tab above the list on the right to display the *Advanced Search* panel.
3. Enter the following search criteria:

```
Patch Listing Information: Support Rollback | is | True
```

4. **Optional**: Enter additional search criteria.
5. Click **Search**.

Patches that support rollback appear.

## Undo the last patching job

If the patch vendor supports a rollback, you can undo the last patch deployment by creating and running a Rollback or Detect and Rollback patching schedule.

1. Go to the *Patch Schedule Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Security**, then click **Patch Management**.
    c. On the *Patch Management* panel, click **Schedules**.
    d. Click the name of a patch schedule.
2. In the *Action* drop-down list, select **Rollback** or **Detect and Rollback**.
3. Select the patches to rollback, in the same way that you specified them in the original schedule, by creating a Smart Label.

**See Using Smart Labels for patching.**

This option is supported only for removing the last installed patch on a software application. See Managing patch rollbacks.

4. Specify additional settings for the patch schedule as needed.

**For more information, see Configure patch schedules.**

# Managing patch inventory

Patches that have been downloaded to the appliance are referred to as patch inventory. You can view details and statistics about patch inventory, and you can mark patches as active or inactive. In addition, you can use labels to manage patches.

# Prerequisites for managing patch inventory

Before managing patch inventory, you need to subscribe to and download patches.

See:

- Subscribing to patches and configuring download settings
- Select patch and feature update download settings

# Viewing patch information

You can view information about patches and view patch information for devices as needed.

## View downloaded patches

The *Patch Catalog* list displays the patch detection signatures that have been downloaded for subscribed patches.

1. Go to the patch *Catalog* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Security**, then click **Patch Management**.
    c. On the *Patch Management* panel, click **Catalog**.
2. Use this drop-down list to list the patches.
    - **View By: Control the patches shown in the list based on the drop-down list selection.**

| Column | Description |
|---|---|
| **All Patches** | View all patches. |
| **Label** | View patches tagged with a label. This information is only visible if there are labels created. |
| **Status** | View **Active**, **Disabled**, or **Inactive** patches. |
| **Download Status** | View patches that are **Downloaded** or **Not Downloaded**. |

| Column | Description |
|---|---|
| **Severity** | Filter the patch list by the importance specified by vendors, such as Microsoft. Severity levels include **Critical**, **Important**, **Low**, and so on. |
| **Most Recent** | View patches that were most recently added. You can display the patches added in the **Last 1 Month**, **Last 6 Months**, **Last 1 Year**, or **Last 2 Years**. |
| **Year** | Filter the patch list by the year the patch was released. |
| **Operating System** | Filter the patch list by operating system. |

3. The following information appears in columns on the *Patch Catalog* page:

| Column | Description |
|---|---|
| **Status** | The status of the patch: Active, Inactive, or Disabled.<br>• **Active**: Patches that you subscribe to, that are downloaded, and that are ready to detect or deploy.<br>• **Inactive**: Patches that you subscribe to, but that have been marked as inactive to prevent them from being detected or deployed automatically.<br>• **Disabled**: Patches that do not match your subscription. These patches can only be detected when the *Detect Disabled Patches* option is enabled in your patch subscription. These patches cannot be deployed unless they meet the subscription criteria. |
| **Package** | The patch identification information. Labels applied to the patch are also displayed in this column. |
| **Name** | The name of the patch. |
| **Released** | The date the patch became available. |
| **Publisher** | The name of the publisher of the patch. |
| **Severity** | The importance of the patch as determined by the publisher, such as Microsoft. |
| **Reboot** | Whether devices must be rebooted to complete the patching process. |
| **Compliance** | The percentage of patches installed versus scheduled. |
| **Installed** | The number of devices that have received the patch. |
| **Missing** | The number of devices that have been detected as needing the patch and that are waiting for deployment. |
| **Error** | The number of devices that have failed the maximum number of deployment attempts. The maximum number of deployment attempts is configured in the patch schedule. See Configuring patch schedules. |

| Column | Description |
|---|---|
| **Size** | The size of the patch file.<br>• **Black color**: Inactive or Disabled patches.<br>• **Red color**: Patches to which you are subscribed; however, no associated packages for this patch have been downloaded at this time. To see which associated packages are missing, click the patch name to view the patch detail page.<br>• **Size = 0**: None of the patch packages are downloaded.<br>• **Actual size** (other than zero): At least one of the patch packages has been downloaded. |
| **Superseded** | Patches that have been replaced by other patches and are no longer required. |

# View patch details

Patch details include vendor information, deployment status, and notes. In addition, you can assign labels to patches when you view patch details.

1. Go to the *Patch Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Security**, then click **Patch Management**.
    c. On the *Patch Management* panel, click **Catalog**.
    d. Click a patch name.

    **The *Patch Detail* page appears, displaying complete information about the patch.**

# Resetting the number of patch deploy attempts

When a patch deployment has been attempted the configured maximum number of times, the number of retries can be reset.

To configure a maximum number of deploy attempts, see Configuring patch schedules.

There are two places the number of deployment attempts can be reset: the *Catalog* list and the *Patch Detail* page.

- To reset the number of patch deploy attempts from the patch catalog list, see Reset the number of patch deploy attempts from the patch Catalog.
- To reset the number of patch deploy attempts from the patch detail page, see Reset the number of patch deploy attempts from the patch detail page.

## *Reset the number of patch deploy attempts from the patch Catalog*

When a patch deployment has been attempted the configured maximum number of times, the number of retries can be reset from the patch *Catalog* page.

1. Go to the patch *Catalog* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Security**, then click **Patch Management**.

c. On the *Patch Management* panel, click **Catalog**.

2. Select the check box next to one or more patches/bulletins in the list then select **Choose Action > Reset Tries**.

   **The number of deploy attempts are reset to 0.**

### *Reset the number of patch deploy attempts from the patch detail page*

When a patch deployment has been attempted the configured maximum number of times, the number of retries can be reset from the patch detail page.

1. Go to the *Catalog* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Security**, then click **Patch Management**.
   c. On the *Patch Management* panel, click **Catalog**.
2. Do one of the following to display the *Patch Detail* page:
   - If the **Show** drop-down list is set to **Applicable Packages** or **All Packages**, click the name of the package, and then click the name of a patch within the package.
   - If the **Show** drop-down list is set to **Individual Patches**, click the name of a patch.
3. Scroll down to the *Deployment Status* section and click the **Reset Tries** button.

   **The number of deploy attempts is reset to 0.**

# View patch information for devices in inventory

The *Inventory* section contains detailed patch information for managed devices.

This information includes:

- The list of patches deployed on the device.
- Details of the patch schedules that apply to the device.
- Information about successful and failed patching and rollback attempts.

1. Go to the organization *Device Detail* page
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **Dashboard**.
   c. Click the name of a device.
2. Scroll down to the *Security* section.
3. Click **Patching Detect/Deploy Status** to expand the *Patching Detect/Deploy Status* details.
4. For more information, click the **Help** buttons next to *Scheduled Task Status* and *Deployment Status:* .

# View devices missing patches

View the devices that are missing patches so you can determine why they have not been updated.

1. Go to the *Patch Catalog* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General

Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Security**, then click **Patch Management**.

c. On the *Patch Management* panel, click **Catalog**.

2. Above the catalog list, click on the number following *Devices missing patches*.

**The *Devices* list is opened displaying all devices that have missing patches.**

# Viewing patch statistics and logs

Patch statistics and logs provide an overview of appliance patching tasks.

## View patch statistics

You can view patch statistics on the *Patch Management* panel.

1. Go to the *Patch Management* panel.
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Security**, then click **Patch Management**.

**The *Patch Management* panel appears, showing patch statistics.**

## View the patch log

You can view the patch log to check for errors in the patch download process.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. On the left navigation bar, click **Logs** to display the *Logs* page.
3. In the *Log* drop-down list, select **Patch Download Log**.

The patch log appears.

# Mark patches as inactive

You can mark subscribed patches as inactive to prevent them from being detected or deployed automatically.

1. Go to the *Patch Catalog* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Security**, then click **Patch Management**.

c. On the *Patch Management* panel, click **Catalog**.

2. Select the check box next to a patch.
3. Select **Choose Action > Change Status to > Inactive**.

If the **Show** drop-down list is set to **Applicable Packages** or **All Packages** all patches that make up the selected bulletin will be marked as inactive. If the **Show** drop-down list is set to **Individual Patches** all selected patches will be marked as inactive. All patches marked as inactive are automatically purged from the cache during the next scheduled patch download.

# Patch Mac OS X devices

You can apply patches to Mac OS X devices as needed.

1. Go to the *Patch Catalog* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Security**, then click **Patch Management**.
   c. On the *Patch Management* panel, click **Catalog**.
2. Do one of the following:
   - **In the *View By* drop-down list above the table, select Operating System > Mac <OS X>.**
   - **Click the Advanced Search tab, which appears above the table, then search for Mac OS X patches.**
   - **Use the Smart Label feature to automatically search the patch list using predefined search criteria.**
3. To allow the appliance to download Apple Security updates for Mac, select the appropriate operating system in the *Mac Platform* list in the *Patch Subscription Settings* page.

**You can select more than one Mac operating system. See Subscribe to patches**

# Managing Windows Feature Updates

Windows Feature Updates are new versions of Microsoft Windows 10, released a few times every year. The appliance allows you to automate the process of installing these update, to help you improve the performance of managed Windows 10 devices and protect them from potential OS-related vulnerabilities.

Use the appliance to detect and deploy the latest Windows Feature Updates for your Windows 10 devices managed by the appliance.

**NOTE:** This feature is only supported on Windows 10 devices with a Semi-Annual Channel subscription. It is not available for Mac, Linux, or Windows devices running a OS version other than 10.

# Subscribe to Windows Feature Updates

You can subscribe to Windows Feature Updates for your managed Microsoft Windows 10 devices.

Before you subscribe to and download Windows Feature Updates, identify the operating systems installed on managed devices, and verify their update requirements. You can only download updates for your managed Windows 10 devices.

1. Go to the *Windows Feature Update Subscriptions* page:

a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
b. On the left navigation bar, click **Security**, then click **Windows Feature Updates**.
c. On the *Windows Feature Updates* panel, click **Subscriptions**.

2. Specify the *Subscription* settings. The operating systems and locales specified in the subscription control the patches that are downloaded.

| Option | Description |
|---|---|
| **Windows Feature Update Versions** | Download selected Windows Feature Updates. Click the edit button to manage the list of operating systems:  . Click **Select Versions** and select one or more update versions that you want to install on your managed Windows 10 devices,. To ignore Windows Feature Updates, select **Disabled**.<br>Selected items are displayed after you save the settings. |
| **Locales** | Download patches for the selected languages. Click the edit button to manage the list of locales:  . Select **All Locales** to download patches regardless of the locale or select the check boxes next to one or more locales.<br>Selected items are displayed after you save the settings. |

**NOTE:** At least one version and one locale must be selected for a Windows Feature Update subscription.

3. Click **Save**.

Selected Windows Feature Updates are downloaded automatically at the next scheduled download time.

Next, you can configure Windows Feature Update download settings. See Select patch and feature update download settings.

# Configure Windows Feature Update schedules

You can create and configure Windows Feature Update schedules and set a time for them to run. Windows Feature Update schedules do not interfere with Managed Installations or other distributions.

1. Start the *Windows Feature Update Schedule Detail* wizard:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Security**, then click **Windows Feature Updates**.
   c. On the *Windows Feature Updates* panel, click **Schedules**.
   d. On the *Windows Feature Update Schedules* list page, do one of the following:

- To create a new Windows Feature Update schedule using the *Schedule Detail* wizard, click **Choose Action** > **New (Wizard)**.
- To create a new Windows Feature Update schedule using the *Schedule Detail* page, click **Choose Action** > **New (Classic)**.
- To edit an existing schedule, click the schedule name in the list, then on the *Windows Feature Update Schedule Summary* page that appears, click **Edit**.

**The *Schedule Detail* page or wizard appears, as selected. The same options are available in each selection. You can switch between the page and wizard by clicking Classic View or Wizard View in the top-right corner, as applicable.**

2. Configure general information about the schedule:

| Option | Description |
|---|---|
| **Name** | A name that identifies the schedule. This name appears on the *Windows Feature Update Schedules* list page. |
| **Description** | A brief description of the Windows Feature Update schedule. |

3. In the *Choose Windows Feature Update* section, configure the following options:

| Option | Description |
|---|---|
| **Select a build** | Select a version of the Windows Feature Update that you want to detect, stage, or deploy. This section lists the updates selected in your subscription. |
| **Select editions** | Select one or more editions of the selected version. This section lists all editions for the selected version, for example, Business and Consumer editions for the different platforms (32- and 64-bit). |

4. Select one of the following actions.

**These actions are identical to patch scheduling actions. See Configure patch schedules.**

| Action | Description |
|---|---|
| **Detect** | Scans for compatible Windows Feature Updates. |
| **Detect and Stage** | Scans for compatible Windows Feature Updates, and downloads the applicable files to the agent device for later deployment. |
| **Detect, Stage and On-demand Deploy** | Detects Windows Feature Updates that are installed or missing from managed devices, downloads the applicable files to the agent device, and causes the Windows system tray icon to alert the user.<br>• These schedules are only available for Windows devices with agents version 11.0 or later.<br>• The *Agent Status Icon On Device* option must be enabled in the agent communication settings. You can find these settings on the *Organization Detail* page, under *Communication and Agent Settings* (if one or more Organization components are enabled), or on the *Communication Settings* page (if you do not have an Organization component). For more information, see Configure Agent communication and log settings. |
| **Detect and Deploy** | Scans for compatible Windows Feature Updates, downloads the applicable files to the agent device, and deploys the update to the selected devices. |

5. Select the target devices using the following options.

**These options are identical to the ones appearing in patch scheduling actions. See Configure patch schedules.**

| Action | Description |
|---|---|
| **All Devices** | To apply this schedule to all managed devices, select this options. Clear the check box to limit the patch action to specific labels or devices. |
| **Device Labels** | Restrict the action to the feature updates using the labels that you select here. This is the most commonly used option.<br>a. Click **Manage Associated Labels**.<br>b. In the *Select Labels* dialog box that appears, drag one or more labels (as applicable) to the *Limit Run to* area, then click **OK**.<br>To use this option, you must already have Smart Labels for the feature updates. See Using Smart Labels for patching. |
| **Devices** | Run patch actions on the devices that you select.<br>• To search for devices, begin typing in the field.<br>• To remove all specified devices and start again, click **Remove All**.<br>• Scoped users can see only those devices that are associated with their role, when the role is assigned a label. For more information about user roles, see Add or edit User Roles. |

6. In the *Schedule* section, specify the applicable options for the schedule.

**These options are identical to the ones appearing in patch scheduling actions. See Configure patch schedules.**

| Option | Description |
|---|---|
| **None** | Run in combination with an event rather than on a specific date or at a specific time. This option is useful if you want to patch servers manually, or perform patch actions that you do not want to run on a schedule. |
| **Every _ hours** | Run at a specified interval. |
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |
| **Run on the n**th **of every month/ specific month at HH:MM** | Run on the **n**th day every month, (for example, the first or the second) day of every month, or a specific month, at the specified time. |
| **Run on the nth weekday of every month/specific month at HH:MM** | Run on the specific weekday of every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>`* * * * *`<br>`\| \| \| \| +----------day of week (0-6)(Sun=0)`<br>`\| \| \| +----------month (1-12)`<br>`\| \| +----------day of month (1-31)`<br>`\| +----------hour (0-23)`<br>`+----------minute (0-59)` |

| Option | Description |
|---|---|
| | Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (/)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3.<br>Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |
| **View Task Schedule** | Click to view the task schedule. The *Task Schedule* dialog box displays a list of scheduled. Click a task to review the task details. For more information, see View task schedules. |
| **Timezone** | The timezone to use when scheduling the action. Select **Server** to use the timezone of the appliance. Select **Agent** to use the timezone of the managed device. |
| **Run on next connection if offline** | Run the action the next time the managed device connects to the appliance, if the device is currently offline. This option is useful for laptops and other devices that are periodically offline. If this option is not selected, and the device is offline, the action does not run again until the next scheduled time. |
| **Delay run after reconnect** | Delay the schedule by a specified amount of time. The time delay period begins when the patch action is scheduled to run. |
| **End after** | The time limit for patching actions.<br>For example, if you schedule patches to run at 04:00, you might want all patching actions to stop at 07:00 to prevent bandwidth issues when users start work. To do so, you could specify **180** in the minutes box.<br>When this time limit is reached, any patching tasks that are in progress are suspended, and their status on Security logs is *Suspended*.<br>These patching tasks do not resume on the next run and instead start from the beginning with each scheduled patching action. |

7. Click **Save**.

**The *Windows Feature Update Schedule Summary* page appears, displaying the newly created or updated schedule. For more information about this page, see View Windows Feature Update status.**

- If you added any devices that match the Smart Label criteria, they are automatically included in the update schedule.
- When the updates are downloaded to the agent device and are ready for deployment, the KACE Agent icon is updated in the Windows system tray and in the menu, indicating that actions are available for the agent. To install the updates, on the agent device, in the Windows system tray, click the KACE Agent, and choose **Deploy staged patches**. For more information about the KACE Agent icons, see Manage the KACE Agent on Windows devices using the Windows system tray.

# View Windows Feature Update schedules

You can view summary information for the Windows Feature Update schedules that exist on the appliance. If the Organization component is enabled on your appliance, you view Windows Feature Update schedules for each organization separately.

1. Go to the *Windows Feature Update Schedules* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Security**, then click **Windows Feature Updates**.
2. On the *Windows Feature Updates* panel, click **Schedules**.

    **Columns available on the *Windows Feature Update Schedules* page are identical to the ones on the *Patch Schedules* page. For more information about the fields on the *Patch Schedules* page, see View a list of patch schedules.**
3. (Optional) To change column visibility, select **Column Visibility** from the *Table Options* drop-down list above the table on the right.

# Review Windows Feature Update schedule details

When you configure a Windows Feature Update schedule, this page displays details about the schedule configuration and its status.

1. Go to the *Windows Feature Update Schedule Summary* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Security**, then click **Windows Feature Updates**.
    c. On the *Windows Feature Updates* panel, click **Schedules**.
    d. Click the name of a Windows Feature Update schedule.
2. Review the contents of the *Configuration* section.

| Option | Description |
|---|---|
| **Created** | The date and time the schedule is created. |
| **Modified** | The date and time the schedule is last modified. |

| Option | Description |
|---|---|
| **Last Run** | The date and time the schedule is last run. |
| **Name** | A name that identifies the schedule. This name appears on the *Windows Feature Update Schedules* list page. |
| **Action** | The action associated with the schedule:<br>• **Detect**: Scans for compatible Windows Feature Updates.<br>• **Detect and Stage**: Scans for compatible Windows Feature Updates, and downloads the applicable files to the agent device for later deployment.<br>• **Detect, Stage and On-demand Deploy**: Detects Windows Feature Updates that are installed or missing from managed devices, downloads the applicable files to the agent device, and causes the Windows system tray on the agent device to alert the user that the updates are ready for deployment. The user can then initiate the deployment process at their convenience.<br>◦ These schedules are only available for Windows devices with agents version 11.0 or later.<br>◦ The *Agent Status Icon On Device* option must be enabled in the agent communication settings. You can find these settings on the *Organization Detail* page, under *Communication and Agent Settings* (if one or more Organization components are enabled), or on the *Communication Settings* page (if you do not have an Organization component). For more information, see Configure Agent communication and log settings.<br>• **Detect and Deploy:** Scans for compatible Windows Feature Updates, downloads the applicable files to the agent device, and deploys the update to the selected devices. |
| **Description** | A brief description of the Windows Feature Update schedule. |
| **Devices** | This field only appears when the schedule is configured to apply to all devices. |
| **Windows Feature Update** | The name and version of the Windows Feature Update. |
| **Device Label** | One or more Smart Labels associated with the devices against which the schedule runs. For more information, see Using Smart Labels for patching. This field only appears when the schedule is configured to apply to selected devices. |
| **Device Name** | One or more selected devices against which the schedule runs. This field only appears when the schedule is configured to apply to selected devices. |
| **Detect Label** | One or more Smart Labels associated with the scheduled updates. For more information, see Using Smart Labels for patching. This field only appears when the schedule is configured to detect selected updates. |

| Option | Description |
|---|---|
| **Alerts** | **Detect and Deploy schedules only**. The alerts displayed to users when update actions run:<br>• **OK**: Run immediately.<br>• **Cancel**: Cancel until the next scheduled run.<br>• **Snooze**: Prompt the user again after the *Snooze Duration*.<br>**NOTE:** Alerts are not available in Detect and Detect and Stage schedules. |
| **Reboot** | **Detect and Deploy schedules only**. The options for rebooting the managed device:<br>• **No Reboot**: The device does not reboot even though a reboot might be required for the update to take effect. This option is not recommended because deploying updates without rebooting when required can leave systems unstable. Further, updates that require reboots are only shown as deployed after the reboot.<br>• **Prompt User**: Waits for the user to accept the reboot before restarting the device. If the user snoozes or cancels the reboot, the update stops until a reboot occurs. Selecting a Snooze Duration in the agent dialog box that appears on the target device pauses the reboot prompt for the specified snooze interval.<br>• **Force Reboot**: Reboots as soon as an update that requires it is deployed. Forced reboots cannot be canceled. Force Reboot works well for desktops and servers. You might not want to force reboot on laptops. Force Reboot works well with servers because they usually have no dedicated users. However, it is important to warn users that services will not be available when servers are being updated and re-booted. See Best practices for patching. |
| **Schedule** | The selected update schedule. Click **View Task Schedule** to see a detailed task scheduler. In the dialog box that appears, click a task to review the task details. For more information, see View task schedules. |
| **Run on Next Connection in Offline** | Indicates if the schedule runs the action the next time the managed device connects to the appliance, if the device is currently offline. |
| **Delay Run After Reconnect** | If configured, this option indicates the amount of time the schedule is delayed for. The time delay period begins when the update action is scheduled to run. |
| **End After** | If configured, this option indicates the maximum amount of time the schedule can run for. When this time limit is reached, any update tasks that are in progress are suspended. |

3. In the *Schedule Status* section, review the overall schedule status on any of the following tabs:

| Tab | Contents |
|---|---|
| **By Machine** | Devices selected for updating. Each entry displays the device name, its IP address, the update status (see Fields in the Patch Schedule Detail pages), update results, and the date the update completed. You can expand a device node to view the applicable updates. Each entry shows the update ID, associated Knowledge Base article number, update name, and the current status (Installed, Not Installed, Staged, and Detect, Stage, or Deploy Failure). |

| Tab | Contents |
|---|---|
| **By Feature Update** | Updates selected for detection, staging, and deployment. Each entry displays the update ID, associated Knowledge Base article number, update name, and the numbers of devices that are updated, not updated, and those that encountered detect or deploy failures. |
| **Installed** | Updates successfully installed on devices. Each entry displays the update ID, associated Knowledge Base article number, and the update name. You can expand an update node to view the devices on which the update is installed. |
| **Not Installed** | Updates that are not installed on devices. Each entry displays the update ID, associated Knowledge Base article number, and the update name. You can expand an update node to view the devices on which the update is to be installed. |
| **Staged** | Update that are staged for installation. Staging refers to update files being copied to the agent device for later deployment. Each entry displays the update ID, associated Knowledge Base article number, and the update name. You can expand an update node to view the devices on which the update is to be installed. |
| **Detect Failures** | Incomplete updates that resulted in a detection failure. Each entry displays the update ID, associated Knowledge Base, update name, and the associated error code (see Error codes caused by patching and scripting). You can expand an update node to view the devices on which the failure is encountered. |
| **Stage Failures** | Incomplete updates that resulted in a staging failure. Each entry displays the update ID, associated Knowledge Base article number, update name, and the associated error code (see Error codes caused by patching and scripting). You can expand an update node to view the devices on which the failure is encountered. |
| **Deploy Failures** | Incomplete updates that resulted in a deployment failure. Each entry displays the update ID, associated Knowledge Base, update name, and the associated error code (see Error codes caused by patching and scripting). You can expand an update node to view the devices on which the failure is encountered. |

4. **Optional**. After reviewing the schedule details, you can perform any of the following actions:
   - To edit the update schedule, click **Edit**. For more information, see Configure Windows Feature Update schedules.
   - To run the update schedule, click **Run Now**.
   - To make a copy of the update schedule, click **Duplicate**.
   - To delete the update schedule, click **Delete**.

# View available Windows Feature Updates

After you have subscribed to Windows Feature Updates, and the updates are downloaded, you can view the available updates.

You must subscribe to Windows Feature Update versions and select Feature Update download settings to view related updates. See:

- Subscribe to Windows Feature Updates
- Select patch and feature update download settings

1. Go to the *Windows Feature Update* list page:

a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
b. On the left navigation bar, click **Security**, then click **Windows Feature Updates**.
c. On the *Windows Feature Updates* panel, click **Catalog**.

2. Search for Windows Feature Updates.
   a. Enter the search criteria into the search box.

      **For example,** `1909`**.**

   b. Press **Enter**.

      **The list page refreshes, showing only the Windows Feature Updates whose version is 1909.**

# View Windows Feature Update status

Windows Feature Update details include vendor information and deployment status.

1. Go to the *Windows Feature Update Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Security**, then click **Windows Feature Updates**.
   c. On the *Windows Feature Updates* panel, click **Catalog**.
   d. Click a Windows Feature Update name.

      **The** *Windows Feature Update Detail* **page appears, displaying complete information about the selected Windows Feature Update.**

# Managing Dell devices and updates

You can use the appliance to manage device updates from Dell.

These updates include:

- Software and firmware for servers
- Software and firmware for client devices
- Some Dell-supplied applications

**NOTE:** Server and client devices refer to Dell server and client hardware, not to their server or client OS.

Any Dell devices that need to be updated must have the Dell Open Manage Inventory Agent installed, either the client or the server version, as applicable. This component is included in all Dell Updates by default and there is no need to add it manually. If the Dell Open Manage inventory client does not exist on a target device, it is installed during the first deployment process.

**NOTE:** Dell hardware updates only work with the KACE Agent is 11.1 or higher. Older agent versions do not support this feature.

Run the *Supported Dell Models* report to see which Dell computers Dell Client Updates are supported for. See Running single-organization and consolidated reports.

# Differences between patching and Dell Updates

The differences between patching and Dell Updates include differences in the subscription processes, in action names, and in location of management processes.

Differences between patching and Dell Updates are the following:

- Any Dell devices that need to be updated must have the Dell Open Manage Inventory Agent installed, either the client or the server version, as applicable.
- The Dell Update subscription process differs from the appliance patch subscription process. For instructions on subscribing to Dell Updates, see Select Dell Update download settings.
- The names used for patching actions differ:

| Action | Patching Term | Dell Updates Term | Term Used in: |
|---|---|---|---|
| Install the patch or update on the devices you manage. | Deployment | Update | Managing Dell devices and updates |

- You manage and run patching and Dell Updates from different places in the Administrator Console:

| Action | Where to find it |
|---|---|
| Run Dell Updates | **Security** > **Dell Updates** |
| Manage Dell Updates | If the Organization component is **not enabled** on your appliance:<br>Administrator Console **> Settings** > **Dell Update Download Settings**<br>If the Organization component **is enabled** on your appliance:<br>System Administration Console **> System** > **Settings** > **Dell Update Download Settings** |
| Run Patching Schedules | **Security** > **Schedules** |
| Manage Patching | **Security** > **Subscriptions** |

# Select Dell Update download settings

You must configure and schedule catalog updates before you create schedules to update devices.

Dell Update packages are provided in **catalogs**: one for servers and one for clients.

1. Go to the *Dell Update Download Settings* page:
   - **If the Organization component is not enabled on the appliance, click** *Security***, then click** *Dell Updates***.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Dell Update Download Settings**.

**The current status of the Dell catalog is displayed.**

3. In the *Configure File Downloads* section, select the following options.

| Option | Description |
|---|---|
| **Disabled** | Prevents the downloading of Dell Update packages. This prevention includes the installers that are required to install the updates. |
| **All files** | Maintains a full cache of subscribed packages on your appliance. This option downloads all deployment packages, without checking to determine whether they are required for your environment. |
| **Files detected as missing** | Allows the appliance to determine which packages to download based on the results of Detect jobs. If a Dell Update detection signature has been detected as Not Installed on any managed device, the package is downloaded. If no managed devices are detected as Not Installed, no packages for this update are downloaded. |
| **Delete unused files after __ days** | Deletes Dell Update packages that have not been deployed in the specified number of days. Dell Updates that are marked as *Inactive* or *Disabled* are automatically deleted during the download process. |
| **Update**<br>**Description**<br>**Actions** | For each type of updates (*Signature* or *Update Files*), provides a description and access to the available actions:<br>• **Check for Update**: Click to download Dell Update signature files.<br>• **Delete**: Click to immediately remove all Dell Updates from the appliance. This can be useful if you no longer need any update and you want to quickly reclaim the disk space that they used.<br>• **Run Now**: Click to immediately download the Dell Updates to which you have subscribed, regardless of the subscription schedule. |

4. Select schedule options for Dell Update signatures in the *Schedule* section. File signatures include the security bulletins and other files that define Dell Updates downloaded from Quest.

| Option | Description |
|---|---|
| **Signature Download** | Select **None** to prevent the downloading of Dell Update signatures. |
| **Every day at the specified time** | Select **day** to download Dell Update detection signatures every day, or select a day of the week to download once a week.<br>Select the time to start the download. Time is displayed in 24-hour clock format, where 0 is midnight, 1:00 a.m. is 1 and 11:00 p.m. is 23.<br>**NOTE:** When setting up Dell Update downloads, timing is important. The appliance activity log is created at 1:30, and maintenance tasks occur between 01:00 and 01:30. Quest recommends that you schedule Dell Update downloads to occur after the log and maintenance tasks are complete, which is about 3:00. |
| **On the nth of every month or on a specific month at HH:MM** | Select the day of the month to download Dell Update detection signatures on a monthly basis. |

5. Set the schedule options for Dell Updates.

| Option | Description |
|---|---|
| **After signature download** | Downloads packages after the signatures have been downloaded. This option is not available if the **Disabled** option is cleared in the *Configure File Downloads* section. |
| **Every __ minutes** | Specifies the frequency with which packages are downloaded. This option is available only if *Files detected as missing* in the *Configure File Downloads* section is selected. |
| **Download Blackout: Start __ End __** | Specifies a time period during which files cannot be downloaded. For example, use an early morning stop time to prevent the process from using a large amount of network bandwidth during regular working hours.<br>If you select this option, the appliance stops file downloads at the specified time. It does not start file downloads again until the next specified download time. When the download resumes, it starts up where it left off. Downloads that are incomplete might not appear on the *Dell Update Catalog* page. |

6. Click **Save**.

# Configure Dell Update schedules

The appliance can automatically identify and install the firmware and driver updates required for your Dell clients and servers according to the schedule you set. If the Organization component is enabled on your appliance, you create Dell Update schedules for each organization separately.

Consider creating labels to group Dell Updates and devices. You can then use those labels when you create Dell Update schedules. For example, you could create a label that groups updates by application families, such as drivers or firmware. Or, you could group all Dell servers running Microsoft Windows 7 into a single label and then run a Dell Update schedule to bring them up to date. For more information about creating labels for updates and devices, see Using Smart Labels for patching.

1. Go to the *Dell Updates* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Security**, then click **Dell Updates**.
2. **Optional**: Review the available updates and inactivate the updates that you do not want to install.

    **Updates are available only if the appliance settings are configured to download Dell catalog updates.**

    To review and inactivate updates:

    a. On the *Dell Updates* panel, click **Catalog**.
    b. Select the check box next to an update.
    c. Select **Choose Action** > **Change Status to** > **Inactive**.
3. Schedule inventory and updates.

    **This is similar to creating patch schedules in the *Patch Management* section. You can collect inventory independently, or as part of an inventory and update schedule that also installs the updates. Normally, inventory is performed automatically as part of an update schedule.**

    To schedule inventory and updates:

    a. On the left navigation bar, click **Security**, then click **Dell Updates**.
    b. On the *Dell Updates* panel, click **Schedules**.
    c. Select **Choose Action** > **New**.

d. On the *Dell Update Schedules* list page, do one of the following:

- To create a new Dell Update schedule using the *Schedule Detail* wizard, click **Choose Action > New (Wizard)**.
- To create a new Dell Update schedule using the *Schedule Detail* page, click **Choose Action > New (Classic)**.
- To edit an existing schedule, click the schedule name in the list, then on the *Dell Update Schedule Summary* page that appears, click **Edit**.

**The *Schedule Detail* page or wizard appears, as selected. The same options are available in each selection. You can switch between the page and wizard by clicking Classic View or Wizard View in the top-right corner, as applicable.**

e. Configure general information about the schedule:

| Option | Description |
|---|---|
| **Name** | A name that identifies the schedule. This name appears on the *Dell Update Schedules* list page. |
| **Description** | A brief description of the Dell Update schedule. |

f. Select one of the following actions.

**These actions are identical to patch scheduling actions. See Configure patch schedules.**

| Action | Description |
|---|---|
| **Detect** | Scans for compatible Dell Updates. |
| **Detect and Deploy** | Scans for compatible Dell Updates, downloads the applicable files to the agent device, and deploys the update to the selected devices. |
| **Deploy** | Deploys the update to the selected devices. |

**NOTE:** Dell Update deployment actions require a reboot of applicable managed devices.

g. Select the target devices using the following options.

**These options are identical to the ones appearing in patch scheduling actions. See Configure patch schedules.**

**Normally, you create different schedules for laptops, workstations, and servers, because these three types of devices have very different usage characteristics.**

| Action | Description |
|---|---|
| **All Devices** | To apply this schedule to all managed devices, select this options. Clear the check box to limit the update action to specific labels or devices. |
| **Device Labels** | Restrict the action to the Dell updates using the labels that you select here. This is the most commonly used option.<br>a. Click **Manage Associated Labels**.<br>b. In the *Select Labels* dialog box that appears, drag one or more labels (as applicable) to the *Limit Run to* area, then click **OK**.<br>To use this option, you must already have Smart Labels for the feature updates. See Using Smart Labels for patching. |

| Action | Description |
|---|---|
| **Devices** | Run Dell updates on the devices that you select. Only compatible Dell devices appear in the list.<br>• To search for devices, begin typing in the field.<br>• To remove all specified devices and start again, click **Remove All**.<br>• Scoped users can see only those devices that are associated with their role, when the role is assigned a label. For more information about user roles, see Add or edit User Roles. |
| **Operating Systems** | Select the operating systems of the devices that you want to update. The default is all operating systems. When this option is configured, the schedule only applies to devices with the selected operating systems.<br>a. Click **Manage Operating Systems**.<br>b. In the **Operating Systems** dialog box that appears, select the OS versions in the navigation tree, as applicable.<br>You have an option to select OS versions by their family, product, architecture, release ID, or build version. You can choose a specific build version, or a parent node, as needed. Selecting a parent node in the tree automatically selects the associated child nodes. This behavior allows you to select any future OS versions, as devices are added or upgraded in your managed environment. For example, to select all build current and future versions associated with the Windows 10 x64 architecture, under **Windows > Windows 10**, select **x64**. |

h. In the *Schedule* section, specify the applicable options for the schedule.

**These options are identical to the ones appearing in patch scheduling actions. See Configure patch schedules.**

| Option | Description |
|---|---|
| **None** | Run in combination with an event rather than on a specific date or at a specific time. This option is useful if you want to patch servers manually, or perform patch actions that you do not want to run on a schedule. |
| **Every _ hours** | Run at a specified interval. |
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |
| **Run on the n**th **of every month/ specific month at HH:MM** | Run on the **n**th day every month, (for example, the first or the second) day of every month, or a specific month, at the specified time. |
| **Run on the nth weekday of every month/specific month at HH:MM** | Run on the specific weekday of every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>* * * * * |

| Option | Description |
|---|---|
| | `\| \| \| \| +----------day of week (0-6)(Sun=0)`<br>`\| \| \| +----------month (1-12)`<br>`\| \| +----------day of month (1-31)`<br>`\| +----------hour (0-23)`<br>`+----------minute (0-59)`<br>Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (/)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3.<br>Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |
| **View Task Schedule** | Click to view the task schedule. The *Task Schedule* dialog box displays a list of scheduled. Click a task to review the task details. For more information, see View task schedules. |
| **Timezone** | The timezone to use when scheduling the action. Select **Server** to use the timezone of the appliance. Select **Agent** to use the timezone of the managed device. |
| **Run on next connection if offline** | Run the action the next time the managed device connects to the appliance, if the device is currently offline. This option is useful for laptops and other devices that are periodically offline. If this option is not selected, and the device is offline, the action does not run again until the next scheduled time. |
| **Delay run after reconnect** | Delay the schedule by a specified amount of time. The time delay period begins when the patch action is scheduled to run. |
| **End after** | The time limit for patching actions.<br>For example, if you schedule patches to run at 04:00, you might want all patching actions to stop at 07:00 to prevent bandwidth issues when users start work. To do so, you could specify **180** in the minutes box.<br>When this time limit is reached, any patching tasks that are in progress are suspended, and their status on Security logs is *Suspended*.<br>These patching tasks do not resume on the next run and instead start from the beginning with each scheduled patching action. |

**NOTE:** The Agent Timezone is only available if there is a Dell device in inventory to pull the Timezone information from.

i. Click **Save**.

**The schedule appears on the *Dell Update Schedules* page. The schedule is disabled by default.**

**TIP:** Before you enable a schedule, test it on a small subset of the devices to make sure everything is working the way you expect.

j. To enable the schedule, select the check box next to the schedule name, then select **Choose Action > Enable**.

**The inventory and update runs according to the specified schedule.**

# View Dell Update schedules

You can view summary information for the Dell Update schedules that exist on the appliance. If the Organization component is enabled on your appliance, you view Dell Update schedules for each organization separately.

1. Go to the *Dell Update Schedules* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Security**, then click **Dell Updates**.
2. On the *Dell Updates* panel, click **Schedules**.

**Columns available on the *Dell Update Update Schedules* page are identical to the ones on the *Patch Schedules* page. For more information about the fields on the *Patch Schedules* page, see View a list of patch schedules.**

3. (Optional) To change column visibility, select **Column Visibility** from the *Table Options* drop-down list above the table on the right.

# Review Dell Update schedule details

When you configure a Dell Update schedule, this page displays details about the schedule configuration and its status.

1. Go to the *Update Schedule Summary* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Security**, then click **Dell Updates**.
   c. On the *Dell Updates* panel, click **Schedules**.
   d. Click the name of a schedule.
2. Review the contents of the *Configuration* section.

| Option | Description |
|---|---|
| **Created** | The date and time the schedule is created. |
| **Modified** | The date and time the schedule is last modified. |

| Option | Description |
|---|---|
| **Last Run** | The date and time the schedule is last run. |
| **Name** | A name that identifies the schedule. This name appears on the *Dell Update Schedules* list page. |
| **Action** | The action associated with the schedule:<br>• **Detect**: Scans for compatible Dell Updates.<br>• **Detect and Deploy**: Scans for compatible Dell Updates, and downloads the applicable files to the agent device for later deployment.<br>• **Deploy**: Deploys the update to the selected devices. |
| **Description** | A brief description of the Dell Update schedule. |
| **Devices** | This field only appears when the schedule is configured to apply to all devices. |
| **Device Label** | One or more Smart Labels associated with the devices against which the schedule runs. For more information, see Using Smart Labels for patching. This field only appears when the schedule is configured to apply to selected devices. |
| **Device Name** | One or more selected devices against which the schedule runs. This field only appears when the schedule is configured to apply to selected devices. |
| **Detect Label** | One or more Smart Labels associated with the scheduled updates. For more information, see Using Smart Labels for patching. This field only appears when the schedule is configured to detect selected updates. |
| **Alerts** | **Detect and Deploy schedules only**. The alerts displayed to users when update actions run:<br>• **OK**: Run immediately.<br>• **Cancel**: Cancel until the next scheduled run.<br>• **Snooze**: Prompt the user again after the *Snooze Duration*. |
| **Reboot** | **Detect and Deploy schedules only**. The options for rebooting the managed device:<br>• **No Reboot**: The device does not reboot even though a reboot might be required for the update to take effect. This option is not recommended because deploying updates without rebooting when required can leave systems unstable. Further, updates that require reboots are only shown as deployed after the reboot.<br>• **Prompt User**: Waits for the user to accept the reboot before restarting the device. If the user snoozes or cancels the reboot, the update stops until a reboot occurs. Selecting a Snooze Duration in the agent dialog box that appears on the target device pauses the reboot prompt for the specified snooze interval.<br>• **Force Reboot**: Reboots as soon as an update that requires it is deployed. Forced reboots cannot be canceled. Force Reboot works well for desktops and servers. You might not want to force reboot on laptops. Force Reboot works well with servers because they usually have no dedicated users. However, it |

| Option | Description |
|---|---|
| | is important to warn users that services will not be available when servers are being updated and re-booted. See Best practices for patching. |
| **Schedule** | The selected update schedule. Click **View Task Schedule** to see a detailed task scheduler. In the dialog box that appears, click a task to review the task details. For more information, see View task schedules. |
| **Run on Next Connection in Offline** | Indicates if the schedule runs the action the next time the managed device connects to the appliance, if the device is currently offline. |
| **Timezone** | If this option is configured, it specifies the time zone to use when scheduling related action. When set to Server, the schedule uses the appliance time zone. If it's set to Agent, it uses the time zone of the managed device. |
| **Delay Run After Reconnect** | If configured, this option indicates the amount of time the schedule is delayed for. The time delay period begins when the update action is scheduled to run. |
| **End After** | If configured, this option indicates the maximum amount of time the schedule can run for. When this time limit is reached, any update tasks that are in progress are suspended. |

3. In the *Schedule Status* section, review the overall schedule status on any of the following tabs:

| Tab | Contents |
|---|---|
| **By Machine** | Devices selected for updating. Each entry displays the device name, its IP address, the update status (see Fields in the Patch Schedule Detail pages), update results, and the date the update is completed. You can expand a device node to view the applicable updates. Each entry shows the update ID, associated Knowledge Base article number, update name, the current status (Installed, Not Installed, or Deploy Failure), and the date the update is detected. |
| **By Update** | Updates selected for detection and deployment. Each entry displays the update ID, associated Knowledge Base article number, update name, and the numbers of devices that are updated, not updated, and those that encountered detect or deploy failures. |
| **Installed** | Updates successfully installed on devices. Each entry displays the update ID, associated Knowledge Base article number, and the update name. You can expand an update node to view the devices on which the update is installed. |
| **Not Installed** | Updates that are not installed on devices. Each entry displays the update ID, associated Knowledge Base article number, and the update name. You can expand an update node to view the devices on which the update is to be installed. |
| **Detect Failures** | Incomplete updates that resulted in a detection failure. Each entry displays the update ID, associated Knowledge Base, update name, and the associated error code (see Error codes caused by patching and scripting). You can expand an update node to view the devices on which the failure is encountered. |
| **Deploy Failures** | Incomplete updates that resulted in a deployment failure. Each entry displays the update ID, associated Knowledge Base, update name, and the associated error code |

| Tab | Contents |
|---|---|
| | (see Error codes caused by patching and scripting). You can expand an update node to view the devices on which the failure is encountered. |

4. **Optional**. After reviewing the schedule details, you can perform any of the following actions:
   - To edit the update schedule, click **Edit**. For more information, see Configure Windows Feature Update schedules.
   - To run the update schedule, click **Run Now**.
   - To make a copy of the update schedule, click **Duplicate**.
   - To delete the update schedule, click **Delete**.

# View available Dell Updates

You can review the list of Dell updates in the Dell Update Catalog.

You must select Dell Update download settings to view related updates. See Select Dell Update download settings. When all Dell Update signature files are downloaded, the Dell Update Catalog lists the related updates.

**NOTE:** The *Severity* column on this page uses the Microsoft security standards which do no match the Dell severity levels:

| Severity level displayed | Corresponding Dell severity level |
|---|---|
| *Moderate* | Optional |
| *Important* | Recommended |
| *Critical* | Urgent |

1. Go to the *Dell Update Catalog* list page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Security**, then click **Dell Updates**.
   c. On the *Dell Updates* panel, click **Catalog**.
2. Search for Dell Updates.
   a. Enter the search criteria into the search box.

      **For example,** `2021`**.**

   b. Press **Enter**.

      **The list page refreshes, showing only the Dell Updates whose version is 2021.**

# View Dell Update status

Dell Update details include vendor information and deployment status.

1. Go to the *Dell Update Catalog* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Security**, then click **Dell Updates**.
c. On the *Dell Updates* panel, click **Catalog**.
d. Click the name of a Dell Update.

**The *Dell Update Detail* page appears, displaying complete information about the selected update.**

# Managing Linux package upgrades

Linux package upgrades improve the overall performance of your managed Linux devices and protect them from potential vulnerabilities.

The appliance allows you to automate the process of installing and managing Linux package upgrades. It relies on individual Linux package repositories, and the assumption that your managed Linux devices point to the appropriate repository.

Also, the appliance only detects the packages that include security updates, that are identified as such in each Linux repository. It does not attempt to detect or upgrade all packages, or to upgrade the entire OS on managed devices to the latest version.

**NOTE:** The Linux Raspbian does not make a distinction between regular and security updates. Detecting and upgrading packages for a managed Raspbian device results in all updated packages being installed on the device.

**NOTE:** The term *update* in KACE Systems Management Appliance assumes the following: if there are new versions of the packages available in the distribution's repositories, the appliance uses the standard system commands to ensure that the system installs the latest version possible. This is not in any way meant to be exactly the same way that the word *update* (or *upgrade*) is used in the underlying system commands.

# View Linux package upgrade schedules

You can view summary information for the Linux package upgrade schedules that exist on the appliance. If the Organization component is enabled on your appliance, you view these schedules for each organization separately.

1. Go to the *Windows Feature Update Schedules* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Security**, then click **Linux Package Upgrades**.
2. On the *Linux Package Upgrades* panel, click **Schedules**.

**Columns available on the *Linux Package Upgrade Schedules* page are very similar to the ones on the *Patch Schedules* page. For more information about the fields on the *Patch Schedules* page, see View a list of patch schedules.**

3. (Optional) To change column visibility, select **Column Visibility** from the *Table Options* drop-down list above the table on the right.

# Configure Linux package upgrade schedules

You can create and configure Linux package upgrade schedules and set a time for them to run.

1. Start the Linux package upgrade wizard:

a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
b. On the left navigation bar, click **Security**, then click **Linux Package Upgrades**.
c. On the *Linux Package Upgrades Management* panel, click **Schedules**.
d. On the *Linux Package Upgrade Schedules* list page, do one of the following:

- To create a new Linux package upgrade schedule, click **Choose Action** > **New (Wizard)**.
- To edit an existing schedule, click the schedule name in the list, then on the *Linux Package Upgrade Summary* page that appears, click **Edit**.

**The *Schedule Detail* wizard appears.**

2. In the *Schedule Detail* wizard, on the *General Information* page, configure general information about the schedule:

| Option | Description |
|---|---|
| **Name** | A name that identifies the schedule. This name appears on the *Linux Package Upgrade Schedules* list page. |
| **Description** | A brief description of the Linux package upgrade schedule. |

3. On the *Action* page, complete the following steps:
   a. Under *Action*, select one of the following actions.

   The results of the selected action depends on whether your managed Linux devices are associated with their applicable package repository. To select all applicable devices, ensure that each of your managed devices is using the appropriate package repository.

   **NOTE:** The appliance only scans for the packages that include security updates, that are identified such in each Linux repository, except Linux Raspbian. It does not attempt to detect or upgrade all packages, or to upgrade the entire OS on managed devices to the latest version. The Linux Raspbian repository, however, does not make a distinction between regular and security updates. Detecting and upgrading packages for managed Raspbian devices results in all updated packages being installed on those devices.

| Action | Description |
|---|---|
| **Detect All** | Scans for all Linux package upgrades that include security updates. |
| **Detect and Upgrade All** | Scans for all Linux package upgrades that include security updates, downloads the applicable files, and deploys the upgrade to the selected devices. |

   b. Under *Detect All*, select the amount of time for the detect action to complete.
   c. **Detect and Upgrade All actions only.** Under *Upgrade All*, select the amount of time for the upgrade action to complete.
4. Click **Next**.
5. On the *Devices* page, specify the devices you want to associate with this schedule.

**These options are identical to the ones appearing in patch scheduling actions. For instructions, see Configure patch schedules.**

| Action | Description |
|---|---|
| **All Devices** | To apply this schedule to all managed devices, select this option. Clear the check box to limit the patch action to specific labels or devices. |

| Action | Description |
|---|---|
| **Device Labels** | Restrict the action to the feature updates using the associated labels that you select. This is the most commonly used option.<br>a. Click **Manage Associated Labels**.<br>b. In the *Select Labels* dialog box that appears, drag one or more labels (as applicable) to the *Limit Run to* area, then click **OK**.<br>To use this option, you must already have Smart Labels for the feature updates. See Using Smart Labels for patching. |
| **Devices** | Run patch actions on the devices that you select. The list that appears shows only applicable Linux devices.<br>• To search for devices, begin typing in the field.<br>• To remove all specified devices and start again, click **Remove All**.<br>• Scoped users can see only those devices that are associated with their role, when the role is assigned a label. For more information about user roles, see Add or edit User Roles. |
| **Operating Systems** | Select the operating systems of the devices that you want to upgrade. Only applicable Linux operating systems appear in the dialog box. The default is all operating systems. When this option is configured, the schedule only applies to devices with the selected operating systems.<br>a. Click **Manage Operating Systems**.<br>b. In the **Operating Systems** dialog box that appears, select the OS versions in the navigation tree, as applicable.<br>You have an option to select OS versions by their family, product, architecture, release ID, or build version. You can choose a specific build version, or a parent node, as needed. Selecting a parent node in the tree automatically selects the associated child nodes. This behavior allows you to select any future OS versions, as devices are added or upgraded in your managed environment. For example, to select all build current and future versions associated with the Linux Ubuntu x86_64 architecture, under **Linux > Ubuntu**, select **x64**. |

6. Click **Next**.
7. In the *Schedule* section, specify the applicable options for the schedule.

**These options are identical to the ones appearing in patch scheduling actions. For instructions, see Configure patch schedules.**

| Action | Description |
|---|---|
| **None** | Run in combination with an event rather than on a specific date or at a specific time. This option is useful if you want to patch servers manually, or perform patch actions that you do not want to run on a schedule. |
| **Every _ hours** | Run at a specified interval. |
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |
| **Run on the n**th **of every month/specific month at HH:MM** | Run on the **n**th day every month, (for example, the first or the second) day of every month, or a specific month, at the specified time. |

| Action | Description |
|---|---|
| **Run on the nth weekday of every month/specific month at HH:MM** | Run on the specific weekday of every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>`* * * * *`<br>`\| \| \| \| +————————day of week (0-6)(Sun=0)`<br>`\| \| \| +————————month (1-12)`<br>`\| \| +————————day of month (1-31)`<br>`\| +————————hour (0-23)`<br>`+————————minute (0-59)`<br>Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (/)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3.<br>Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |
| **View Task Schedule** | Click to view the task schedule. The *Task Schedule* dialog box displays a list of scheduled. Click a task to review the task details. For more information, see View task schedules. |
| **Run on next connection if offline** | Run the action the next time the managed device connects to the appliance, if the device is currently offline. This option is useful for the devices that are periodically offline. If this option is not selected, and the device is offline, the action does not run again until the next scheduled time. |

8. Click **Save**.

   **The *Linux Upgrade Package Schedule Summary* page appears, displaying the newly created or updated schedule. For more information about this page, see Review Linux package upgrade**

**schedule details. If you added any devices that match the Smart Label criteria, they are automatically included in the upgrade schedule.**

# Review Linux package upgrade schedule details

When you configure a Linux package upgrade schedule, this page displays details about the schedule configuration and its status.

1. Go to the *Linux Package Upgrade Schedule Summary* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Security**, then click **Linux Package Upgrades**.
    c. On the *Linux Package Upgrades Management* panel, click **Schedules**.
    d. Click the name of a Linux package upgrade schedule.
2. Review the *Devices Targeted* field. This number specifies the number of Linux devices that are selected for upgrade, as specified in the schedule.
3. Review the contents of the *Configuration* section.

| Option | Description |
|---|---|
| **Created** | The date and time the schedule is created. |
| **Modified** | The date and time the schedule is last modified. |
| **Last Run** | The date and time the schedule is last run. |
| **Name** | A name that identifies the schedule. This name appears on the *Linux Package Upgrade Schedules* list page. |
| **Action** | The action associated with the schedule:<br>• **Detect All**: Scans for all Linux package upgrades.<br>• **Detect and Upgrade All:** Scans for all Linux package upgrades, downloads the applicable files, and deploys them update to the selected devices. |
| **Description** | A brief description of the Linux package upgrade schedule. |
| **Devices** | This field only appears when the schedule is configured to apply to all devices. |
| **Device Label** | One or more Smart Labels associated with the devices against which the schedule runs. For more information, see Using Smart Labels for patching. This field only appears when the schedule is configured to apply to selected devices. |
| **Device Name** | One or more selected devices against which the schedule runs. This field only appears when the schedule is configured to apply to selected devices. |
| **Schedule** | The selected update schedule. Click **View Task Schedule** to see a detailed task scheduler. In the dialog box that appears, click a task to review the task details. For more information, see View task schedules. |

| Option | Description |
|---|---|
| **Run on Next Connection in Offline** | Indicates if the schedule runs the action the next time the managed device connects to the appliance, if the device is currently offline. |
| **Delay Run After Reconnect** | If configured, this option indicates the amount of time the schedule is delayed for. The time delay period begins when the update action is scheduled to run. |
| **End After** | If configured, this option indicates the maximum amount of time the schedule can run for. When this time limit is reached, any update tasks that are in progress are suspended. |

4. In the *Schedule Status* section, review the overall patch schedule status on any of the following tabs:

| Tab | Contents |
|---|---|
| **By Machine** | Devices selected for upgrading. Each entry displays the device name, its IP address, the upgrade status, upgrade results, and the date the upgrade completed, if applicable. You can expand a device node to view additional information about each package, such as the package name, version, compatible OS name, whether the package is installed on the device, and the date it is detected. |
| **By Package** | Upgrades selected for detection and installation. Each entry displays the package name, its version, compatible OS name, package ID, and indicates if the package is installed. |
| **Needs Upgrade** | Upgrades that can be installed on devices. Each entry displays the package name, version, and the compatible OS name. You can expand an update node to view the devices on which the update is to be installed. |
| **Deploy Failures** | Incomplete updates that resulted in a deployment failure. Each entry displays the update ID, associated Knowledge Base, update name, and the associated error code (see Error codes caused by patching and scripting). You can expand an update node to view the devices on which the failure is encountered. |

5. **Optional**. After reviewing the schedule details, you can perform any of the following actions:
   - To edit the schedule, click **Edit**. For more information, see Configure Windows Feature Update schedules.
   - To run the schedule, click **Run Now**.
   - To make a copy of the schedule, click **Duplicate**.
   - To delete the schedule, click **Delete**.

# Review Linux package upgrades

As you run the Detect All action, the appliance generates a list of packages that are available for upgrade.

Use the *Packages* list page to see the latest Linux packages that are available for upgrade, and installed on managed devices. Start by selecting a specific Linux OS, and review contents of the list to get an overall estimate of the device pool that requires an update.

For each package, the list shows the numbers of devices on which the package is installed or not installed, and the percent of the devices that are running the latest version.

1. Go to the *Packages* list page:

a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
b. On the left navigation bar, click **Security**, then click **Linux Package Upgrades**.
c. On the *Linux Package Upgrades Management* panel, click **Package Upgrade History**.

2. In the *Packages* list page, click **View By**, and select a Linux OS. For example, *RHEL* or *Ubuntu*.

   **The list refreshes, showing the packages detected for the selected OS.**

3. Review the contents of the list. The following columns are available:

| Column | Description |
|---|---|
| **Package Name** | The name of the detected package. |
| **Version** | The latest package version. |
| **Installed** | The number of managed Linux devices running the selected Linux OS on which the package is installed. Click the number in this column to display a list of these devices in the *Devices* list page. |
| **Needs Upgrade** | The number of managed Linux devices running the selected Linux OS that have an earlier version of this package and are candidates for an upgrade. Click the number in this column to display a list of these devices in the *Devices* list page. |
| **Completion** | The percentage of all devices that have this package installed. |

# Maintaining device and appliance security

The appliance enables you to test the security of Agent-managed devices using standard vulnerability tests and scans. To maintain appliance security, review daily security reports, and apply appliance software updates as they become available.

# Testing device security

To test device security, you can schedule OVAL vulnerability tests and SCAP scans to run on Agent-managed devices.

## About OVAL security checks

OVAL (Open Vulnerability and Assessment Language) is an internationally recognized standard for detecting security vulnerabilities and configuration issues on devices.

OVAL security checks determine assets that are out of compliance and let you customize security policies to enforce rules, schedule tests to run automatically, and run reports based on the results.

OVAL is compatible with the Common Vulnerabilities and Exposures (CVE) list. CVE content is determined by the CVE Editorial Board, which is composed of experts from the international information security community. New information about security vulnerabilities discussed on the Community Forum is sent to the CVE Initiative for

possible addition to the list. For more information about CVE, MITRE Corporation, or the OVAL Board, go to http://cve.mitre.org.

The ability to describe vulnerabilities and exposures in a common language makes it easier to share security data with other CVE-compatible databases and tools.

**NOTE:** OVAL security checks can run against devices running a supported Windows, macOS, or Linux operating system. Java 1.7 or later must be installed on managed macOS and Linux devices.

# Understanding OVAL tests and definitions

OVAL definitions contain the information required to perform OVAL tests. This information can include checks for registry entries, file versions, and WMI (Windows Management Instrumentation) data.

OVAL test definitions pass through a series of phases before being released. Depending on where a definition is in this process, it is assigned one of the following status values:

| Status | Description |
|---|---|
| **Draft** | Indicates that the definition is assigned an OVAL ID number and is under discussion on the Community Forum and by the OVAL Board. |
| **Interim** | Indicates that the definition is under review by the OVAL Board and available for discussion on the Community Forum. Definitions are generally assigned this status for two weeks, unless additional changes or discussions are required. |
| **Accepted** | Indicates that the definition has passed the Interim stage and is posted on the OVAL Definition pages. All history of discussions pertaining to Accepted definitions are linked from the OVAL definition. |

Other possible status values include:

- Initial Submission
- Deprecated

For more information about the stages of OVAL definitions, go to http://cve.mitre.org.

When OVAL tests are enabled, all available OVAL tests run on the target devices.

OVAL test details do not indicate the severity of the vulnerability. Use your own judgment to determine whether to test your network for the presence of a particular vulnerability.

## *View OVAL tests and definitions*

You can view OVAL tests and definitions in the Administrator Console.

1. Go to the *OVAL Catalog* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Security**, then click **OVAL Scan**.
    c. On the *OVAL Scan* panel, click **Catalog**.
2. **Optional**: Limit which tests are displayed by using the *View By* drop-down list or *Search* field to find OVAL tests by OVAL-ID, CVE Number, operating system, or text.
3. Click a **Name** link in the *OVAL Catalog* list.

    **The** *OVAL Definition Detail* **page displays the following information:**

| Field | Description |
|---|---|
| **OVAL-ID** | The status of the vulnerability following the OVAL-ID. Possible values are Draft, Interim, or Accepted. |
| **Class** | The nature of the vulnerability. Possible values are: Compliance, Deprecated, Patch, and Vulnerability. |
| **Ref-ID** | A link to additional details about the vulnerability. |
| **Description** | The common definition of the vulnerability as found on the CVE list. |
| **Definition** | The steps used to test whether the vulnerability exists. |

The table at the bottom of the *OVAL Tests: Definition* page displays the list of devices in your network that contain the vulnerability. For convenience, a printer-friendly version of this data is available.

## *Running OVAL tests*

The appliance runs OVAL tests automatically based on the schedule specified in OVAL Settings.

It takes approximately one hour to run OVAL tests. In addition, OVAL Tests consume a large amount of memory and CPU resources, which might affect the performance of target devices. To minimize the disruption to users, run OVAL tests weekly or monthly and during hours when users are least likely to be inconvenienced.

In addition, you can run OVAL tests manually by logging in to the device as Administrator and running `debug.bat`. This file is usually located in the program data directory. For example: `C:\ProgramData\Quest\KACE\kbots_cache\packages\kbots\9`

## *Using labels to restrict OVAL tests*

If you are running OVAL tests periodically or if you want to obtain the OVAL test results for only a few devices, you can assign a label to those devices. You can then use the *Run Now* function to run OVAL tests on those devices only.

For more information about using labels, see About labels.

## *Understanding OVAL updates*

The appliance checks for new OVAL definitions every night, but you should expect new definitions every month. If OVAL tests are enabled, the appliance downloads new OVAL definitions to all managed devices during the next scripting update whenever a new package becomes available, regardless of the OVAL schedule settings.

The OVAL update ZIP file can be more than 30 MB in size — large enough to impact the performance of devices with slow connections. The ZIP file includes both 32- and 64-bit versions of the OVAL Interpreter and uses the correct version for the device. The OVAL Interpreter requires Microsoft .NET Framework and supports both the full (“Extended”) and Client Profile versions.

## *Configure OVAL Settings*

To run OVAL tests, you must enable OVAL, select target devices and operating systems, and establish a run schedule.

OVAL tests require extensive resources and can affect the performance of target devices. Therefore, exercise caution when configuring OVAL settings.

1. Go to the *OVAL Schedule Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General

Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Security**, then click **OVAL Scan**.

c. On the *OVAL Scan* panel, click **Schedules**.

2. In the *Configure* section, specify the following settings:

| Setting | Description |
|---|---|
| **Enabled** | Run on the target devices. Only enabled configurations can run.<br>If OVAL tests are disabled, updates are stored on the appliance but they are not pushed out to target devices until OVAL tests are enabled and scheduled. |
| **Allow Run While Logged Off** | Run even if no user is logged in. Clear this check box to run the item only when a user is logged in to the device. |

3. In the *Deploy* section, specify the following settings:

| Setting | Description |
|---|---|
| **Labels** | Limit deployment to devices that belong to specified labels. To select labels, click **Edit**, drag labels to the *Limit Deployment to* window, then click **Save**.<br>If you select a label that has a Replication Share or an alternate download location, the appliance copies digital assets from that Replication Share or alternate download location instead of downloading them directly from the appliance.<br>**NOTE:** The appliance uses a Replication Share before it uses the KACE Alt Location. |
| **Devices** | Limit deployment to specific devices. In the drop-down list, select the devices to which you want to deploy the application. To filter the list, type a few characters in the *Devices* field. The number next to the field indicates the number of devices available. Scoped users can see only those devices that are associated with their role, when the role is assigned a label. For more information about user roles, see Add or edit User Roles. |
| **Operating Systems** | Select the operating systems you want to deploy to.<br>a. Click **Manage Operating Systems**.<br>b. In the **Operating Systems** dialog box that appears, select the OS versions in the navigation tree, as applicable.<br>You have an option to select OS versions by their family, product, architecture, release ID, or build version. You can choose a specific build version, or a parent node, as needed. Selecting a parent node in the tree automatically selects the associated child nodes. This behavior allows you to select any future OS versions, as devices are added or upgraded in your managed environment. For example, to select all build current and future versions associated with the Windows 10 x64 architecture, under **All** > **Windows** > **Windows 10**, select **x64**. |

4. In the *Schedule* section, specify the time and frequency for running OVAL:

| Setting | Description |
|---|---|
| **None** | Run in combination with an event rather than on a specific date or at a specific time. |
| **Every n minutes/ hours** | Run at a specified interval. |

| Setting | Description |
|---|---|
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |
| **Run on the nth of every month/ specific month at HH:MM** | Run on the same day every month, or a specific month, at the specified time. |
| **Run on the nth weekday of every month/specific month at HH:MM** | Run on the specific weekday of every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>`* * * * *`<br>`\| \| \| \| +————————day of week (0-6)(Sun=0)`<br>`\| \| \| +————————month (1-12)`<br>`\| \| +————————day of month (1-31)`<br>`\| +————————hour (0-23)`<br>`+————————minute (0-59)`<br>Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (*/*)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3.<br>Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |
| **View Task Schedule** | Click to view the task schedule. The *Task Schedule* dialog box displays a list of scheduled. Click a task to review the task details. For more information, see View task schedules. |

5. Click **Save**.
6. Click **Run Now** to run the script immediately.

**Tests run on the devices selected in the *Deploy* section.**

### View the OVAL vulnerability report

The *OVAL Report* page shows the OVAL tests that have been run since the last time the OVAL definitions were updated.

**OVAL results are deleted from this page when OVAL definitions are updated. To save the results, schedule an OVAL device report to run periodically. See Add report schedules.**

1. Go to the *OVAL Scan* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Security**, then click **OVAL Scan**.
    c. In the *Reporting* section, click **Show summary results**.

### Apply labels to affected devices

From the *Test detail* view, you can view all the devices that failed the OVAL test, and you can assign a label to those devices so that you can patch them later.

1. Go to the *OVAL Scan Summary* page:
    a. On the left navigation bar, click **Security**, then click **OVAL Scan**.
    b. Under *Reporting*, click **Show device compliance**.
2. Select the check box next to one or more tests.
3. Select **Choose Action**, then select the appropriate label under *Apply Label to Affected Devices*.

    **You can also search tests by making the appropriate selection in the *View By* drop-down list, which appears above the table on the right.**

### View the OVAL Report

The *OVAL Device Compliance* page shows a list of devices with OVAL test results. Here, you can view a summary of tests that were run on specific devices.

The label under the *Device* column in the *OVAL Computer Report* page is the inventory ID assigned by the appliance Inventory component.

For more information about any of the devices in the report, click the linked device name to navigate to the device detail page.

1. Go to the *OVAL Device Compliance* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Security**, then click **OVAL Scan**.
    c. Under *Reporting*, click **Show summary results**.

        **The *OVAL Device Compliance* page appears containing a list of OVAL reports.**

# About SCAP

SCAP (Secure Content Automation Protocol), is a set of open standards that enumerate software flaws, monitor security-related configurations and product names, and examine systems to determine the presence of vulnerabilities and rank (score) the impact of the discovered security issues on Windows devices.

SCAP is maintained by the National Institute of Standards and Technology (NIST), and its use is mandated by government agencies such as the US OMB (United States Office of Management and Budget).

SCAP uses the US government's National Vulnerability Database (NVD), which is a standards-based vulnerability management data repository. NVD includes databases of security checklists, security-related software flaws, misconfigurations, product names, and impact metrics. For more information on SCAP and NVD, go to the NIST websites at http://scap.nist.gov/index.html and http://nvd.nist.gov/.

## SCAP supported versions and platforms

The appliance supports SCAP 1.0, 1.1, 1.2, and 1.3. SCAP is certified to run on Windows 7 and higher platforms (32-bit and 64-bit systems).

The appliance conducts SCAP scans using the KACE Agent software that is installed on managed devices. SCAP is not available for devices that do not have the KACE Agent software installed, such as Agentless devices.

## How the appliance conducts SCAP scans

The appliance conducts SCAP scans by running scripts on selected Agent-managed devices using security configuration checklists from the National Checklist Repository.

For SCAP versions 1.0 and 1.1, the script checks the SCAP data stream written in XML formats using the following SCAP standards: CCE, CPE, CVE, CVSS, OVAL, and XCCDF. See Definitions of SCAP standards.

SCAP 1.2 and 1.3 add the concept of the *Data Stream*, where all of the individual results files are combined into a single XML file. In addition, these versions add a new output format called ARF (Asset Report Format 1.1). For more information, go to http://scap.nist.gov/specifications/arf/.

The appliance uses the Agent software to perform SCAP scan compliance checks. The results files are uploaded to the appliance or organization database and collated into a single file for reporting to a government agency (if required). Results are also displayed for each device on the appliance's *SCAP Scan Results* page.

If the Organization component is enabled on your appliance, you view SCAP scan results for each organization separately.

SCAP uses the OVAL Interpreter version 5.10.1 and provides:

- Security configuration monitoring of devices that have different operating systems and software applications.
- System security status at any given time.
- Compliance for various sets of security requirements.
- A standardized, automated way to perform security tasks.
- Interoperability across security tools.

These features improve software security, threat assessment, and vulnerability correction.

**NOTE:** The appliance does not currently support Tailoring.

## Definitions of SCAP standards

SCAP scans monitor device security using specified protocols and standards.

| Standard | Definition |
|---|---|
| **CCE** | Common Configuration Enumeration provides unique identifiers to system configuration issues for facilitating fast and accurate correlation of configuration data across multiple information sources and tools.<br>The compliance checking results produced by the appliance SCAP scan include the relevant CCE ID references for XCCDF and OVAL definitions for every rule checked as designated by the checklist definition. |

| Standard | Definition |
|---|---|
| | CCE information is available both in the XCCDF result file and the appliance's *SCAP Scan Results* page. |
| **CPE** | Common Platform Enumeration is a structured naming scheme for information technology systems, platforms, and packages. Based on the generic syntax for Uniform Resource Identifiers (URI), CPE includes a formal name format, a language for describing complex platforms, a method for checking names against a system, and a description format for binding text and tests to a name. In essence, CPE ensures that the security checklist is applied to the correct platform.<br>This information is available both in the XCCDF result file and the appliance's *SCAP Scan Results* page. |
| **CVE** | Common Vulnerability and Exposures is a list or dictionary that provides standard identifiers (common names) for publicly known security vulnerabilities and software flaws.<br>The compliance checking results produced by the appliance SCAP scan include the relevant CVE ID references and OVAL definition for every rule checked in the checklist definition.<br>For every patch or vulnerability, CVE ID references are provided in the appliance's *SCAP Scan Result* page.<br>The CVE information is stored in a patch result XML file generated by the scan. The file is available for inspection and verification in the Agent's working directory and on the server's *SCAP Scan Results* page. |
| **CVSS** | Common Vulnerability Scoring System provides an open framework for communicating the characteristics and impacts of IT vulnerabilities. Its quantitative model helps ensure repeatable accurate measurement while enabling users to see the underlying vulnerability characteristics that were used to generate the scores. CVSS is well suited for industries, organizations, and governments that need accurate and consistent vulnerability impact scores. Among others, CVSS assists prioritizing vulnerability remediation activities and calculating the severity of vulnerabilities. The National Vulnerability Database (NVD) provides CVSS scores for almost all known vulnerabilities. |
| **OVAL** | Open Vulnerability and Assessment Language is an international, information security, community standard for promoting open and publicly available security content. It standardizes the transfer of this information across the entire spectrum of security tools and services.<br>The results of each OVAL test are written to several files on the target device and then compiled into a single result file on the appliance and displayed on the *SCAP Scan Results* page. |
| **SCAP** | Secure Content Automation Protocol is a set of open standards that enumerate software flaws, monitor security-related configurations and product names, and examine devices to determine the presence of vulnerabilities and rank (score) the impact of the discovered security issues. See About SCAP. |
| **XCCDF** | The eXtensible Configuration Checklist Description Format is a specification language for writing security checklists, benchmarks, and related documents. An XCCDF file contains a structured collection of security configuration rules for a set of target devices. The specification is designed to support information interchange, document generation, organizational and situational tailoring, automated compliance testing, and compliance scoring. See How a SCAP scan works. |

# About benchmarks

A SCAP benchmark is a security configuration checklist that contains a series of rules for evaluating the vulnerabilities of a device in a particular operational environment.

The NIST (National Institute of Standards and Technology) maintains the National Checklist Repository that contains various security configuration checklists for specific IT products and categories of IT products.

The USGCB (United States Government Configuration Baseline) benchmark standard evolved from the FDCC (Federal Desktop Core Configuration), and currently addresses Windows OS.

**SCAP 1.0 and 1.1 only.** A checklist consists of a ZIP file that contains several XML files called a SCAP Stream. The primary file in the Stream is the XCCDF file. The XCCDF file is a structured collection of security configuration rules for a set of target devices. Essentially, it is a list of OVAL tests that should be run. The other XML files contain the OVAL tests specified in the XCCDF file. For detailed information on the XCCDF Specification, go to http://scap.nist.gov/specifications/xccdf/.

**SCAP 1.2 and later only**. These versions use a single file containing all required streams.

A benchmark can contain one or more profiles. A profile specifies the rules that run on specific kinds of devices. For example, a benchmark might contain one set of rules for desktops and another set for servers.

# How a SCAP scan works

Before SCAP scans are conducted, the appliance imports and verifies a benchmark. After it is imported and verified, the benchmark is loaded into the appliance and the XCCDF file undergoes a process called resolution.

During resolution, the `oval-command.zip` file is generated. This ZIP file contains the input files necessary to run a particular profile. You can view the files on the *Script Detail* page. See Configure SCAP schedules.

The SCAP scan is controlled by a KScript. When the scan runs, the following files are downloaded to the target device as script dependencies:

- `benchmark.zip`: contains the benchmark files, that is, the SCAP Stream that was uploaded to the appliance. (The XCCDF file is not actually used by the device.)
- `oval-command.zip`: contains the input files generated by the XCCDF.
- `ovalref.zip`: contains the OVAL scanning engine (`ovaldi.exe`).

The KScript initiates the OVAL scans on the target device and generates several results files. The OVAL scanning engine runs two or three times:

- The first run checks that the target device is the correct platform for that benchmark profile using the CPE files contained in the benchmark.
- The second run checks the vulnerability of the device using the rules defined in the benchmark. It implements the CCE standard.
- The third run checks that the security patches are up-to-date. It implements the CVE standard.

Each run generates a results file. These files are named according to the run. For example, the file from the first run is named `scap-profile-10-result-1.xml` and the second is named `scap-profile-10-result-2.xml`. These files are located in the following directory: `C:\Documents and Settings\All Users\Quest\KACE\kbots_cache\packages\kbots\`**<working directory>**.

To find the KACE Agent's working directory, go to **Inventory** > **Devices** > **Device Detail** > **Logs**.

These results files are then uploaded to the appliance and collated into a single results file (`xccdf-results.xml`). You can use this file for reporting the results to a government agency such as the US OMB (United States Office of Management and Budget). The appliance and managed device retain only the latest results files.

In the final step of a run, a subset of the results files is extracted and stored in the Organization database for reporting and displayed on the *SCAP Scan Results* page for each device.

The database tables that contain this information are SCAP_RESULT, SCAP_RESULT_RULE, and SCAP_RESULT_SCORE. See View SCAP scan results.

## Access SCAP Scan information

You can access SCAP Scan information in the *Security* section.

1. Go to *SCAP Scan* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Security**, then click **SCAP Scan**.
    c. This page has three links:

    - **Catalog**: Shows the status of SCAP benchmarks. Additionally from this page, you can import checklists, delete checklists, and export a checklist to CSV format.
    - **Schedules**: Displays the name of the benchmarks and when they are scheduled to run. Additionally from this page, you can add and delete benchmarks, enable or disable benchmarks, and export a benchmark to CSV format.
    - **Reporting**: Shows the general results of SCAP scans.

    The page also displays a dashboard that shows the results by benchmark. For a device to pass a benchmark, it must score 100%.

## View and manage benchmarks

You can view and manage SCAP benchmarks, which include profiles and checklists that have been imported to the appliance.

Additionally, you can import benchmarks, delete benchmarks, and export benchmarks to CSV format by selecting **Choose Action** on the *SCAP Catalog* page.

1. Go to *SCAP Catalog* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Security**, then click **SCAP Scan**.
    c. On the *SCAP Scan* panel, click **Catalog**.
2. **Optional**: Specify which benchmarks are displayed using either the *View By* drop-down list or *Search* field.

    **You can search by partial string in the title or identifier.**
3. **Optional**: To sort the benchmarks, click a column heading.
4. Click the name of a benchmark to view details.

    The *SCAP Catalog* contains general information about the selected benchmark and the time and date that the SCAP data was uploaded to the appliance. See Download benchmarks from the archive.

## Import and modify benchmarks

You can import and modify benchmarks from the National Checklist Repository as needed.

Download benchmarks or checklists from the National Checklist Repository at https://web.nvd.nist.gov/view/ncp/repository.

1. Go to *SCAP Catalog* list:

a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
b. On the left navigation bar, click **Security**, then click **SCAP Scan**.
c. On the *SCAP Scan* panel, click **Catalog**.

2. Select **Choose Action** > **Import New Checklists**.

   **The** *SCAP Configuration Scan Settings* **page appears and displays Step 1 of the import wizard.**
3. Click **Browse** or **Choose File** to import a benchmark ZIP file.
4. Click **Next**.

   **A dialog box appears indicating that the file is being uploaded. After the file is uploaded, a message appears on the** *SCAP Configuration Scan Settings* **page that the import was successful.**

   **NOTE:** The appliance verifies that the ZIP file contains valid benchmarks. If no valid benchmarks are present, an error message appears and the file is not uploaded.
5. Select a benchmark in the *Select a profile to scan* drop-down list, then click **Next**.

   **Step 2 appears.**
6. Select the OVAL Engine that you want to use in the *Scan using existing engine* drop-down list.

   **NOTE:** The default engine is MITRE's OVAL Interpreter (`ovaldi.exe`). The appliance automatically downloads updates to this engine when Quest certifies and releases new versions of the engine and OVAL definitions.
7. **Optional**: Click **Browse** or **Choose File** to find and upload a custom engine and its configuration files.

   **A dialog box appears indicating that the file is being uploaded and a message appears on the** *SCAP Configuration Scan Settings* **page that the engine was successfully imported.**

   **TIP:** Use a custom engine if you need local control of the OVAL engine or if you do not want automatic updates to change the engine. The custom engine must be a ZIP file of a folder containing the custom `ovaldi.exe` and any necessary configuration files required to run the engine. This ZIP file replaces the `ovalref.zip` dependency file in the SCAP scan script. See View the resolved XCCDF files.
8. Click **Next**.

A dialog box appears indicating that the benchmark file is being loaded, followed by the *Script Detail* page. See Editing SCAP scan schedules.

## *Configure SCAP schedules*

You can import benchmarks or definitions, and change settings for SCAP scans, by configuring SCAP schedules.

1. Go to *SCAP Scan Schedules* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Security**, then click **SCAP Scan**.
   c. On the *SCAP Scan* panel, click **Schedules**.
2. Select **Choose Action** and select an action to add or delete benchmarks, enable or disable benchmarks, and export a benchmark to CSV format.
3. Click a benchmark to edit its schedule on the *Script Detail* page.
4. Scroll down the page to the *Scheduling* section and make the necessary changes.

# Editing SCAP scan schedules

You can view or edit a benchmark schedule on the *Script Detail* page. This page allows you to manage and customize scripts for configuring, scheduling, and specifying which devices the SCAP scan runs on. The scripts for SCAP are standard KScripts.

**NOTE:** This section does not provide information about every feature available on the *Script Detail* page; it only contains information pertinent to using and understanding a SCAP scan.

**NOTE:** For more detailed information on editing a KScript, see Adding and editing scripts.

You can access the *Script Detail* page from the Benchmark wizard, as described in Access SCAP Scan information and from the *SCAP Scan Schedules* page, as described in View SCAP scan results.

## *View the resolved XCCDF files*

You can view the input files generated by the SCAP scan resolution process.

A benchmark is loaded into the server and the XCCDF file undergoes a process called resolution, which generates the input files necessary to run a particular profile.

1. Go to the *Script Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Scripting**, then click **Scripts**.
    c. Click the name of a script.
2. (Optional) To add any supporting executable files necessary to run the script, scroll down to the *Dependencies* section, then click **Add a new dependency**, then click **Browse** or **Choose File**.
3. **Optional**: To view the details of these files, click and download the selected ZIP file.
4. To see how these dependency files are executed, view the *Task* sections.

## *View the OVAL timestamp*

You can view the OVAL timestamp (the time the OVAL document was compiled).

1. Go to the *Script Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Scripting**, then click **Scripts**.
    c. Click the name of a script.
2. Scroll down to the *Dependencies* section, then click **benchmark.zip** and extract the OVAL XML file.

    **For example, `fdcc-winxp-oval.xml`.**

3. In the OVAL file, look for **<oval:timestamp>**.

## *View script tasks*

You can view tasks associated with a particular script.

1. Go to the *Script Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Scripting**, then click **Scripts**.
c. Click the name of a script.
2. Scroll down to the *Task* sections.

The Task sections are displayed on the *Script Detail* page.

## View SCAP scan results

The *Scan Results* page shows the results of SCAP scans per device. From this page you can access detailed information about each scan.

1. Go to *SCAP Scan* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Security**, then click **SCAP Scan**.
   c. On the *SCAP Scan* panel, click **Reporting**.
2. **Optional**: To display the results for a specific benchmark, select the desired benchmark in the *View By* drop-down list, which appears above the table on the right.

   **The results page contains the following information:**

| Section | Description |
|---|---|
| **Device Name** | The device on which the scan was run. |
| **Benchmark - Profile** | The particular profile in a benchmark that was used. |
| **Scanned** | The date and time that the scan was run. |
| **Passed** | The number of rules that the device passed. |
| **Failed** | The number of rules that the device failed. |
| **Other** | The number of rules having other values such as error, unknown, not checked, not applicable, and informational.<br>The XCCDF specification also defines “not selected”, which is excluded from the results. |
| **Total** | The total number of rules that were executed. |
| **Compliance** | The percentage of rules that were passed. |
| **Score** | The default score defined by the benchmark. |
| **Result** | The Pass or Fail results of the scan. |

3. To view the details on a particular device, click its name in the *Device* column.

   A page containing the details of the scan result for the selected device appears. The following table describes each section in more detail:

| Section | Description |
|---|---|
| **Summary** | General information about the benchmark. |
| **Test Results** | Test results in a tree structure that represents the grouping of the rules. Symbols display the pass-fail status of a rule. You can click a rule to open a dialog box containing the rule's details. |
| **Scores** | Compliance scores for each scoring model as defined for the benchmark. |
| **Results by CCE** | Pass-fail results by CCE. The FDCC requires that compliance is reported by CCE. |
| **Result XML files** | Links to the XML files:<br>• **XCCDF Benchmark**: The file processed by the XCCDF file and formatted into a single results file (`xccdf-results.xml`) from each run of the OVAL scanning engine.<br>• **CPE Inventory**: The file output by the first run of the OVAL scanning engine to test whether the benchmark applies to the device being scanned.<br>• **Oval Compliance**: The file output by the second run of the OVAL scanning engine to test the device against the rules defined in the benchmark.<br>• **OVAL Patches**: The file output by the third run of the OVAL scanning engine to ensure that the security patches are up-to-date.<br>See How a SCAP scan works. |

4. To view a rule's details, click the rule's icon.

   **The *Viewing Details* for that rule appears. This page shows a description of the rule from the XCCDF definition, whether the device passed or failed the rule, and the XML for the rule.**

### *Download benchmarks from the archive*

On a daily basis, the appliance gathers the SCAP scan results from devices and creates an archive for each benchmark. The benchmark archive consists of a ZIP file that can be sent to the appropriate agency, such as the US OMB (United States Office of Management and Budget).

1. Go to *SCAP Catalog* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Security**, then click **SCAP Scan**.
   c. On the *SCAP Scan* panel, click **Catalog**.
2. Click the name of the benchmark you want to download.
3. In the *Download Results Archive* field, click the ZIP file to download the archive.

   **This file contains the results for all devices that have been scanned with the selected benchmark.**

# Resolve Windows security issues that prevent Agent provisioning

If Windows security settings prevent the appliance from provisioning the Agent to Windows devices, you can reconfigure settings through a command prompt.

To allow provisioning, you must open the firewall and configure security settings.

1. Open a command prompt on the device.
2. Open the firewall and configure security settings:

```
reg add HKLM\SYSTEM\CurrentControlSet\Control\Lsa /v ForceGuest /t REG_DWORD /d
0 /f

reg add HKLM\Software\Microsoft\Windows\CurrentVersion\Policies\system /v
LocalAccountTokenFilterPolicy /t REG_DWORD /d 1 /f

reg add "HKLM\SYSTEM\CurrentControlSet\Control\Terminal Server" /v
FdenyTSConnections /t REG_DWORD /d 0 /f

netsh.exe firewall set service type=FILEANDPRINT mode=ENABLE scope=ALL

netsh.exe firewall set service type=REMOTEADMIN mode=ENABLE scope=ALL
```

# Maintaining appliance security

To maintain appliance security, review daily security reports, and apply appliance software updates as they become available.

When appliance software updates are available, they are advertised on the appliance Dashboard.

## Security run output

The appliance security status is provided in the **security run output** email.

The appliance **security run output** is automatically emailed to the system administrator every day at 02:00.

The following example shows the content of the **security run output**.

```
Checking setuid files and devices:
Checking for uids of 0:
root 0
toor 0
Checking for passwordless accounts:
MyK1 kernel log messages:
+++ /tmp/security.G1jFJvQh 2013-04-21 02:01:01.000000000 -0700
+em0: link state changed to DOWN
+em0: link state changed to UP
+em0: link state changed to DOWN
+em0: link state changed to UP
+em0: link state changed to DOWN
+em0: link state changed to UP
+em0: link state changed to DOWN
+em0: link state changed to UP
+em0: link state changed to DOWN
+em0: link state changed to UP
+em0: link state changed to DOWN
+em0: link state changed to UP
+em0: link state changed to DOWN
+em0: link state changed to UP
MyK1 login failures:
MyK1 refused connections:
-- End of security output --
```

# Manage quarantined file attachments

The appliance includes a malware scanning feature for Service Desk file attachments. An automated process on the appliance ensures that the virus definition lists are updated on a regular basis. Any files attached to Service Desk tickets, and also any attachments to ticket-related email are scanned before they are added to the tickets.

Quarantined files are listed on the *Antivirus Quarantine* page. Use this page to review and manage quarantined Service Desk attachments. A notification appears when a threat is detected, with a link to the device associated with the file. You can also create notifications when specific kinds of threats are detected, or based on their status change.

1. Go to the *Antivirus Quarantine* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Security**, then click **Antivirus Quarantine**.

    **By default, the** *Antivirus Quarantine* **page displays new threats that have not been rejected or released from the quarantine. These items are always included in the appliance backup. You can filter this list using the** *View By* **menu, as required.**
2. Review the list of files and perform applicable actions.

    **For each quarantined file, the list displays its name, the time the file was first and last seen, the name of the malware variant, and additional information about the file's release or rejection, as applicable.**

    - To enable access to a quarantined file in the associated Service Desk ticket, select it in the list and click **Choose Action** > **Release**.
    - To block access to a quarantined file in the Service Desk ticket, select it in the list and click **Choose Action** > **Reject**.
    - To delete a quarantined file from the Service Desk ticket, select it in the list and click **Choose Action** > **Delete**

    **The Choose Action menu also allows you to export the list, or to create a report.**

# Using reports and scheduling notifications

You can configure the appliance to run reports and send notifications to administrators when specified criteria are met.

# About reports and notifications

The appliance enables you to create and schedule a variety of reports and notifications. Reports collect information about inventory items, and notifications enable the appliance to alert you by email when specified criteria are met.

## About reports

The appliance includes many standard reports for software, hardware, Service Desk, and other items.

If the Organization component is enabled on your appliance, you can create and run reports for each organization and for the System-level separately. System-level reports include consolidated reports that aggregate information from all organizations, as well as standard reports for various appliance components.

## About notifications

Notifications are email messages the appliance sends to administrators when devices, scan results, and assets meet specified criteria.

For example, if you want to notify administrators when devices approach disk space limits, you can set up alerts based on disk usage. Notifications are sent when devices meet the specified criteria.

The appliance checks inventory against the criteria in the notification schedules at the specified frequency. When an item meets the criteria, the appliance sends email to the specified recipients.

By default, the appliance checks inventory every hour. To change the frequency, edit the notification schedule. See Edit notification schedules.

**NOTE:** Notifications and daily reports come from the default address, Charlie Root, (`root@`**appliance_hostname**) and you cannot modify this address.

# Tracking changes to report settings

If History subscriptions are configured to retain information, you can view the details of the changes made to settings, assets, and objects.

This information includes the date the change was made and the user who made the change, which can be useful during troubleshooting. See About history settings.

# Creating and modifying reports

You can create reports from list pages using SQL queries and from the *Reporting* section using the report wizard.

# Creating reports

You can create reports to collect and analyze data, such as inventory information.

There are several ways to create reports:

- Use the report wizard on the Reports page. See Create reports using the report wizard.
- Use the SQL report form on the Reports page. See Create reports using SQL queries.
- Use the menu option on list pages, such as *Devices*, *Assets*, *Managed Installations*, and so on. See Create reports from list pages.

In addition, you can create charts and graphs by generating reports in XSL (Microsoft Excel) or CSV (comma-separated value) format, then importing the data into a tool such as Microsoft Excel.

**NOTE:** Be aware that multibyte characters, such as those used to support Japanese and Chinese character sets, might display as "garbage characters" when CSV files are imported to Excel. For more information, contact Quest Support at https://support.quest.com/contact-support.

## Create reports using the report wizard

You can use the report wizard to identify the information you want to collect from the database without writing SQL queries.

1. Go to the *Reports* list by doing one of the following:
   - **If your appliance has the Organization component enabled, and you want to access a System-level report:**

     Log in to the appliance System Administration Console, `https://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page. Then click **Reporting**. System-level reports include consolidated reports that aggregate information from all organizations, as well as standard reports for various appliance components.
   - **If your appliance does not have the Organization component enabled, or if you want to access an organization-level report, log in to the appliance Administrator Console, `https://appliance_hostname/admin`. Or, if the** *Show organization menu in admin header* **option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information. Then click Reporting.**

     Organization-level reports include standard reports for various appliance components. If the Organization component is enabled on your appliance, these reports provide information specific to the selected organization.

   **The** *Reports* **list appears.**
2. Select **Choose Action** > **New (Wizard)** to display the *Title and Topic* page.
3. Specify the following settings:

| Option | Description |
|---|---|
| **Title** | The display name of the report, which appears on the report list. Make the title as descriptive as possible, so you can distinguish the report from others in the list. |

| Option | Description |
|---|---|
| **Category** | The category of the report. If the category does not already exist, it is added to the drop-down list on the *Reports* page. |
| **Description** | A description of the report. |
| **Show Line Numbers** | Display a column with line numbers on the report. |
| **Topic** | The topic of the report. This setting determines the fields that are available for the report. |
| **add a subtopic** | Click this link to add up to two related topics to the report. This enables you to show relationships between up to three types of data in the same report.<br>When you generate the report in HTML format, you can expand and collapse the rows to drill down into the information as needed.<br>When you click **add a subtopic**, additional options become available, depending on the topic you select. For example, if you select **Device**, **Software**, and **File Synchronization**, the following two check boxes appear:<br>• Only show rows from **Device** with at least one **File Synchronization** row.<br>• Only show rows from **File Synchronization** with at least one **Software** row.<br>Selecting these check boxes would limit the report to devices and software that have at least one child row. Device rows would appear in the report only if they have at least one corresponding software row; Software rows would appear in the report only if they have at least one corresponding File Synchronization row.<br>Clear these check boxes to show all device and software rows regardless of whether they contain any software or File Synchronization rows, respectively. |

4. Click **Next** to display the *Fields to Display* page.
5. Select the fields that you want to include in the report.
6. Click **Next** to display the *Column Order* page.
7. Drag the fields, from top to bottom, to set the order in which column headings appear. In the report output, columns headings appear in left-to-right order.
8. Click **Next** to display the *Sort and Breaks* page.
9. Configure how the rows are arranged:
   - **Order By**: Specify how the results are sorted. Report data is organized by the selection in the first field, and then by the second field, and then by the third field. The first sort field is populated with the first field selected to be displayed on the report output page.
   - **Sequence**: Specify whether to display the results in ascending or descending alphanumeric order.
   - **Break Header**: Choose whether to group results under a subheading using the name of the field selected in *Order By*.
10. Click **Next** to display the *Filters* page.
11. **Optional**: If you do not want to return the entire data set in your report, add filter criteria:
    a. Click **Specify rules to filter the records**.

       **A rule set, with** *Match all of the following* **appears. These rules are equivalent to and statements in Boolean logic. To appear in the report, items must match all of the rules in this section.**

    b. Specify filter criteria, then click **Save**.

c. To add a rule to the current rule set, click the **Add** button .

d. Select filter criteria, then click **Save** at the right of the row.

e. To add a subset of rules, click the **Add Subset** button: .

**The first nested subset adds a Match any of the following set of rules. These rules are equivalent to or statements in Boolean logic. This enables you to nest or criteria under the top-level and criteria. To appear in the report, items must match the criteria in the Match all of the following rule set and at least one criterion in the Match any of the following rule set.**

f. Click **Save** next to the rule set.

g. Add additional rules and rule subsets as needed.

12. Click **Save**.

**The *Reports* page appears with the new report listed. The *View By* list, which appears above the table on the right, is automatically set to the category of the new report.**

13. To run the report, click a format in the *Generate Report* column.

**The output is generated. In HTML reports, the first data column is automatically linked to the detail page for the item in the Administrator Console.**

**TIP:** Charts and graphs cannot be created from within the appliance reporting tool. To create charts or graphs, generate a report in **XLS** (Microsoft Excel) or **CSV** (comma-separated value) format, then import the data into a tool that has chart or graph capabilities, such as Microsoft Excel.

# Create reports using SQL queries

You can create reports by entering SQL queries on the report form.

If you do not know the SQL queries to use, consider using the report wizard. See Create reports using the report wizard.

1. Go to the *Reports* list by doing one of the following:

   - **If your appliance has the Organization component enabled, and you want to access a System-level report:**

     Log in to the appliance System Administration Console, `https://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page. Then click **Reporting**. System-level reports include consolidated reports that aggregate information from all organizations, as well as standard reports for various appliance components.

   - **If your appliance does not have the Organization component enabled, or if you want to access an organization-level report, log in to the appliance Administrator Console, `https://`appliance_hostname`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information. Then click Reporting.**

     Organization-level reports include standard reports for various appliance components. If the Organization component is enabled on your appliance, these reports provide information specific to the selected organization.

   **The *Reports* list appears.**

2. Select **Choose Action** > **New (SQL)** to display the *Report Detail* page.
3. Specify report settings:

| Option | Description |
|---|---|
| **Title** | The display name of the report, which appears on the report list. Make the title as descriptive as possible, so you can distinguish the report from others in the list. |

| Option | Description |
|---|---|
| **Description** | A description of the report. |
| **Category** | The category of the report. If the category does not already exist, it is added to the drop-down list on the *Reports* page. |
| **Break on Columns** | A comma-separated list of SQL column names. The report generates break headers and subtotals for these columns. |
| **Show Line Numbers** | Display a column with line numbers on the report. |
| **SQL** | The query statement that generates the report data. For more information, go to the MySQL documentation at http://dev.mysql.com/doc/refman/5.0/en/.<br>When writing a report or query against the Service Desk HD_Ticket table, be aware that the *User* custom field stores the user ID from the USER table in the HD_TICKET table, which is the table that holds the ticket record. If you want to display the username instead of the user ID in the report, you need to JOIN on the USER table.<br>See Database table names. |
| **Organization settings** | These settings are available only at the System level on appliances with the Organization component enabled. Options include:<br>• **All Organizations**: The SQL Select statement is modified to iterate across all organizations, and the report contains information for all organizations.<br>• **Aggregate results**: The SQL Select statement is modified to combine the records of all organizations, and the report contains summary information for all organizations. Standard reports of this type are categorized as Consolidated Reports. |

4. Click **Save**.

   **The appliance checks the report syntax and displays any errors.**
5. To run the new report, click a format in the *Generate Report* column.

**TIP:** Charts and graphs cannot be created from within the appliance reporting tool. To create charts or graphs, generate a report in **XLS** (Microsoft Excel) or **CSV** (comma-separated value) format, then import the data into a tool that has chart or graph capabilities, such as Microsoft Excel.

# Create reports from list pages

You can create reports while viewing list pages, such as the *Devices* page.

1. Go to a list page. For example, to go to the *Devices* page, do the following:
   a. If applicable, select an organization in the drop-down list in the top-right corner of the page.
   b. On the left navigation bar, click **Inventory**, then click **Dashboard**.
2. Select **Choose Action** > **Create Report** to display the *Report Detail* page.
3. Specify report settings:

| Option | Description |
|---|---|
| **Title** | The display name of the report, which appears on the report list. Make the title as descriptive as possible, so you can distinguish the report from others in the list. |

| Option | Description |
|---|---|
| **Description** | A description of the report. |
| **Category** | The category of the report. If the category does not already exist, it is added to the drop-down list on the *Reports* page. |
| **Break on Columns** | A comma-separated list of SQL column names. The report generates break headers and subtotals for these columns. |
| **Show Line Numbers** | Display a column with line numbers on the report. |
| **SQL** | The query statement that generates the report data. For more information, go to the MySQL documentation at http://dev.mysql.com/doc/refman/5.0/en/.<br>When writing a report or query against the Service Desk HD_Ticket table, be aware that the *User* custom field stores the user ID from the USER table in the HD_TICKET table, which is the table that holds the ticket record. If you want to display the username instead of the user ID in the report, you need to JOIN on the USER table. |

4. Click **Save**.

The report appears on the *Reports* page.

# Duplicate reports

You can duplicate any report, including standard reports that are shipped with the appliance. If you are creating a report that is similar to an existing report, duplicating the existing report can be faster than creating a report from scratch.

1. Go to the *Reports* list by doing one of the following:
   - **If your appliance has the Organization component enabled, and you want to access a System-level report:**

     Log in to the appliance System Administration Console, `https://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page. Then click **Reporting**. System-level reports include consolidated reports that aggregate information from all organizations, as well as standard reports for various appliance components.
   - **If your appliance does not have the Organization component enabled, or if you want to access an organization-level report, log in to the appliance Administrator Console, `https://`appliance_hostname`/admin`. Or, if the** *Show organization menu in admin header* **option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information. Then click Reporting.**

     Organization-level reports include standard reports for various appliance components. If the Organization component is enabled on your appliance, these reports provide information specific to the selected organization.

   **The** *Reports* **list appears.**
2. Click the title of a report.

   **Depending on the type of report, either the** *Report Detail* **page or the first page in the report wizard appears.**
3. At the bottom of the page, click **Duplicate**.

   **Depending on the type of report, either the** *Report Detail* **page or the first page in the report wizard appears.**
4. Modify the report details as necessary, then click **Save**.

## Edit SQL statements on reports created with the report wizard

You can edit the SQL statements on single-topic reports created with the report wizard.

This editing is useful when you want to change the SQL statement, or when you want to copy the SQL statement to a new report. The edit option is not available on multi-topic reports.

1. Go to the *Reports* list by doing one of the following:
   - **If your appliance has the Organization component enabled, and you want to access a System-level report:**

     Log in to the appliance System Administration Console, `https://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page. Then click **Reporting**. System-level reports include consolidated reports that aggregate information from all organizations, as well as standard reports for various appliance components.
   - **If your appliance does not have the Organization component enabled, or if you want to access an organization-level report, log in to the appliance Administrator Console, `https://`appliance_hostname`/admin`. Or, if the** *Show organization menu in admin header* **option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information. Then click Reporting.**

     Organization-level reports include standard reports for various appliance components. If the Organization component is enabled on your appliance, these reports provide information specific to the selected organization.

   **The** *Reports* **list appears.**
2. Click the title of a single-topic report created with the report wizard.

   **The report wizard appears.**
3. At the bottom of the form, click **Edit SQL** to display the *Report Detail* page.
4. Edit or copy text in the *SQL* field as needed, then click **Save**.

> **NOTE:** When copying SQL statements from one type of report to another, you might have to modify the SQL statement before you can use it. For example, if you copy the SQL statement from an application compliance report, and paste it into a report that has the *Aggregate Results* option for organizations selected, the appliance reports errors in the SQL statement. You cannot save the report until the errors are resolved.

## Create reports from history lists

You can create reports from any history list.

1. Go to the history list for settings, assets, or objects:
   - View asset history
   - View object history
   - View settings history
2. Select **Choose Action** > **Create Report**.

   **The** *Report Detail* **page appears. See Create reports from list pages.**

# Modifying reports

You can modify or delete reports as needed.

## Edit reports

You can edit any custom report, but you cannot edit the standard reports that are shipped with the appliance.

To edit a standard report, first duplicate it, then edit the duplicated report. See Duplicate reports.

1. Do one of the following:
   - **To edit organization-level reports, select an organization in the drop-down list in the top-right corner of the page (if applicable), then click Reporting.**
   - **To edit System-level reports, log in to the System Administration Console, `http://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page. Then click Reporting (for appliances with the Organization component enabled only).**

   **The *Reports* page appears.**
2. Click the title of a report to display the *Report Detail* page.

## Delete reports

You can delete any custom report, but you cannot delete standard reports shipped with the appliance.

1. Do one of the following:
   - **To delete organization-level reports, select an organization in the drop-down list in the top-right corner of the page (if applicable), then click Reporting.**
   - **To delete System-level reports, log in to the System Administration Console, `http://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page. Then click Reporting (for appliances with the Organization component enabled only).**

   **The *Reports* page appears.**
2. Select the check box next to one or more reports.
3. Select **Choose Action** > **Delete**, then click **Yes** to confirm.

# Customizing logos used for reports

Reports use the Quest logo by default, but you can replace it with your own logo.

To upload your own logo, see the *Logo Overrides* sections in:

- Configure appliance General Settings with the Organization component enabled
- Configure appliance General Settings without the Organization component

# Scheduling reports and notifications

You can schedule reports and notifications to monitor the activity on your appliance.

# Running single-organization and consolidated reports

If the Organization component is enabled on your appliance, and if you have multiple organizations on your appliance, you can run single-organization reports for each organization separately.

In addition, you can run consolidated reports that provide information for all organizations in a single report.

## Run single-organization reports

Single-organization reports show information specific to a single organization.

If the Organization component is not enabled on your appliance, or if you have only a single organization, these reports provide information about the Default organization.

1. Go to the *Reports* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Reporting**, then click **Reports**.
2. In the *Generate Report* column, click a format type for the report.

    **HTML reports are displayed in a new window. For other formats, you can open the file or save it to your device.**

    **NOTE:** Charts and graphs cannot be created from within the appliance reporting tool. To create charts or graphs, generate a report in **XLS** (Microsoft Excel) or **CSV** (comma-separated value) format, then import the data into a tool that has chart or graph capabilities, such as Microsoft Excel.

    **NOTE:** Be aware that multibyte characters, such as those used to support Japanese and Chinese character sets, might display as "garbage characters" when CSV files are imported to Excel. For more information, contact Quest Support at https://support.quest.com/contact-support.

## Run consolidated organization reports

If the Organization component is enabled on your appliance, you can run reports that consolidate the information from all organizations into a single report.

1. Go to the *Reports* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Reporting**, then click **Reports**.
2. In the *Generate Report* column, click a format type for the report.

    **HTML reports are displayed in a new window. For other formats, you can open the file or save it to your device.**

    **NOTE:** Charts and graphs cannot be created from within the appliance reporting tool. To create charts or graphs, generate a report in **XLS** (Microsoft Excel) or **CSV** (comma-separated value) format, then import the data into a tool that has chart or graph capabilities, such as Microsoft Excel.

    **NOTE:** Be aware that multibyte characters, such as those used to support Japanese and Chinese character sets, might display as "garbage characters" when CSV files are imported to Excel. For more information, contact Quest Support at https://support.quest.com/contact-support.

# Scheduling reports

To monitor your environment, you can schedule the appliance to run reports and send them to administrators at specified times and intervals. This is useful for tracking software, devices, and system health.

## Add report schedules

You can add report schedules to enable the appliance to run reports automatically at specified times. This is useful for reports that you need to run periodically, such as software License Compliance reports.

1. Do one of the following:
   - **To schedule organization-level reports, select an organization in the drop-down list in the top-right corner of the page (if applicable), then click Reporting.**
   - **To schedule System-level reports, log in to the System Administration Console, `http://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page. Then click Reporting (for appliances with the Organization component enabled only).**

   **The *Reports* page appears.**
2. Do one of the following:
   - **Click the Schedule button next to a report: .**
   - **Click Report Schedules on the left navigation bar, then select Choose Action > New to display the *Report Schedule Detail* page.**
3. Specify the following settings.

| Option | Description |
|---|---|
| **Name** | The display name for the schedule. Make this name as descriptive as possible, so you can distinguish this schedule from others. |
| **Report** | The name of the report you are scheduling. This name is provided automatically if you click the **Schedule** button next to a report on the *Reports* page. |
| **Formats** | The format of the report. |
| **Description** | A description of the schedule. This description appears on the *Schedule Reports* page. |

4. In the *Notify* section, specify the following settings:

| Option | Description |
|---|---|
| **Subject** | The subject line of the email message that contains the report. |
| **Recipients** | The email addresses where the report is to be sent. Separate multiple addresses with a comma. |
| **Don't send empty reports** | Whether the appliance should send the report every time, or only when results are found. Select this option to prevent the appliance from sending the report if it is empty. |
| **Message** | Any information you want to provide in the body of the email message. |

| Option | Description |
|---|---|
| **Attachment Options** | The format for the report. Choose **Attachment** to attach the file to the email message, or choose **Zipped Attachment** to attach the file as a ZIP archive. |

5. In the *Schedule* section, specify the following settings:

| Option | Description |
|---|---|
| **None** | Run in combination with an event rather than on a specific date or at a specific time. |
| **Every n hours** | Run at a specified interval. |
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |
| **Run on the nth of every month/ specific month at HH:MM** | Run on the same day every month, or a specific month, at the specified time. |
| **Run on the nth weekday of every month/specific month at HH:MM** | Run on the specific weekday of every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>`* * * * *`<br>`\| \| \| \| +————————day of week (0-6)(Sun=0)`<br>`\| \| \| +————————month (1-12)`<br>`\| \| +————————day of month (1-31)`<br>`\| +————————hour (0-23)`<br>`+————————minute (0-59)`<br>Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (/)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3. |

| Option | Description |
|---|---|
| | Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |
| **View Task Schedule** | Click to view the task schedule. The *Task Schedule* dialog box displays a list of scheduled tasks. Click a task to review the task details. For more information, see View task schedules. |

6. Click **Save**.

## Delete report schedules

Report schedules enable the appliance to run reports at specified times and intervals. When you delete report schedules, both the report criteria and the schedule settings are removed from the appliance.

Report schedules can be deleted any time as needed.

1. Do one of the following:
   - **To delete organization-level report schedules, select an organization in the drop-down list in the top-right corner of the page (if applicable), then click Reporting.**
   - **To delete System-level report schedules, log in to the System Administration Console, `http://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page. Then click Reporting (for appliances with the Organization component enabled only).**

   **The *Reports* page appears.**
2. On the left navigation bar, click **Report Schedules** to display the *Report Schedules* page.
3. Select the check box next to one or more report schedules.
4. Select **Choose Action** > **Delete**, then click **Yes** to confirm.

# Scheduling notifications

To maintain a watch on your environment, you can schedule the appliance to notify administrators through email when specified criteria are met. This activity is useful for watching system health and device properties.

You can add, edit, and delete notification schedules.

## Add notification schedules from the Reporting section

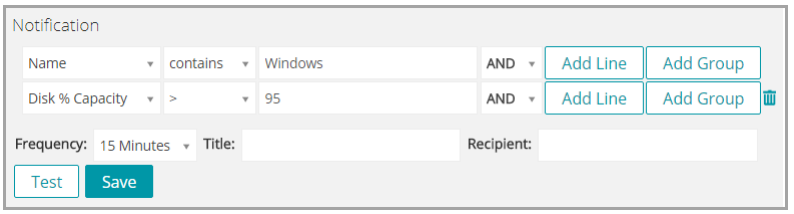
You can add notification schedules for devices, discovery scans, and assets from the *Reporting* section.

1. Go to the *Notification Schedules* list page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Reporting**, then click **Notifications**.

2. Select **Choose Action** and select one of the following:
   - **New > Device Notification**
   - **New > Discovery Notification**
   - **New > Asset Notification**
   - **New > Monitoring Alerts Notification**

   **The *Notification* panel appears.**




3. Select notification criteria. For example, to send a notification when Windows 7 devices have not connected to the appliance within 24 hours, specify the following:
   a. Specify the criteria required to find devices that have the Windows 7 operating system:

      `Operating System: Name | contains | Windows 7`

   b. With **AND** selected in the operator drop-down list, click **Add Line**.
   c. Specify the criteria required to find devices that have not connected to the appliance in the last 24 hours:

      `Device Identity Information: Last Sync Time | > | 24 hours`

4. Provide the following information below the notification criteria:

| Field | Description |
|---|---|
| **Title** | The information that you want to appear in the *Subject* line of the email. This also appears as the name of the notification on the *Notification Schedules* page. |
| **Recipient** | The email address or addresses of intended recipients. Email addresses must be fully qualified email addresses. To send email to multiple addresses, use commas to separate each address, or use email distribution lists. |
| **Frequency** | The interval at which the appliance runs the query to compare the selected criteria with items in inventory. If criteria are met, the notification is sent. |

5. **Optional**: To verify the criteria, click **Test**.

   **The list is refreshed to show items that match the specified criteria. Notifications are not sent during the test.**

6. Click **Save**.

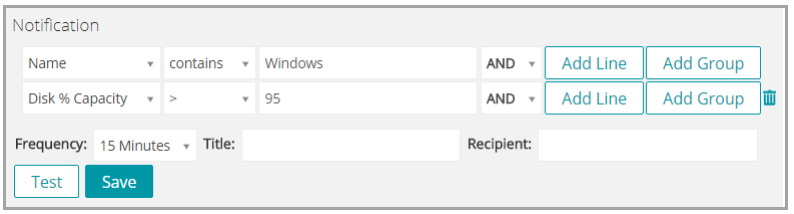
The notification is created and it appears on the *Notification Schedule* page. For information about scheduling the frequency of the notification, see Edit notification schedules.

# Add notification schedules from list pages

You can add notification schedules from list pages, such as the *Devices*, *Software*, *Software Catalog*, *Discovery*, or *Assets* page.

1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
2. Go to a list page, such as the *Devices* list, and click the **Notification** tab above the list on the right.

   **The *Notification* panel appears.**




3. Select the criteria to use for the notification schedule.

   **See Example: Search for managed devices using Advanced Search criteria.**

4. Provide the following information below the notification criteria:

| Field | Description |
|---|---|
| **Title** | The information that you want to appear in the *Subject* line of the email. This title also appears as the name of the notification on the *Notification Schedules* page. |
| **Recipient** | The email address or addresses of intended recipients. Email addresses must be fully qualified email addresses. To send email to multiple addresses, use commas to separate each address, or use email distribution lists. |
| **Frequency** | The interval at which the appliance runs the query to compare the selected criteria with items in inventory. If criteria are met, the notification is sent. |

5. **Optional**: To verify the criteria, click **Test**.

   **The list is refreshed to show items that match the specified criteria. Notifications are not sent during the test.**

6. Click **Save**.

The notification is created and it appears on the *Notification Schedules* page. Notifications are enabled by default. To disable or add a description to the notification, see Edit notification schedules.

# Edit notification schedules

You can enable, disable, change the frequency of, or modify notification schedules as needed.

1. Go to the *Notification Schedules* list page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Reporting**, then click **Notifications**.
   c. Click the name of a notification.
2. Modify the properties as needed:

| Field | Description |
|---|---|
| **Enabled** | Whether the notification is active or inactive. Select **Enabled** to permit the appliance to run the query and send the appropriate notifications at the selected frequency. Select **Disabled** to prevent the appliance from running the query and sending notifications. |
| **Name** | The information that you want to appear in the *Subject* line of the email. When you create notifications on the *Notification* panel, you enter this information in the *Title* field. |
| **Recipients** | The email address or addresses of intended recipients. Email addresses must be fully qualified email addresses. To send email to multiple addresses, use commas to separate each address, or use email distribution lists. |
| **Description** | Any additional information you want to provide. |
| **Frequency** | The interval at which the appliance runs the query to compare the selected criteria with items in inventory. If criteria are met, the notification is sent. |

3. **Optional**: To edit the report using the wizard, select **click here** next to *To re-edit the Notification using the original editor* above the **Save** button.
4. **Optional**: To change the SQL criteria that triggers the alert, click the check box labeled *To edit the Notification using this editor* above the **Save** button.

   **If you edit the SQL query, make sure to use the following `as` statements:**

   ```
   MACHINE.NAME AS SYSTEM_NAME
   ```

   ```
   MACHINE.ID as TOPIC_ID
   ```

   For example:

   ```
   SELECT MACHINE.NAME AS SYSTEM_NAME, SYSTEM_DESCRIPTION, MACHINE.IP,
   MACHINE.MAC, MACHINE.ID as TOPIC_ID FROM MACHINE WHERE ((SYSTEM_DESCRIPTION =
   'Test Computer'))
   ```

5. Click **Save**.

# Delete notification schedules

When you delete notification schedules, both the notification criteria and the schedule settings are removed from the appliance.

Notification schedules can be deleted any time as needed.

1. Go to the *Notification Schedules* list page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Reporting**, then click **Notifications**.
2. Select the check box next to one or more notification schedules.
3. Select **Choose Action** > **Delete**, then click **Yes** to confirm.

# Monitoring servers

The appliance offers you a module with which you can perform basic performance monitoring for your servers in inventory.

### About server monitoring

The appliance monitoring feature targets server-class operating systems, and provides default monitoring profiles that define criteria for performance alerts for each operating system. You can define additional, custom profiles that point to alternative event logs or OS level logs, with similar or different criteria.

**NOTE:** Server monitoring is not supported for Raspberry Pi devices running Raspbian Linux OS.

For details on OS versions supported for server monitoring, see the **Technical Specifications** guides.

**NOTE:** For Agent-based monitoring to work on an RHEL device running Security-Enhanced Linux (SELinux), SELinux must be either turned off or switched to "permissive mode." You can change the SELinux mode by modifying the file `/etc/selinux/config` and rebooting the device. For further information about enabling or disabling SELinux on Red Hat Enterprise Linux, go to https://access.redhat.com/documentation/en-US/Red_Hat_Enterprise_Linux/6/html/Security-Enhanced_Linux/sect-Security-Enhanced_Linux-Working_with_SELinux-Enabling_and_Disabling_SELinux.html.

**Table 32. Monitoring interface components under the Monitoring tab in the appliance navigation bar**

| Section | Description |
|---|---|
| **Devices** | For each monitored device, displays most critical alert, alert count, bound profile count, bound Maintenance Window count, and link to detail page to edit configuration settings for the device. This section can also display time alert created and modified, IP address of the monitored device, and whether Configuration Change Alert is enabled. |
| **Alerts** | Displays alert level, alert summary, link to detail of alert, date and time of alert creation, most recent repeat time, repeat count, IP address, and status. |
| **Profiles** | Displays profile name, list of default profiles and added profiles, count of devices to which the profile is bound, and if the profile is automatically added to a device with a particular operating system type.<br>A profile is where the criteria for triggering an alert is configured. In the profile, the log path and file are defined, along with the search text to look for in the log, and what severity is assigned to the alert.<br>You can bind multiple profiles to a device if there are multiple logs you want to monitor. |
| **Maintenance Windows** | Displays Maintenance Window name, count of devices to which the Maintenance Window is bound, whether the Maintenance Window is automatically added to all devices, and link to detail page to edit schedule and OS default settings. This section can also display Maintenance Window description and time Maintenance Window created and modified. |

| Section | Description |
|---|---|
| **Log Enablement Packages** | Displays a base set of Windows Reliability and Performance Monitor (PerfMon) templates and non-Windows open-source Perl scripts, so that you can extend your monitoring capability, and identify system and application performance issues. |

### Monitoring profiles

With the default monitoring profiles and with profiles you can set up, your appliance can provide:

- Windows event log monitoring
- Non-Windows file system log monitoring
- Configuration change monitoring

In addition, you can use Log Enablement Packages (LEPs) to provide:

- Threshold monitoring
- Application monitoring

You can download your profiles for others to use, and can upload custom profiles that are developed and made available by others.

### Free or licensed server monitoring

The appliance comes with monitoring available for 5 servers with your standard license, and you can obtain a license to expand that number. To see how many servers your system is licensed to manage, click **About appliance** in the Page-level Help panel when you click **Need Help** in the top-right corner of the page. The line for *Management Capacity Usage* displays *Monitored Servers*, with the number of devices that currently have monitoring enabled compared to the total number of devices that could be monitored under the existing license.

### Working with the alerts

Alerts appear in the Administrator Console, where you can review and dismiss them after they have been dealt with. The appliance provides additional capabilities. Among other things, you can:

- Have certain alerts trigger email notifications.
- Create a Service Ticket directly from an alert.
- Have alert notifications sent to a mobile device that uses the KACE GO app.

The appliance has a number of functions that make working with alerts more efficient:

- **Alert consolidation (repeat counts)**: To prevent notification spam, the appliance analyzes the alerts for uniqueness, and uses repeat count for identical alerts to indicate the number of times the alert has been generated.
- **Alert storm mitigation**: To prevent too much repeated data from streaming in, the appliance limits the collection for any one device to 50 alerts in a single collection. The appliance then composes a generic alert indicating that there is abnormal activity that needs attention.
- **Grooming**: A user can dismiss (hide from view, but keep in the database) alerts, or delete alerts manually or automatically after a set number of days. However, the appliance automatically limits a device to storing 2000 alerts before the appliance begins deleting alerts from the database.

# Getting started with server monitoring

The appliance comes with monitoring available for a set number of servers. If a server is in inventory, you can enable monitoring for that device and have it start reporting alerts after the next inventory.

**NOTE:** Your product license agreement entitles you to manage a specified number of devices that are classified as Managed Computers, Non-Computer Devices, and Monitored Devices. If you enable monitoring on a device, the device is counted once as a Managed Computer and once as a Monitored Device.

# Enable monitoring for a device

You can enable monitoring on any eligible server device in your inventory, up to a total of 200 servers, as prescribed by your appliance license.

**Eligible devices have server-class operating systems. Non-computer devices and computers without server-class operating systems cannot be monitored.**

The appliance provides two methods for enabling monitoring.

- Enable monitoring for one or more servers from the Devices inventory list
- Enable monitoring for a server from its Device Detail page

When a server is enabled, an icon in the *Status* column on the *Device* page in the *Inventory* section indicates the enabled status, and whether monitoring is active or paused:

-  : Server monitoring is enabled and active on this Agent-managed device.
-  : Server monitoring is paused on this Agent-managed device.
-  : Server monitoring is enabled and active on this Agentless-managed device.
-  : Server monitoring is paused on this Agentless-managed device.

**Related topics**

Disable monitoring for one or more devices

Pause monitoring for a device

# Enable monitoring for one or more servers from the Devices inventory list

You can enable monitoring on a server, or on several servers, from the *Devices* inventory list.

1. Go to the *Devices* inventory page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Dashboard**.
2. Select the check box for each device on which you want to enable monitoring.
3. Select **Choose Action > Enable Monitoring**.

    **Information about the success or failure of the action appear at the top of the list, and the *Status* for the device changes to display a monitoring icon.**

Potential causes for failure to have monitoring enabled include the device's OS is not supported, or the type of device is not supported, or the monitoring license count has been exceeded.

4. **Optional**: On the left navigation bar, select **Monitoring > Devices**, then click the name of a device to make any changes to the monitoring setup for this device on its *Monitoring Detail* page.
   - **Pause or reactivate monitoring. See Pause monitoring for a device.**
   - **Enable monitoring of configuration changes. See Receive alerts when device configurations change.**
   - **Add a monitoring profile or change the profile. See Working with monitoring profiles.**
   - **Add any Maintenance Windows. See Schedule a Maintenance Window during which time alerts are not collected from a device.**

   **If you have enabled multiple devices, repeat as necessary.**

**Related topics**

Enable monitoring for a server from its Device Detail page

# Enable monitoring for a server from its Device Detail page

You can enable monitoring on an individual server from its Device Detail page.

1. Go to the *Device Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **Dashboard**.
   c. Click the name of a device.
2. Scroll down and click **Monitoring** under *Activities* to expand the section.

   If a device is not eligible for monitoring because it does not have a server-class operating system, the *Monitoring* section appears with the message, **Operating system is currently not supported by Monitoring**.
3. Click **Enable Monitoring** to start monitoring and also display details of the default monitoring setup for the device.

   **With monitoring enabled, the *Monitoring* section displays the name of the monitoring profile bound to the device by default. If a Maintenance Window has been defined as a default, its name appears as well. It also displays up to 10 recent alerts, in any.**
4. **Optional**: Click **Edit Monitoring Details** to make any changes to the monitoring setup for this device on its *Monitoring Detail* page.
   - **Pause or reactivate monitoring. See Pause monitoring for a device.**
   - **Enable monitoring of configuration changes. See Receive alerts when device configurations change.**
   - **Add a monitoring profile or change the profile. See Working with monitoring profiles.**
   - **Add any Maintenance Windows. See Schedule a Maintenance Window during which time alerts are not collected from a device.**

**Related topics**

Enable monitoring for a device

# Obtain a new license key to increase server monitoring capacity

To take advantage of expanded monitoring capabilities for up to 200 servers, you must obtain a new license key. You contact the Quest Sales team to obtain the key.

1. Go to the *How to Buy* page of the Quest website: https://quest.com/buy.
2. Contact Sales by one of the three methods presented on the *How to Buy* page:
   - **Call the toll-free number for your location.**
   - **Send an email to the address for your location.**
   - **Fill out the** *Contact Form* **and send it.**

     In the *Comments* field, include the information that you are a current appliance user and want to gain access to the server monitoring functionality.

Update the license key information in your appliance.

# Apply a new license key to increase server monitoring capacity

You can increase server monitoring capacity by applying a new license key.

You have obtained your new license key.

1. Go to the appliance *Settings*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Appliance Updates** to display the *Appliance Updates* page.
3. In the *License Information* section, enter your new license key, then click **Update**.
4. Click **Yes** in the *Confirm* dialog to reboot your system.

The full features are available to you after you sign back in to the appliance following the reboot.

# Working with monitoring profiles

Monitoring profiles describe the criteria for creating an alert, by identifying text to search for in the device's log and associating that text with a defined alert level.

The appliance provides a set of default profiles for log monitoring of devices with supported operating systems, and also for SNMP trap devices. Beyond that, you can modify existing monitoring profiles, create your own profiles, and upload profiles created by other users. In addition, you have access to standard Log Enablement Packages (LEPs) to enable application and threshold monitoring.

The available monitoring profiles are listed on the Monitoring *Profiles* page

**TIP:** To display only the log monitoring profiles, in the top-right corner, click **View By** > **Type** > **Log**. To display the monitoring profiles for SNMP trap devices, click **View By** > **Type** > **SNMP Trap**.

As an example, the default profile for creating alerts for Mac OS X devices indicates that `/var/log/system.log` is the log that the monitoring function scans, looking for text that would trigger an alert. The following table describes the default search text in the *Include Text* field and the associated alert levels.

| Text searched for in log | Alert level |
|---|---|
| `critical` | **Critical** |
| `error` | **Error** |
| `fatal` | **Error** |
| `fail` | **Error** |
| `appliance monitor alert` | **Error** |
| `warn` | **Warning** |
| `unavailable` | **Warning** |

You can add other alerts customized to your operational needs.

The default profiles cover the following supported operating systems:

- CentOS
- Debian
- FreeBSD
- Mac OS X
- Oracle Enterprise Linux
- Red Hat Enterprise Linux
- Solaris
- SUSE Linux
- Ubuntu
- Windows Server

For devices with Linux operating systems, there are several different log paths for MySQL and Apache logs, depending on the version of the OS. See Profile log paths for MySQL and Apache.

For Agentless devices that are monitored using the SNMP trap mechanism, you need to provide trap message formats and expressions to capture the specific trap elements. See Configure SNMP trap messages and alerting criteria.

In the *Log Enablement Packages* list page, Quest publishes a base set of Windows Reliability and Performance Monitor (PerfMon) templates and non-Windows open-source Perl scripts, so that users can extend their monitoring capability and identify system and application performance issues. These templates and scripts are available so that users do not have to create them from scratch. Monitoring on the appliance works without these additional templates and scripts, but the profiles that are created from the templates and scripts are helpful if you want to do performance threshold monitoring.

In addition, for convenience, there is a default profile that can be used if you download optional Windows Reliability and Performance Monitor (PerfMon) templates to managed Windows Server 2003 devices. See Set up a Windows Server 2003 device with an ITNinja monitoring Log Enablement Package (LEP).

# Edit a profile

You can change, add, or remove alert criteria and log paths for any existing profile.

If you want to use an existing profile as a starting point for creating a profile, see Create a new profile using a default profile as a template.

To identify events that you want raised as alerts, use strings or regular expressions in *Include Text* to specify the appropriate message content. For instance, if you enter the string, Physical memory, an alert is raised for every message with that exact string.

To cover multiple possibilities, you can use a regular expression. For example, if you want alerts for any drive mount point that has drive errors, in the form, “Drive /dev/[any drive mount point] has drive errors”, you can use Drive /dev/[a-z]{1,} has drive errors in *Include Text*. Alerts are raised for any messages that contain "Drive /dev/" followed by any word of any length containing the characters a-z, followed by "has drive errors".

You can exclude specific events from being raised as alerts if you find them unnecessary or distracting. To filter the alerts you do not want to receive, you use *Exclude Text* to indicate the content that identifies an unwanted alert. You can use *Exclude Text* to filter whole categories of alerts, or use *Exclude Text* in conjunction with *Include Text* to refine a subset of an alert category. See Examples of Include Text and Exclude Text for monitoring profiles.

1. Go to the *Profiles* list page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Monitoring**, then click **Profiles**.
2. Select the check box for the existing profile that you want to edit, and select **Choose Action > Edit** to display the *Profile Detail* page.
3. **Optional**: Change or modify the *Name* and *Description* of the profile to indicate the edits.

    **NOTE:** If you are editing one of the default profiles, you cannot make any change to the *Add Automatically To* field.
4. Make changes to the *Criteria* settings, according to your needs.
    - **Change** *Include Filter* **(SNMP traps only) or** *Include Text* **(all other monitoring profiles).**
        1. On the line with the include search text (or filter for SNMP traps) you want to change, click the **Edit** button: .
        2. Type the new search text or filter.
    - **Optional. Change** *Exclude Filter* **(SNMP traps only) or** *Exclude Text* **(all other monitoring profiles).**
        1. On the line with the text (or filter for SNMP traps) you want to change in order to exclude certain alerts, click the **Edit** button: .
        2. Type the new exclude text or filter.
    - **If the provided search text is case sensitive, select Yes in the** *Case-sensitive* **drop-down list.**
    - **SNMP traps only. Create a Service Desk ticket automatically each time the appliance receives a specific SNMP alert.**
        - On the line containing an SNMP include and exclude filter (as configured), in the *Create Ticket* column, click **Select Queue**, and select a ticket queue that you want to use to create a Service Desk ticket. The appliance will create a Service Desk ticket in the specified ticket queue when it

receives an alert resulting from the specific include filter. The device associated with the alert will appear selected in the Service Desk ticket. The name and summary of the event that triggered the SNMP alert will appear in the ticket details. For more information about Service Desk tickets, see Managing Service Desk tickets, processes, and reports.

- **Change the alert *Level*.**

  1. On the line with the alert level you want to change, click the **Edit** button: .
  2. In the *Level* drop-down list, select the level from among the five choices: **Critical**, **Error**, **Warning**, **Info**, and **Recovered**.

- **Add an alert Criteria.**

  1. On the *Criteria* category header, click the **Add** button: .
  2. Set the level, include text, exclude text (optional), and case sensitivity.

5. Click **Save** at the bottom of the page.

**NOTE:** You can return a default profile to factory settings for its operating system by using the **Reset to Factory Settings** button at the bottom of the page.

**Related topics**

Filter alerts using the Include Text and Exclude Text capability from the Profile Details page

Examples of Include Text and Exclude Text for monitoring profiles

# Configure SNMP trap messages and alerting criteria

You can configure SNMP trap messages and the alerting criteria using the Profiles page.

- Enable SNMP trap monitoring on the appliance. For more information, see Configure security settings for the appliance
- Enable monitoring on your SNMP devices. For more information, see Enable monitoring for one or more devices

SNMP (Simple Network Management Protocol) is a protocol for monitoring managed devices on a network. This protocol is supported by Dell Open Manage and many third-party products. When you enable this feature on the appliance, and the related devices are also enabled for monitoring, the appliance can receive SNMP traps from the monitored Agentless devices using SNMP connections, such as printers, projectors, and routers.

SNMP traps are messages initiated by network devices and sent to the trap receiver on the appliance. For example, a router can send a message when its power supply fails. Or, a printer initiates a message when it runs out of paper. The appliance receives these traps and generates alerts when certain pre-defined thresholds are reached.

You can configure SNMP trap messages and the alerting criteria using the *Profile Detail* page.

You can include or exclude certain events from being detected, as needed.

1. Go to the *Profiles* list page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Monitoring**, then click **Profiles**.

2. Complete one of the following steps.
   - To create a new SNMP trap profile, select **Choose Action > New> SNMP Trap Profile**.
   - To edit an existing SNMP trap profile, select it in the list, and **Choose Action > Edit**.
   - To duplicate an existing SNMP trap profile, select it in the list, and **Choose Action > Duplicate and Edit**.

   **The *Profile Detail* page appears.**
3. **Optional**: Change or modify the *Name* and *Description* of the profile to indicate the edits.

   **NOTE:** If you are editing one of the default profiles, you cannot make any change to the *Add Automatically To* field.
4. Make changes to the *Trap Message Formats* settings, according to your needs.

   **For example:** `%Td (%Tn => %To) %Vz`

   **You can use the following elements in your SNMP trap message:**

| Element | Description |
|---|---|
| `%Aa` | The agent address. |
| `%Ah` | The agent host name. |
| `%d` | Local day. |
| `%m` | Local month. |
| `%y` | Local year. |
| `%h` | Local hour. |
| `%i` | Local minute. |
| `%s` | Local second. |
| `%u` | Unix timestamp. |
| `%Td` | Trap description. |
| `%Tm` | Trap MIB (management information base). |
| `%Tn` | Trap name. |
| `%To` | Trap OID (object ID). |
| `%Tt` | Trap type (0-5 Generic; 6 - Enterprise). |
| `%Tv` | Trap version (Inform, Trap v1, v2, or v3). |
| `%Vd#` | Variable binding description (where '#' is a number representing the element's position in the sequence). |

| Element | Description |
|---|---|
| %Vn# | Variable binding name (where '#' is a number representing the element's position in the sequence). |
| %Vo# | Variable binding OID (where '#' is a number representing the element's position in the sequence). |
| %Vt# | Variable binding type (where '#' is a number representing the element's position in the sequence). |
| %Vv# | Variable binding value (where '#' is a number representing the element's position in the sequence). |
| %Vz | Shows all variable bindings (Name: Value, Name: Value, Name: Value). If a Name is missing (due to a missing MIB file), the OID is displayed instead. |

5. Specify one or more alert levels, as needed.

   **The following alert levels are available: Critical, Error, Warning, Info, and Recovered.**

   - To add an alert level, under *Criteria*, click + to add a new alert level.
   - To edit an existing alert level, in the row containing the alart level, click .

6. For each level, specify its Include and/or Exclude expressions, and also indicate if the expressions are case-sensitive. These expressions allow you to include or exclude certain events from being detected.

   **The syntax for Include and Exclude expressions is as follows:**

   **<Field_Type> {TRAP_OID|TRAP_NAME|TRAP_DESCRIPTION|TRAP_TYPE|TRAP_MIB|VARBIND} {=|!=|>|<|>=|<=} <Field_Value> [<AND|OR> <Condition_A>] [<AND|OR> <Condition_B>] ...**

   **For example:**

   - TRAP_OID = ".1.3.6.1.4.1.8072.2.3.2.1": An alert is generated when the trap OID contains ".1.3.6.1.4.1.8072.2.3.2.1".
   - TRAP_NAME = "acctngFileFull" AND VARBIND = "acctngFileName|ABC": An alert is generated when the trap name contains "acctngFileFull" and if one of the trap's variable bindings is "acctngFileName" with a value of "ABC".

7. Click **Save** at the bottom of the page.

**NOTE:** You can return a default profile to factory settings for its operating system by using the **Reset to Factory Settings** button at the bottom of the page.

# Create a new profile using a default profile as a template

You can copy a default or existing monitoring profile and edit the copy to create a new profile.

You are not limited to one profile for each device. You can create additional profiles that generate different alerts and bind the profiles to devices that already have one or more profiles associated with them.

1. Go to the *Profiles* list page:
   a. Log in to the appliance Administrator Console, https://**appliance_hostname**/admin. Or, if the *Show organization menu in admin header* option is enabled in the appliance General

Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Monitoring**, then click **Profiles**.

2. Select the check box for the existing profile that you want to start with as a template, and select **Choose Action** > **Duplicate and Edit** to display the *Profile Detail* page.
3. Rename the profile and modify its description.
4. **Optional**: Change or modify the *Name* and *Description* of the profile to indicate the edits.

   **NOTE:** If you are editing one of the default profiles, you cannot make any change to the *Add Automatically To* field.

5. For the log path, use the path appropriate for the operating system or application.

   The path can be the basic one for the operating system, as shown in the table.

| Operating system | Log path |
|---|---|
| CentOS | `/var/log/messages` |
| Debian | `/var/log/syslog` |
| Fedora | `/var/log/messages` |
| FreeBSD | `/var/log/messages` |
| Mac OS X | `/var/log/system.log` |
| openSUSE | `/var/log/messages` |
| Oracle Enterprise Linux | `/var/log/messages` |
| Red Hat Enterprise Linux | `/var/log/messages` |
| Solaris | `/var/adm/messages` |
| SUSE Enterprise Linux | `/var/log/messages` |
| Ubuntu | `/var/log/syslog` |
| Windows | `application` for Windows Application<br>**NOTE:** You must use the *Full Name* of the event log, as it appears in the properties for that log. To ensure you have the correct Full Name, open the *Event Viewer*. Expand *Windows Logs*, right-click the event log and select **Properties**. Use the version of the Full Name that appears in the field in the *Log Properties* dialog.<br>`Microsoft-Windows-TaskScheduler/Operational` for Windows Task Scheduler Operational |

Alternatively, you can enter a path that defines a log that contains data beyond the basic event logs. For instance, if you had an application on SUSE that sends its data to a specific log such as `/var/`

`log/`**<myapplog>,** you can use that path in a new profile, and define the search text and alert level as described in this procedure.

For devices with Linux operating systems, there are a number of different log paths for MySQL and Apache logs, depending on the version of the OS. See Profile log paths for MySQL and Apache.

**NOTE:** Only one log path can be defined in a profile. You must create multiple profiles for multiple logs.

6. Make changes to the *Criteria* settings, according to your needs.
   - **Change** *Include Text***.**
     1. On the line with the include search text you want to change, click the **Edit** button: .
     2. Type the new search text, and, if necessary, select **Yes** in the *Case-sensitive* drop-down list.
     3. Click **Save** at the right of the row.
   - **Optional: Change** *Exclude Text***.**
     1. On the line with the text you want to change in order to exclude certain alerts, click the **Edit** button: .
     2. Type the new exclude text, and, if necessary, select **Yes** in the *Case-sensitive* drop-down list.
     3. Click **Save** at the right of the row.
   - **Change alert** *Level***.**
     1. On the line with the alert level you want to change, click the **Edit** button: .
     2. In the *Level* drop-down list, select the level from among the five choices: **Critical**, **Error**, **Warning**, **Info**, and **Recovered**.
     3. Click **Save** at the right of the row.
   - **Add an alert.**
     1. On the *Criteria* category header, click the **Add** button: .
     2. Set the level, search text, and case sensitivity, and click **Save** at the right of the row
     3. Repeat for as many alerts as you want to add.
     4. **Optional**: Reorder the new alert criteria using the **Drag** button: .
7. Click **Save** at the bottom of the page.

The profile is available to be assigned to a device on that device's *Monitoring Detail* page.

# Profile log paths for MySQL and Apache

For devices with Linux operating systems, there are a number of different log paths for MySQL and Apache logs, depending on the version of the OS.

**NOTE:** Only one log path can be defined in a profile. You must create multiple profiles for multiple logs.

For up-to-date tables of the log paths for MySQL and Apache logs, go to http://www.itninja.com/blog/view/mysqland-apache-profile-log-path-locations.

# Upload a profile that was created by another user

If another user has made a custom profile available for use by others, you can upload it into your appliance.

You have access to an XML profile file created by another user.

1. Go to the *Profiles* list page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Monitoring**, then click **Profiles**.
2. Select **Choose Action** > **Upload Profiles** to display the *Upload Profiles* dialog.
3. Click **Choose File** to navigate to the profile you want to upload, choose it, then click **Upload**.

    **You can select more than one profile.**

The profile or profiles appear at the bottom of the *Profiles* list.

You can edit the new profile, if needed. See Edit a profile.

# Download a profile so that it can be used by others

You can download a custom profile to make it available for use by other users.

1. Go to the *Profiles* list page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Monitoring**, then click **Profiles**.
2. Select the check box for the profile or profiles that you want to download, and select **Choose Action** > **Download Profiles** to send the profile or profiles to your *Downloads* folder.

    **The profile XML file name is derived from the profile name, as seen on the Profile Detail page, with a UNIX timestamp appended.**

Distribute the profile.

# Bind an additional profile to a device

When you enable server monitoring on a device, the appliance assigns, or binds, to the device the default profile and the default log path that is appropriate for the device's operating system. You can add other profiles as needed, from custom profiles you create or obtain from other sources, like ITNinja.

1. Go to the *Monitoring Detail* page:
    a. On the left navigation bar, click **Monitoring**, then click **Devices**.
    b. Click the name of a device to display the *Monitoring Detail* page.
2. Click in the *Profiles* field to see a drop-down list of defined profiles, and select the one you want to apply.
3. Click **Save**.

# Define nonstandard log date format

For any given operating system, the appliance knows and uses the standard format for log date and time when scanning the log file. However, if you use an uncommon format in your logs, you must define that format so that server monitoring can properly parse the log.

**NOTE:** In most cases, this field should be left blank.

**NOTE:** Log Date Format is not pertinent to Windows event logs.

1. Go to the *Profiles* list page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Monitoring**, then click **Profiles**.
2. Select the check box for the existing profile that you want to edit, and select **Choose Action > Edit** to display the *Profile Detail* page.
3. Type the nonstandard log date format in to *Log Date Format*.

    **The supported format characters, and examples, can be viewed if you click next to *Log Date Format*.**
4. Click **Save** at the bottom of the page.

# Configuring application and threshold monitoring with Log Enablement Packages

Performance threshold monitoring and monitoring for applications such as Exchange, Internet Information Services (IIS), and so on, require packages, called Log Enablement Packages (LEPs), that you can access from the *Log Enablement Packages* list page.

In the *Log Enablement Packages* list page, Quest publishes a base set of Windows Reliability and Performance Monitor (PerfMon) templates and non-Windows open-source Perl scripts, so that users can extend their monitoring capability and identify system and application performance issues. These templates and scripts are available so that users do not have to create them from scratch. Monitoring on the appliance works without these additional templates and scripts, but the profiles that are created from the templates and scripts are helpful if you want to do performance threshold monitoring.

### Windows PerfMon template

In the appliance, a default Windows OS and Application LEP Profile has been predefined in the appliance that contains the specific event log and generic criteria that Microsoft uses for PerfMon triggered events. The base PerfMon templates available for Microsoft Server 2008 through LEPs on the Log Enablement Packages list page are for system (CPU, memory, disk), Exchange, SQL, IIS, Active Directory, and Hyper-V.

**NOTE:** PerfMon templates for Microsoft Server 2003 are available from ITNinja.

### Non-Windows Perl scripts

Each package is an open-source Perl script that runs periodically using the built-in operating system scheduler: cron, fcron, and so on. When the Perl script is executed, the script runs a series of commands to determine the use of CPU, memory, and local volumes. An alert is written to the system log (syslog) file if the utilization exceeds the threshold defined in the package. Because the scripts are configured to log to syslog and contain a prefix message for each event, the appliance has predefined the criteria in the syslog defaults for all non-Windows profiles for ease of configuration.

### Packages available through ITNinja

ITNinja is a product-agnostic IT collaborative community that serves as a destination for IT professionals to share with one another, and acts as a go-to resource for information on setup and deployment topics. You can browse and contribute to specific software title topics, and other topics, such as deployment, management, configuration, and troubleshooting. The server monitoring community is located at http://itninja.com/community/k1000-monitoring.

In ITNinja, you can find PerfMon templates beyond the standard ones available on the *Log Enablement Packages* list page. For instance, there are templates to configure monitoring for many Windows Server 2003 logs. The Log Enablement Package Install feature in the appliance does not support Windows Server 2003. For those servers, you install their LEP by using PowerShell, with a method documented in ITNinja.

Appliance monitoring users who are members of the ITNinja community can contribute their own templates and scripts, to expand the library of available LEPs. Similar to Windows Server 2003 packages, because these LEPs are not covered by the install process available to the standard packages, they must be installed by using one the methods documented in ITNinja.

## Install one or more LEPs on monitored devices

You can install Log Enablement Packages on Windows devices and non-Windows devices directly from the appliance.

1. Go to the *Log Enablement Packages* list page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Monitoring**, then click **Log Enablement Packages**.
2. Select the check box for the package or packages that you want to install on devices, and select **Choose Action** > **Add to Devices** to display the *Log Enablement Packages Install* page.

    **If you are choosing multiple packages, you can choose both Windows and non-Windows packages to install. In this case, the** *Log Enablement Packages Install* **page displays a separate section for Windows packages and a separate section for non-Windows packages. If all the packages you select are for one type, then only the section for that particular type appears.**
3. Select the devices to which to add the package or packages.
    a. Click in the *Devices* text box to display a list of devices within inventory that are compatible with the packages listed in *Selected Packages* to the right.
    b. Select the device or devices you want from the list.
4. **Optional**: For Windows packages, clear the check box for *Add Windows OS and Application LEP Profile* if that profile is already bound to the device or devices and you do not want to reinstall it.
5. Determine how you want the installation to go if one of the packages is already installed on a device.
    - **Leave** *Replace it* **selected if you want the current package reinstalled over an existing version.**
    - **Select** *Skip it* **if you want to retain the package that might be currently installed on the device. For instance, you might have made edits to the package earlier and do not want to lose those changes.**
6. Click **Install**.
7. **Optional**: View the progress of the installation.
    a. Click **Devices** in the **Monitoring** section of the left navigation bar, and select the name of the monitored device to display its *Monitoring Detail* page.

        **The LEP Installation Log section appears at the bottom of the page, displaying a summary of the installation process for this particular device.**
    b. **Optional**: Click **See all LEP Installation Logs for this device** to see more detail.

## Set up a Windows Server 2003 device with an ITNinja monitoring Log Enablement Package (LEP)

Windows Server 2003 Log Enablement Packages do not appear in the appliance Log Enablement Packages list page, and the appliance LEP installation function does not support Windows Server 2003. However, you can

obtain packages from ITNinja with which to monitor Windows 2003 devices, and that entails a different setup process.

Add the Windows Server 2003 device to inventory in the appliance, managed either through an Agent or through Agentless management. See About managing devices.

The process entails action on the server device that is to be monitored, and action in the appliance. On the server device, you download a Log Enablement Package from ITNinja, and start PerfMon. In the appliance, you enable monitoring for the device, define the profile from the monitoring package, and bind the profile to the device.

**NOTE:** Following this procedure installs one package on one device. If you want to install multiple packages with one procedure, you can find instructions on ITNinja for using PowerShell scripts to do so. See http://itninja.com/community/k1000-monitoring.

1. Acquire the appropriate monitoring LEP from ITNinja.
    a. Go to the ITNinja Monitoring community page: http://itninja.com/community/k1000-monitoring.
    b. From the **Downloads** tab, find the package for the Performance Category with the Performance Counters you want to probe.

        **You can use Search to narrow your search.**

    c. Click **Download** to download the HTM file for the package.
    d. Copy the HTM file **<Performance_Category>**`_Alerts.htm` to the device you want to monitor.
2. On the Windows Server 2003 device you want to monitor, start the Performance Monitor and expand the **Performance Logs and Alerts** folder.
3. Under **Performance Logs and Alerts**, right-click **Alerts** and select **New Alerts Settings From . . .**.
4. In the *Open* dialog, browse to the location of the package, select it, and click **Open**.
5. In the *New Alert Settings* dialog, confirm the package name and click **OK** to display the property page for the package.
6. Accept or edit the LEP properties:
    - **Leave the default settings, and click OK to leave the page.**
    - **Optional: On the General tab of the property page, add or remove counters, and revise threshold values, if you want, then click OK. See Edit the monitoring Log Enablement Package (LEP) for a Windows Server 2003 device.**
7. In the Performance window, right-click on the package name and select **Start** to start the monitoring.

    **With the device taken care of, you move to the appliance to enable the monitoring feature, create a profile, and bind the profile to the device.**
8. On the appliance, enable monitoring for this device.
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Inventory**, then click **Dashboard**.
    c. Click the name of the device to display its *Device Detail* page.
    d. Scroll down and click **Monitoring** under *Activities* to expand the section.
    e. Click **Enable Monitoring** to start monitoring and also display details of the default monitoring setup for the device.

        **With monitoring enabled, the *Monitoring* section displays the name of the monitoring profile bound to the device by default. If a Maintenance Window has been defined as a default, its name appears too.**
9. Create the monitoring package profile on the *Profile Detail* page.
    a. On the left navigation bar, click **Monitoring**, then click **Profiles**.
    b. On the *Profiles* list page, select the check box next to **Windows ITNinja Plug-In Template** and select **Choose Action > Duplicate and Edit** to display the *Profile Detail* page.

c. Edit the name and type a description for the monitoring profile.
d. Use the Windows Server 2003 *Log Path*, Application.
e. Leave the *Log Date Format* empty.
f. **Optional**: Click **Edit** (), and in the drop-down menu under *Level*, select a level if you want to use something other than **Error**.
g. Click **Save** at the end of the criteria line, then click **Save** at the bottom of the page.

10. Add this new profile to the device.
    a. On the left navigation bar, click **Monitoring**, then click **Devices**.
    b. Click the name of the device to display its *Monitoring Detail* page.
    c. Click in the *Profiles* field to display a drop-down list of all available profiles, and click the profile you created.
    d. Click **Save**.

**The profile is bound to the device.**

# Edit the monitoring Log Enablement Package (LEP) for a Windows Server 2008 or higher device

You can add, remove, and configure performance counters in a monitoring LEP installed on a server.

The Log Enablement Package has been installed on the device. See Install one or more LEPs on monitored devices.

1. On the device you want to monitor, start the Performance Monitor, expand the **Data Collector Set** folder, then expand the **User Defined** folder.
2. Select the LEP-defined Data Collector Set.
3. **Optional**: If the package is running, right-click the set name and select **Stop**.
4. In the right pane, right-click the DataCollector and select **Properties** to display the *Properties* dialog.
5. Use the tabs on the *Properties* dialog to edit the package:

| Option | Description |
|---|---|
| **Alerts** | The **Alerts** tab enables you to edit the threshold attribute and interval attribute of a performance counter. You can also add and remove counters using this tab.<br>To configure the performance counter:<br>a. Select the counter in *Performance counters*.<br>b. Edit the alert trigger using the *Alert when* drop-down list and the *Limit* field.<br>c. Edit the collection interval using the *Sample interval* and *Units* drop-down menus.<br>d. Click **OK** to save the changes.<br>To add a performance counter to this LEP:<br>a. Click **Add** to display the add counters dialog.<br>Performance counters for applications installed locally appear in *Available counters*. You can also select objects and counters from a remote system if you use the list in *Select counters from computer* or use **Browse**.<br>b. In *Available counters*, select the counter or counters you want to add, and click **Add >>**. |

| Option | Description |
|---|---|
| | c. Click **OK** to return to the *Properties* dialog.<br>To remove a performance counter from this LEP:<br>a. Select the counter in *Performance counters*.<br>b. Click **Remove**.<br>c. Click **OK** to save the changes. |
| **Alert Action** | The objective of the package is to have events logged in the event log so that the monitoring capability of the appliance can pick up an alert, so the check box for *Log an entry in the application event log* should remain selected. |
| **Alert Task** | If you want to set a task to run when the alert is triggered, you define that task on this tab. |

6. Click **OK** at the bottom of the *Properties* dialog to return to Performance Monitor.
7. In the **User Defined** folder, right-click the package and select **Start** to start the monitoring.

# Edit the monitoring Log Enablement Package (LEP) for a Windows Server 2003 device

You can add, remove, and configure performance counters in a monitoring LEP installed on a server.

The Log Enablement Package has been installed on the device. See Install one or more LEPs on monitored devices.

1. On the device you want to monitor, start the Performance Monitor, and expand the **Performance Logs and Alerts** folder.
2. Click **Alerts**, and in the details pane, right-click the LEP you want to edit.
3. **Optional**: If the package is running, select **Stop** after you right-click the LEP name.
4. Right-click the LEP name again, if necessary, and select **Properties** to display the *Properties* dialog.
5. Use the **General** tab on the *Properties* dialog to edit the package:
    a. Select a performance counter in *Counters* to display its current configuration.
    b. Edit the alert trigger using the *Alert when the value is* drop-down list and the *Limit* field.
    c. Edit the collection interval using the *Interval* and *Units* drop-down menus for *Sample data every*.
    d. Set account permissions in *Run as*.
    - By default, the package runs using the System account permission. To continue to use System account permission, leave `<Default>` as the entry in *Run as*.
    - Built-in groups have access to the following Performance Monitor features:

| Group | Capabilities |
|---|---|
| Members of the local Administrators group | All Performance Monitor features are available |
| Members of the Users group | • Can change the Performance Monitor display properties<br>• Can view log files in Performance Monitor<br>• Cannot create an Alert Setting |
| Members of the Performance Monitor Users group | • Can use all features available to the Users group<br>• Can view real-time logs in Performance Monitor and alter Performance Monitor display properties in real time<br>• Cannot create or modify Alert Settings |
| Members of the Performance Log user group | • Can use all features available to the Performance Monitor Users group<br>• Can create and modify Alert Settings after the group is assigned the log on as a batch user |

6. **Optional**: Add a performance counter to the LEP:
    a. On the *Properties* dialog, click **Add** to display the *Add Counters* dialog.

        **When** *Use local computer counter* **is selected, performance counters for applications installed locally appear in** *Select counters from list***. You can also select objects and counters from a remote system if you use the list in** *Select counters from computer***.**

    b. In *Select counters from computer*, select the counter or counters you want to add, and click **Add**.
    c. Click **OK** to return to the *Properties* dialog.
7. **Optional**: Remove a performance counter from the LEP:
    a. On the Properties dialog, select the counter in *Counters*.
    b. Click **Remove**.
    c. Click **OK** to save the changes.
8. Click **OK** at the bottom of the *Properties* dialog to return to Performance Monitor.
9. In the details pane, right-click the LEP and select **Start** to start the monitoring.

# Managing monitoring for devices

After a device has monitoring enabled, you can configure how and when monitoring takes place, and manage monitoring on a per-device basis.

# Pause monitoring for a device

You can pause monitoring if you want to prevent the monitoring function from producing alerts while you work on, or make changes to, a device.

**NOTE:** If you want to pause monitoring on a set schedule to accommodate regular maintenance tasks, you can set Maintenance Window schedules. See Schedule a Maintenance Window during which time alerts are not collected from a device.

If you want to pause or resume multiple devices at the same time, see Pause or resume monitoring for multiple devices.

1. Go to the *Monitoring Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Monitoring**, then click **Devices**.
    c. Click the device in the *Device* column to display its *Monitoring Detail* page.
2. Select the option button for *Paused* and click **Save**.

An icon in the *Status* column on the *Device* page in the *Inventory* section indicates the paused status:

-  : Server monitoring is paused on this Agent-managed device.
-  : Server monitoring is paused on this Agentless-managed device.

# Pause or resume monitoring for multiple devices

You can pause monitoring for multiple devices at the same time. You can resume monitoring for multiple devices as well.

1. Go to the *Monitored Devices* list page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Monitoring**, then click **Devices**.
2. Select the check boxes for all the devices you want to pause or resume.
3. Select **Choose Action** > **Pause Monitoring** or **Resume Monitoring**.

    **The entry in the** *Monitoring* **column for the devices changes to indicate the new state,** *Paused* **or** *Active***.**

# Set the polling interval and any automatic dismissal or deletion of alerts

You can configure some general monitoring settings for how often the appliance polls the logs for alerts. In addition, you can configure the appliance to dismiss alerts automatically after a number of days you set, and delete alerts too.

Dismissing an alert removes it from view on the *Alerts* list page and the dashboard widgets. Deleting an alert removes it from the database. You can recover dismissed alerts, but not deleted alerts.

1. Go to the *Monitoring Settings* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General

Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Settings**, then click **Monitoring Settings**.

2. Set the polling interval in minutes.

   **The minimum interval is 10 minutes.**

3. **Optional**: Set the appliance to dismiss alerts after a prescribed number of days.
   a. Select *Dismiss alerts automatically*.
   b. Type the value for the number of days.
4. **Optional**: Set the appliance to delete alerts after a prescribed number of days.
   a. Select *Delete alerts automatically*.
   b. Type the value for the number of days.
5. Click **Save**.

**Related topics**

Dismiss an alert

Delete alerts

Retrieve and review alerts that have been dismissed from the alerts list

# Disable ping probe

Ping probes are enabled by default when you enable monitoring for any device. However, in certain instances ping probes can engender an alert storm, so the appliance makes it possible to disable ping probes.

Ping sends Internet Control Message Protocol (ICMP) echo request packets to its target. Some firewalls block ICMP packets, so it is possible, because of the frequency of the ping probes, to have an enormous number of alerts generated from the probes being rejected. In these cases, disabling ping probes unclutters the monitoring results.

1. Go to the *Monitoring Settings* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **Monitoring Settings** on the *Control Panel*.
2. Clear *Enable ping probe*.
3. Click **Save**.

# Receive alerts when device configurations change

You can set monitoring to create an alert when the configuration of a monitored device is changed.

**When you enable this feature, each time a device configuration change is detected, an alert is generated. You can specify which types of changes you want to detect for the device assets, by selecting them in the** *Device* **dialog box, accessible from the** *Asset History Configuration* **page.**

Examples of configuration change include the addition of a disk, a new logical drive, an increase or decrease of memory, a partition change, and so on. For complete information about the *Asset History Configuration* page, and how to select configuration changes, see Configure asset history subscriptions.

1. Go to the *Monitoring Detail* page:

a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
b. On the left navigation bar, click **Monitoring**, then click **Devices**.
c. Click the name of a device.

2. Select the *Enable Configuration Change Alert* check box.
3. Click **Save**.

# Schedule a Maintenance Window during which time alerts are not collected from a device

Using maintenance windows enables you to set aside certain time slots for performing server maintenance tasks without the monitoring function producing excessive alerts that might flood the system.

You are not limited to using one Maintenance Window for each monitored device. You can create a library of Maintenance Windows, and apply combinations of them to monitored devices depending on your needs.

1. Go to the *Maintenance Window Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Monitoring**, then click **Maintenance Windows**.
   c. Select **Choose Action** > **New**.
2. Provide the following information:

| Option | Description |
|---|---|
| **Name** | A name that identifies the Maintenance Window. The name appears on the *Maintenance Windows* list. |
| **Description** | Information that further identifies the purpose and subjects of the window. |
| **Add Automatically To** | • **None**: This Maintenance Window is not automatically added to a device when monitor is enabled on that device.<br>• **All**: This Maintenance Window is automatically added to a device when monitor is enabled on that device. |

3. In the *Schedule* section, specify the schedule settings:

| Option | Description |
|---|---|
| **Every day/specific day from HH:MM to HH:MM** | Start the window daily at a specified time and for a specific duration, or start on a designated day of the week at a specified time. |
| **Run on the nth of every month/specific month from HH:MM to HH:MM** | Run on the same day every month, or a specific month, at the specified time and duration. |

**NOTE:** The schedule uses the 24-hour clock.

4. Click **Save**.
5. Apply the Maintenance Window to a monitored device on its *Monitoring Detail* page:
    a. On the left navigation bar, click **Monitoring**, then click **Devices**.
    b. Click the name of a device to display the *Monitoring Detail* page.
    c. Click in the *Maintenance Windows* field to view a drop-down list of defined Maintenance Windows, and select the one you want to apply.
6. Click **Save**.

# Create and assign monitoring-specific roles

You can create user roles that regulate the ability to work with alerts and profiles.

For instance, you can create a role for a staff member who can react to alerts, and create Service Desk tickets from them, but who cannot add profiles to devices or set Maintenance Windows.

If the Organization component is enabled on your appliance, the permissions available to User Roles depends on the Organization Role assigned to the organization. See Managing Organization Roles and User Roles.

**NOTE:** You cannot edit the predefined Roles: Administrator, No Access, Read Only Administrator, and User.

1. Go to the *Role Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Settings**, then click **Roles**.
    c. Select **Choose Action > New** to display the *Role Detail* page.
2. In the *Name* field, provide a name, such as Monitoring Alert Attendant.
3. In the *Description* field, provide a brief description of the role, such as Used for support staff with responsibility for responding to alerts.

    **This description appears on the *Roles* list along with the name.**

4. Click the **Monitoring** link below Administrator Console  *Permissions* to display the permissions settings for server monitoring.
5. Set permissions according to the level of access you want to assign to the role:
    - **All Write**
    - **All Read**
    - **All Hide**
    - **Custom:**

You can combine WRITE, READ, or HIDE permission for the following monitoring pages

| Category | Page (include Detail page) | Permissions affect these actions |
|---|---|---|
| **Monitoring** | **Devices** | • Acknowledge (Dismiss) alerts<br>• Enable monitoring of configuration changes<br>• Pause or resume monitoring<br>• Add or remove profiles<br>• Add or remove Maintenance Windows<br>• Disable monitoring<br>• Export alerts |
| | **Alerts** | • Acknowledge (Dismiss) alerts<br>• Create Service Desk ticket<br>• Set notifications<br>• Retrieve alerts<br>• Delete alerts<br>• Export alerts |
| | **Profiles** | • Create profiles<br>• Edit profiles<br>• Delete profiles<br>• Remove profiles from all devices<br>• Upload and download profiles |
| | **Maintenance Windows** | • Create Maintenance Windows<br>• Edit Maintenance Windows<br>• Delete Maintenance Windows<br>• Remove Maintenance Windows from all devices<br>• Export Maintenance Windows |
| | **Monitoring LEP** | • Add to devices<br>• Export LEPs |

6. If applicable, assign the role the ability to enable monitoring on a device.

   **A user enables monitoring on the device's** *Device Detail* **page, so permission has to be set in the** *Inventory* **section.**

   a. Click the **Inventory** link below Administrator Console *Permissions* to display the permissions settings for inventory.

b. Set *Devices* to **WRITE**.

7. Click **Save**.
8. Assign the role to a user.
    a. On the left navigation bar, click **Settings**, then click **Users**.
    b. Select the check box for the user to whom you want to assign the role.
    c. Select **Choose Action** > **Apply Role** > **Name of role.**

# Disable monitoring for one or more devices

When you no longer want to monitor a device, you can disable the capability, after which the device no longer counts against your license limit.

You can disable monitoring for a device in three locations. Two of the locations you use for individual devices and one location you use for a group of devices.

- Disable monitoring from a device's *Device Detail* page:
    1. On the left navigation bar, click **Inventory**, then click **Dashboard**.
    2. Click the name of a device.
    3. Scroll down and click **Monitoring** under *Activities* to expand the section.
    4. Click **Disable Monitoring**.
    5. Confirm the action on the confirmation dialog.
- Disable monitoring from a device's *Monitoring Detail* page:
    1. On the left navigation bar, click **Monitoring**, then click **Devices**.
    2. Click the name of a device.
    3. Click **Disable Monitoring**.
    4. Confirm the action on the confirmation dialog.
- Disable monitoring for multiple devices from the *Devices* list.
    1. On the left navigation bar, click **Monitoring**, then click **Devices**.
    2. Select the check boxes preceding all the devices on which you want to disable monitoring.
    3. Select **Choose Action** > **Disable Monitoring**.
    4. Confirm the action on the confirmation dialog.

Disabling monitoring does not delete the device's alerts. On the *Monitoring Alerts* list page, for an alert relating to a disabled device, the *Device* column entry contains **Device deleted or no longer monitored**. If you re-enable monitoring for this device, however, the appliance treats the device as a newly monitored device. In this case, the earlier alerts from the device still appear as **Device deleted or no longer monitored**.

For information on deleting alerts, see Delete alerts.

# Enable monitoring for one or more devices

When you want to monitor a device, you can start monitoring it. Any devices that are enabled for monitoring count against your license limit.

**IMPORTANT: Enabling monitoring on SNMP-managed devices does not count against the license limit.**

You can enable monitoring for a device in three locations. Two of the locations you use for individual devices and one location you use for a group of devices.

- Enable monitoring from a device's *Device Detail* page:

1. On the left navigation bar, click **Inventory**, then click **Dashboard**.
2. Click the name of a device.
3. Scroll down and click **Monitoring** under *Activities* to expand the section.
4. Click **Enable Monitoring**.
5. Confirm the action on the confirmation dialog.

- Enable monitoring for multiple devices from the *Devices* list.
  1. On the left navigation bar, click **Inventory**, then click **Dashboard**.
  2. Select the check boxes preceding all the devices on which you want to enable monitoring.
  3. Select **Choose Action > Enable Monitoring**.
  4. Confirm the action on the confirmation dialog.

Enabling monitoring for a device allows the device to generate alerts when certain thresholds are met. If you re-enable monitoring for this device, the appliance treats the device as a newly monitored device. In this case, the previous device alerts appear as **Device deleted or no longer monitored**. For information on deleting alerts, see Delete alerts.

# Working with alerts

When server monitoring produces an alert, you have various responses available to you.

You can use the alert as a basis for a Service Desk ticket or an automated email notification. After dealing with the alert according to your procedures, you can dismiss it, or delete it entirely.

If you have added the monitoring widgets to your Dashboard, you can see at a glance the current top alerts, with links to the *Monitoring Alerts* list page and the *Monitored Devices* list page.

The following icons indicate alert level:

- : **Stopped**
- : **Error**
- : **Warning**
- : **Information**
- : **Done**

**Related topic**

About Dashboard widgets

# Add notification schedules from the Monitoring Alerts list page

You can add monitoring alert notification schedules for devices, alert levels, messages, and other alert information. These schedules enable the appliance to notify administrators through email or push notification to a KACE GO mobile device when specified criteria are met.

You have configured your email notification settings.

1. Go to the *Monitoring Alerts* list page in one of the following ways:
   - **If you have the** *Monitoring Alerts* **widget installed on your open** *Dashboard***, click Monitoring Alerts.**
   - **In the left navigation bar, select Monitoring > Alerts.**
2. Select the check box for the row that contains the alert message, then click **Notification**, to the right above the alerts list, to display the *Notification* panel.
3. Select notification criteria. For example, to send a notification when information alerts are generated, specify the following:

   ```
   Level | is | Information
   ```

4. Provide the following information below the notification criteria:

| Field | Description |
|---|---|
| **Title** | The information that you want to appear in the *Subject* line of the email. |
| **Email Recipient** | The email address or addresses of intended recipients. Email addresses must be fully qualified email addresses. To send email to multiple addresses, use commas to separate each address, or use email distribution lists. |
| **Frequency** | The interval at which the appliance runs the query to compare the selected criteria with items in inventory. If criteria are met, the notification is sent. |

5. **Optional**: Select the check box for *Send to KACE GO* if you want the alert to be pushed to a mobile device that has the KACE GO app.

   **Mobile device access must be enabled for this option to be available. See Configuring Mobile Device Access.**

6. **Optional**: To verify the criteria, click **Test**.

   **The list is refreshed to show items that match the specified criteria. Notifications are not sent during the test.**
7. Click **Save**.

The notification is created and it appears on the *Notification Schedule* page. For information about scheduling the frequency of the notification, see Edit notification schedules.

**Related topics**

About notifications

Scheduling notifications

# Create a Service Desk ticket from an alert

You can create a Service Desk ticket from a server monitoring alert, with information from the alert automatically populating fields in the ticket form.

1. Go to the *Monitoring Alerts* list in one of the following ways:
   - **If you have the** *Monitoring Alerts* **widget installed on your open** *Dashboard***, click Monitoring Alerts.**
   - **In the left navigation bar, select Monitoring > Alerts.**
2. Select the check box for the row that contains the alert message, then select **Choose Action > New Ticket**.
   - If you want to create a ticket based on a queue, if there are multiple ticket queues in the organization, select a queue from the **Ticket** drop-down list.
   - If you want to create a ticket based on a process template, select the process from the **Process** drop-down list.

   **The** *Title***,** *Summary***,** *Submitter***, and** *Device* **fields contain information from the alert.**
3. **Optional**: Change the *Title* and *Summary* to conform to your corporate procedures.
4. Provide the rest of the information needed to complete the form, then click **Save** to save the ticket and leave the *Ticket Detail* page, or **Apply Changes** to save the ticket and continue editing it.

| Option | Description |
|---|---|
| **Title** | (Required) A brief description of the issue. You can replace the monitoring-provided title with one of your choosing. |
| **Summary** | A more detailed description of the issue.<br>This field includes a full range of text editing options for formatting your content, such as buttons for bold text, hyperlinks, lists, or text color.<br>For example:<br>• To apply bold text to a text string, select it in the editor, and click B.<br>• To add images, click, and provide the URL to the image file, a local file path, or simply drop the image into the indicated area.<br>◦ You can also copy and paste screen shots directly into the text field.<br>◦ Any images you include this way are added as file attachments to the ticket. They are also included in email communication, as applicable.<br>◦ Deleting an image from the text field does not remove the associated file attachment. You can manage file attachments in the *Attachments* section of the ticket page. For more information, see Add or delete screen shots and attachments from Service Desk tickets.<br>• To add external links, click.<br>• To embed externally hosted videos, click. |
| **Submitter** | The login name of the user submitting the ticket. The submitter can be changed by selecting a different login name in the drop-down list. Click to view the submitter contact information. |

| Option | Description |
|---|---|
| **Asset** | The asset that the information in the ticket is about. Select an asset in the drop-down list. Click to view the asset details. |
| **Filter on submitter assigned assets** | Filter the asset list based on the assets that are assigned to the submitter. |
| **Device** | The device that the information in the ticket is about. Monitoring provides this information. Click to view the device details. |
| **Filter on submitter assigned devices** | Filter the asset list based on the devices that are assigned to the submitter. |
| **Impact** | The number of people that are inconvenienced or cannot work. |
| **Category** | A classification of the issue. |
| **Status** | The current state of the ticket. This field does not appear if you are creating or editing a ticket from a process template. |
| **Priority** | The importance of priority of the ticket. |
| **Owner** | The user responsible for managing the ticket through its lifecycle. |
| **Due** | Date and time the ticket is scheduled to be completed.<br>If Service Level Agreements are not enabled, the due date is set to None, by default.<br>If Service Level Agreements are enabled, the due date is automatically calculated according to the SLA settings. The due date is calculated based on the priority set when the ticket is submitted. If the priority is changed after the ticket is initially submitted, the due date will be recalculated according to the new priority, but based on the original submitted date and time. If the SLA resolution time configuration is changed, it is only applicable on new tickets. Old tickets are not affected. See Configuring Service Level Agreements.<br>Select **Manual Date** to manually set the due date and time. In this case, if Service Level Agreements are enabled, the due date and time is calculated and displayed as an option, but not selected. |
| **CC List** | A list of users who receive a notification email when a ticket event occurs. The CC List is emailed based on the ticket event and **Ticket CC** being configured for the queue **Email on Events** configuration. |
| **Resolution** | The resolution of the issue associated with the ticket.<br>This field includes a full range of text editing options for formatting your content, such as buttons for bold text, hyperlinks, lists, or text color. |

| Option | Description |
| --- | --- |
| | For example:<br>• To apply bold text to a text string, select it in the editor, and click B.<br>• To add images, click , and provide the URL to the image file, a local file path, or simply drop the image into the indicated area.<br>◦ You can also copy and paste screen shots directly into the text field.<br>◦ Any images you include this way are added as file attachments to the ticket. They are also included in email communication, as applicable.<br>◦ Deleting an image from the text field does not remove the associated file attachment. You can manage file attachments in the *Attachments* section of the ticket page. For more information, see Add or delete screen shots and attachments from Service Desk tickets.<br>• To add external links, click .<br>• To embed externally hosted videos, click . |
| **Related Ticket Information** | This section does not appear if you are creating a ticket from a process template. |
| **Add Ticket** | Click to add an additional ticket to this ticket's related information. |
| **Referrers** | The **Referrer** is a read-only field that holds a ticket reference to any ticket that references this ticket by way of the **See also** section. |
| **Merged Tickets** | This section allows you to edit the list of tickets merged with this ticket, as applicable. Any tickets that you want to merge must belong to the same queue. When you merge tickets using the *Ticket Detail* page, the open ticket becomes the primary ticket. All other merged tickets are archived when you merge them. For more details, see Merging tickets.<br>To add a merged ticket, click **Add Tickets to Merge/Edit Merged Tickets**, and select a ticket from the list that appears. |
| **Process Information** | This section only appears if you are creating a ticket from a process template. All of the settings appearing in this section are read-only. For complete information about creating and configuring process templates, see Add, edit, and enable process templates |
| **Process** | The name of the process template associated with this ticket. |
| **Process Type** | The type of the process. |
| **Process Status** | The status of the workflow associated with this process template. For example, *Pending Approval*. |
| **Parent** | The name of the parent ticket, as defined in the process template associated with this ticket. |
| **Process Approvals** | A list of users that are assigned as approvers for this ticket, if applicable. The approvers are listed in stages, as defined in the process template. Each stage can have one or more approvers, as needed. The settings related to each approver and stage are also listed in this section, such as approval timeouts and notifications. |

| Option | Description |
|---|---|
| | When you create a process ticket, the timeout period starts for the first approver. When that user approves the ticket, the timeout starts for the next one, and so on. |
| **Process Activities** | A list of process activities, each representing a child ticket, and listed in stages, as defined in the process template. Multiple tickets can be assigned to the same stage, if needed. For example, if the first stage is to obtain equipment and supplies for a new-hire, you can have several separate child tickets for ordering devices, office equipment, and supplies, all assigned to stage 1. When you create a process ticket, all child tickets assigned to stage 1 are created automatically. Stage 2 tickets are created when all stage 1 tickets are closed, stage 3 tickets are created when all stage 2 tickets are closed, and so on. |
| **Add Ticket** | Click to add an additional ticket to this ticket's related information. |
| **Referrers** | The **Referrer** is a read-only field that holds a ticket reference to any ticket that references this ticket by way of the **See also** section. |
| **Comments** | Comments that you want to add to the ticket. You can also add file attachments, screenshots, provide automatic responses or Knowledge Base article contents as ticket comments. For more information see:<br>• Add comments to tickets<br>• Add or delete screen shots and attachments from Service Desk tickets<br>If you want to add an automatic response as a resolution to this ticket, click **Predefined Response** and select a response template.<br>The selected response template appears in the **Resolution** field. You can add multiple response templates as resolution entries. They appear in the order you selected them.<br>**TIP:** To create or edit a response template, save your changes and click **Manage**. This will take you to the *Response Templates* page. For more information about response templates, see View and edit response templates. |
| **Knowledge Base Article** | Look up a Knowledge Base article and append its contents to the ticket comments. For more information about Knowledge Base articles, see Managing Knowledge Base articles. |

**Related topics**

Managing Service Desk tickets, processes, and reports

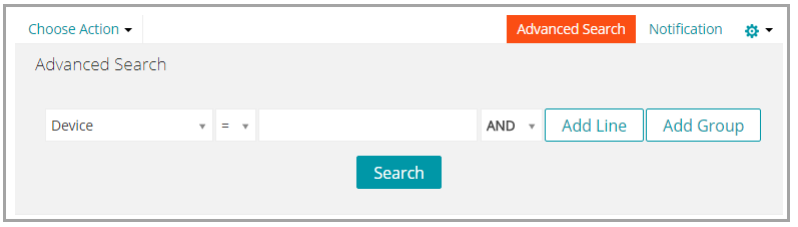
# Search for alerts using Advanced Search criteria

Advanced Page-level Search enables you to search for information on the current page using various combinations of criteria.

This example shows how to use Advanced Search to find critical alerts related to a connection issue.

1. Go to the *Monitoring Alerts* list page in one of the following ways:
   - **If you have the** *Monitoring Alerts* **widget installed on your open** *Dashboard***, click Monitoring Alerts.**
   - **In the left navigation bar, select Monitoring > Alerts.**
2. Click **Advanced Search** on the right, above the *Monitoring Alerts* list.

   **The** *Advanced Search* **panel appears.**




3. Specify the criteria required to find alert level:

   `Montoring Alert Information: Level | is | Critical`
4. With **AND** selected in the operator drop-down list, click **Add Line** to add a new line, then specify the criteria required to find alerts that contain **Unable to connect** in the message:

   `Montoring Alert Information: Message | contains | unable to connect`
5. Click **Search**.

The list is refreshed to show devices that match the specified criteria.

# Filtering alerts using the Include Text and Exclude Text capability

If you are receiving too many alerts of a certain type, or if you want to track a particular alert, you can filter alerts based on the message text and severity level.

You can exclude specific events from being raised as alerts if you find them unnecessary or distracting. To filter the alerts you do not want to receive, you use *Exclude Text* to indicate the content that identifies an unwanted alert. Use *Exclude Text* in conjunction with *Include Text* to refine a subset of an alert category.

There are two methods for filtering alerts from being reported by the monitoring feature. One entails working in the *Profile Details* page and the other entails using the **Choose Action** drop-down menu from the *Monitoring Alerts* list page.

## Filter alerts using the Include Text and Exclude Text capability from the Profile Details page

You can filter the alerts you receive based on the message text and severity level.

**Use** *Exclude Text* **in conjunction with** *Include Text* **to refine a subset of an alert category.**

**NOTE:** The criteria match text, for example, error, is matched in Windows event logs against both the severity level and the message itself.

1. Go to the *Profiles* list page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General

Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Monitoring**, then click **Profiles**.

2. Select the check box for the existing profile that you want to edit, and select **Choose Action** > **Edit** to display the *Profile Detail* page.
3. Make changes to the include and exclude *Criteria* settings, as needed.

- **Change** *Include Text***.**

1. On the line with the include search text you want to change, click the **Edit** button: .
2. Type the new search text.

- **Change** *Exclude Text***.**

1. On the line with the text you want to change in order to exclude certain alerts, click the **Edit** button: .
2. Type the new exclude text.

- **If necessary, select Yes in the** *Case-sensitive* **drop-down list.**
- **Add an alert Criteria.**

1. On the *Criteria* category header, click the **Add** button: .
2. Set the level, include text, exclude text, and case sensitivity.

4. Click **Save** at the bottom of the page.

**Related topics**

Examples of Include Text and Exclude Text for monitoring profiles

Edit a profile

# Filter alerts using the Exclude Text capability from the Monitoring Alerts list page

If you are receiving too many alerts of a certain type, you can filter them based on the message text.

You can use full messages, parts of messages, and basic regular expressions in the *Exclude Text* field to define criteria for filtering the alerts you receive.

1. Go to the *Monitoring Alerts* list:

a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. Access the alerts list from either the Dashboard or the navigation bar.

- **If you have the** *Monitoring Alerts* **widget installed on your open** *Dashboard***, click Monitoring Alerts.**
- **In the left navigation bar, select Monitoring > Alerts.**

2. Select the check box next to an alert.
3. Select **Choose Action** > **Filter Alerts Like This**.

**The** *Filter Alerts Like This* **dialog appears, with the content of the alert message populating the** *Exclude Text* **field.**

4. Edit text in the *Exclude Text* field to refine the filter.

Example: To raise alerts for disk errors except for those errors for a fragmented disk, you could enter the following:

| Include Text entry | Exclude Text entry |
|---|---|
| Error code.*Disk /dev/sd[a-z] | is fragmented |

5. Click **Save**.

   **The profile that generated the alert is modified with this exclude information.**

Related topics

Examples of Include Text and Exclude Text for monitoring profiles

Filter alerts using the Include Text and Exclude Text capability from the Profile Details page

# Examples of Include Text and Exclude Text for monitoring profiles

Full messages, parts of messages, and basic regular expressions can be used in the *Include Text* and *Exclude Text* fields for defining criteria.

### Examples of field entries to match string formats

| String Format (what to match) | Example Data | Include Text | Comments |
|---|---|---|---|
| [any text]`Error 32768 Physical memory running low`[any text] | `Error 32768 Physical memory running low` | `Error 32768 Physical memory running low` | Matches:<br>"`Error 32768 Physical memory running low`" |
| `Drive /dev/`[any drive mount point] `has drive errors` | `Drive /dev/sdi has drive errors` | `Drive /dev/[a-z]{1,} has drive errors` | Matches:<br>"`Drive /dev/`"<br>followed by any word of any length containing the characters a-z<br>followed by "`has drive errors`" |
| `Error` nnnn`: Disk is` [any text] | `2014-06-28: Error 4567: Disk is full` | `Error [0-9]{4}: Disk is` | Matches:<br>"`Error`"<br>followed by any four-digit number<br>followed by "`: Disk is`" |
| `Error` nnnnnn [some error message] | `Error 4096 Drive has errors` | `Error [0-9]{1,8}` | Matches:<br>"`Error`"<br>followed by any 1- to 8-digit number |
| `[FATAL]` [some error message] | `[FATAL] General exception occurred` | `[FATAL].*` | Matches:<br>"`[FATAL]`"<br>followed by any message |

| String Format (what to match) | Example Data | Include Text | Comments |
|---|---|---|---|
| `error reading` [text] `on` [some volume]: | `error reading swap label on /dev/ VolGroup00: [Errno 21] Is a directory` | `error reading.* on /dev/[a-zA-Z0-9]*:` | Matches:<br>"`error reading`"<br>followed by any text<br>followed by "`on /dev/`"<br>followed by any mount point containing the characters a-z, A-Z, 0-9 of any length<br>followed by a colon |

### Examples of using Include Text and Exclude Text in conjunction to refine the alert output

**Example A: String as exclude text**

In this example, you are not interested in receiving alerts for disk errors about fragmented disks from a particular drive mount point, but you want all other errors to come through.

```
2015-02-03T15:38:45.129748-06:00 SLES12u0x64 Error code 4: Disk /dev/sda has errors 2015-02-03T15:38:45.129748-06:00 SLES12u0x64 Error code 5: Disk /dev/sda is fragmented 2015-02-03T15:38:45.129748-06:00 SLES12u0x64 Error code 6: Disk /dev/sda has a bad block
```

To raise alerts for the disk error and bad block but not for a fragmented disk, you could enter the following:

| Include Text entry | Exclude Text entry |
|---|---|
| `Error code.*Disk /dev/sd[a-z]` | `is fragmented` |

**NOTE:** *Include Text* does not recognize line breaks within the text box. This means that if you entered

```
code 5
code 7
```

**NOTE:** the search would look for matches for `code 5code 7`. In this case you should use **Add** to create a separate line for the second inclusion.

**NOTE:** However, *Exclude Text* does recognize line breaks within the text box. This means that if you entered

```
code 5
code 7
```

**NOTE:** the search would look for matches for `code 5` together with `code 7`. In this case you do not need to use **Add** to create a separate line for the second exclusion.

**Example B: Basic regular expression as exclude text**

In this example, you are not interested in receiving alerts for disk errors about fragmented disks or age information from a particular drive mount point, but you want all other errors to come through.

```
2015-02-03T15:38:45.129748-06:00 SLES12u0x64 Error code 4: Disk /dev/sda has errors 2015-02-03T15:38:45.129748-06:00 SLES12u0x64 Error code 5: Disk /dev/sda is fragmented 2015-02-03T15:38:45.129748-06:00 SLES12u0x64 Error code 6: Disk /dev/sda has a bad block 2015-02-03T15:38:45.129748-06:00 SLES12u0x64 Error code 7: Disk /dev/sda is more than 3 years old
```

To raise alerts for the preferred events while ignoring the events that contain error code 5 or error code 7, you could enter the following:

| Include Text entry | Exclude Text entry |
|---|---|
| `Error code.*Disk /dev/sd[a-z]` | `Error code [5\|7]` |

### Escaping special characters in the include or exclude criteria text fields

When you type characters into the exclude or include criteria text fields you can also enter special characters such as single or double quotes. However, if you use these special characters, they must be escaped with a backslash character (\) in order for the search to work properly.

| Character | Description |
|---|---|
| ' | single quote |
| " | double quote |
| ` | back tick |
| \ | backslash |

For example, to search for **Received 'redoubt started' message**, you would type Received \'redoubt started\' message.

# Dismiss an alert

When you have dealt with an alert, you can dismiss it so that it does not appear in the lists of active alerts.

Dismissing an alert does not remove it from the database. If you want to delete the alert from the database, see Delete alerts.

1. Go to the *Monitoring Alerts* list page in one of the following ways:
   - **If you have the** *Monitoring Alerts* **widget installed on your open** *Dashboard***, click Monitoring Alerts.**
   - **In the left navigation bar, select Monitoring > Alerts.**
2. Select the check box for the row that contains the alert message, then select **Choose Action** > **Dismiss**.

   **The alert list no longer displays the alert.**

**Related topic**

Retrieve and review alerts that have been dismissed from the alerts list

# Retrieve and review alerts that have been dismissed from the alerts list

A dismissed alert remains in the database, and can be retrieved to the alerts list, where you can review it.

**NOTE:** Deleted alerts cannot be retrieved.

1. Go to the *Monitoring Alerts* list page in one of the following ways:
   - **If you have the** *Monitoring Alerts* **widget installed on your open** *Dashboard***, click Monitoring Alerts.**
   - **In the left navigation bar, select Monitoring > Alerts.**
2. Select **Choose Action** > **Include Dismissed Alerts**.

   **The alert list is repopulated with all dismissed alerts. These alerts are identified in the** *Status* **column with a status of** *Dismissed***.**

# Delete alerts

After you have dealt satisfactorily with an alert, you can delete it from the database.

1. Go to the *Monitoring Alerts* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Monitoring**, then click **Devices**.
2. Select the check box next to one or more alerts.
3. Select **Choose Action** > **Delete**, then click **Yes** to confirm.

# Using the Service Desk

Service Desk is the end-user trouble-ticket tracking system that is provided with the appliance. The Service Desk enables users to submit trouble tickets through email, through the Administrator Console, and through the User Console.

# Configuring Service Desk

Configuring the Service Desk entails setting up roles, user authentication, labels, ticket and email settings, queues, and customizations.

## System requirements

To use the Service Desk, you must have an appliance, an email server, and user account information.

- **Appliance requirements**: To use Service Desk, you must have an appliance set up and configured. See information on setting up the appliance server in Configuring the appliance.
- **Email server requirements**: You must have one of the following types of email servers for sending and receiving Service Desk email:
  - A POP3 email server. See About POP3 email accounts.
  - An email server, such as the Microsoft Exchange Server. For instructions on configuring this server to connect to the appliance, see Configuring SMTP email servers.
- **User account information**: User account information can be stored in an LDAP-compliant directory service such as Microsoft Active Directory. Storing user account information allows Service Desk to efficiently find and import data that it uses to authorize users and identify anything else that you want to track. You can filter groups of users or other entities by referencing their LDAP attributes, such as organizational units, domain components, and relative distinguished names. See Configuring user accounts, LDAP authentication, and SSO.

If your organization is small, you can eliminate this requirement by creating the required user account information manually, one user at a time. For more information about creating users manually, see Setting up Service Desk.

## About Service Desk

Service Desk is the default name for the end-user trouble-ticket tracking system that is part of the appliance User Console. The Service Desk enables end users to submit trouble tickets through email or through the User Console.

Your help desk team manages these tickets through email, the Administrator Console, `http://`**appliance_hostname**`/admin`, or the KACE GO app. You can customize the categories and fields associated with tickets as needed.

**NOTE:** In previous versions of the appliance, **Service Desk** was referred to as **Help Desk**. If you upgraded from a previous release, you might see **Help Desk** or a custom phrase on the tab in the Administrator Console. You can change this label as described in Rename Service Desk titles and labels.

# Overview of setup tasks

You can configure Service Desk to meet your company policies and branding requirements.

Setup tasks include:

- **Set up User Roles and labels**: Create permission-based roles to manage user access. See Setting up roles for user accounts.
- **Set up user accounts**: All Service Desk users and administrators must have authenticated user accounts. See Configuring user accounts, LDAP authentication, and SSO.
- **Customize ticket information**: Add ticket categories, status, impact, and priority properties as needed. Identify additional information to include in tickets. See Configuring ticket settings.
- **Customize email templates**: Configure the Service Desk email templates used to send notifications. See Configure email templates.
- **Set up email notifications**: Configure the events that trigger email notifications. See Configuring email settings.
- **Set up queues and processes**:
  - **Queues**: Use queues to organize tickets or to handle different types of tasks, such as hardware tasks and software tasks. See Configuring Service Desk ticket queues.
  - **Processes**: Use processes to set relationships between tickets that are parts of major or sequential tasks. You can also establish relationships by using parent-child relationships within tickets. See Using Service Desk processes.
- **Set up ticket rules**: Configure the rules that Service Desk uses to process tickets. See About Ticket Rules
- **Decide whether to offer a Satisfaction Survey to users**: See Using the Satisfaction Survey.
- **Configure company business hours and holidays**: Define your company's hours of operation and recognized holidays. These hours and holidays are used in determining ticket due dates and Service Level Agreement violations. See Configuring Service Desk business hours and holidays.
- **Configure Service Level Agreements (SLAs)**: Configure the SLAs used in calculating ticket due-dates and SLA violations. See Enable Service Level Agreements.
- **Configure** User Console **home page settings**: Change the logo and welcome information on the User Console home page. Or, show or hide quick actions and announcements as well as links to Knowledge Base articles, tickets, and other items. See:
  - Change the User Console logo and login text at the Admin-level
  - Show or hide action buttons and widgets on the User Console home page
  - Add, edit, hide, or delete User Console announcements
  - Add, edit, or delete custom links on the User Console home page
  - Show or hide links to Knowledge Base articles on the User Console home page

# Import tickets from another system

You can import tickets from another system using prepared CSV (comma-separated value) files. Start by exporting your tickets to a CSV file and then use the *Import Tickets* wizard to import that content into the appliance. The wizard validates the data being imported, and certain fields must follow predefined formats, to prevent related records from being rejected.

1. Export your ticket data to a CSV file.
2. Go to the *Import Tickets* wizard:

a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
c. On the **Configuration** panel, in the *Import* section, click **Import Tickets**.

3. In the *Import Tickets* wizard, on the *Select Ticket Import File* page, specify the CSV file and the related options, as needed.

**TIP:** You can review the status of the most recent ticket import by clicking the link at the bottom of the page.

a. In the *Upload file (.csv)* section, click **Choose File**, and select the CSV file containing ticket data that you want to import.
b. If your CSV file has a header row, select the **File Header Row** check box.
c. In the *Importing to* section, specify the queue and template into which you want to import your ticket data.
d. If your ticket data includes one or more users who do not exist in the appliance database, and you want to automatically create them as you import the tickets, select the **Auto Create User** check box.
e. Click **Next**.

4. In the *Import Tickets* wizard, on the *Field Mapping* page that appears, map the ticket template fields to the ticket fields specified in the CSV file.

**Use the following guidelines when mapping ticket fields:**

- To specify a ticket field, click the **CSV Fields** column, and select the applicable value.
- A **Comment** field must use the following syntax: `"<datetime>";"<user_name>";"<comment>";"<owners_only_flag>"`. Multiple comments in a single **Comment** field must be separated with `|EOL|`. For example: `"01/01/2019 10:10";"Admin";"This is a sample comment";"Y"|EOL|"01/02/2019 11:20";"User A";"This is a sample comment 2";"Y"|EOL|"01/02/2019 12:00";"Admin";"This is a sample comment 3";"Y"|EOL|`. Alternatively, you can use the Primary Key to combine multiple column entries in the same ticket field. See Table 33 and Table 34.
- A **Work Detail** field must use the following syntax: `"<user_name>";"<start_datetime>";"<end_datetime>";"[adjustment_time];[<note>]`. Multiple comments in a single **Comment** field must be separated with `|EOL|`. For example: `"Admin";"01/01/2019 08:10";"01/01/2019 10:30";"10";"Work Note"|EOL|"User B";"01/01/2019 11:20";"01/01/2019 12:30"`. Alternatively, you can use the Primary Key to combine multiple column entries in the same ticket field. See Table 33 and Table 34.
- A **Category** field that contains subcategories must use a double colon "::" to separate subcategories. For example: `Hardware::Printer::Paper`. If the import detects any categories that do not already exist on the appliance, those records are automatically rejected.
- **Impact** and **Priority** fields must contain valid contents that are predefined on the appliance.
- User name fields (such as **Submitter**) accepts the user email, user name, user ID, and the display name. Multiple records with the same user name are automatically rejected.
- The contents of any custom fields that expect a certain data format (such as links) are validated and rejected if the data is invalid.
- Use the **PK** column to indicate if a row is a primary key for the data records. Any records that have the same value of the column marked as a primary key are combined into a single Service Desk ticket. For example, if you mark the **Title** column as a primary key for the ticket table, and all of your records in the CSV file have the exact same **Title** column (for example *My Ticket*), the import results in a single Service Desk ticket being created, with multiple entries combined in the same column. Alternatively, when importing *Comment* and *Work Detail* columns, you can use `|EOL|` to separate the entries. The following examples show you how to structure your input CSV file when you want to

combine multiple entries into the same ticket field, either by using the `|EOL|` delimiters (*Comment* and *Work Detail* columns only), or the Primary Key (PK) setting (any column).

**Table 33. Example: Combine multiple column entries using |EOL| delimiters (Comment and Work Detail columns only)**

| Title | Status | Priority | Owner | Comment |
|---|---|---|---|---|
| Title A | New | Medium | Admin | "6/15/2021 3:15:44 comment AAA" \|EOL\|<br>"6/17/2021 5:17:25 comment BBB" \|EOL\|<br>"6/19/2021 7:21:42 comment CCC" \|EOL\| |
| Title B | Closed | High | Admin | "7/21/2021 2:18:31 comment DDD" \|EOL\|<br>"6/17/2021 4:56:56 comment EEE" \|EOL\|<br>"6/19/2021 6:28:32 comment FFF" \|EOL\| |

**NOTE:** The `|EOL|` delimiter instructs the wizard to combine these entries into a single *Comment* field. There is no need to declare the *Title* column as the primary key (*PK*). The same syntax applies to *Work Detail* contents.

**Table 34. Example: Combine multiple column entries using the Primary Key setting**

| Title | Status | Priority | Owner | Comment |
|---|---|---|---|---|
| Title A | New | Medium | Admin | "6/15/2021 3:15:44 comment AAA" |
| Title A | | | | "6/17/2021 5:17:25 comment BBB" |
| Title A | | | | "6/19/2021 7:21:42 comment CCC" |
| Title B | Closed | High | Admin | "7/21/2021 2:18:31 comment DDD |
| Title B | | | | "6/17/2021 4:56:56 comment EEE" |
| Title B | | | | "6/19/2021 6:28:32 comment FFF" |

**NOTE:** When you declare the *Title* column as a primary key (PK), all entries with the same *Title* (*Title A* and *Title B*) are combined into a single *Comment* field. There is no need to use `|EOL|` delimiters. The same mechanism applies to other columns, including *Work Detail* .

- The **PK** setting can also be used to update an existing ticket. For example, you uploaded *Ticket A* with the data listed in Table 35, you can easily replace by uploading an updated CSV file outlined in Table 36, but you must set the *Title* column as the Primary Key (**PK**) in the settings:

**Table 35. Example: Initial CSV data**

| Title | Status | Priority | Owner |
|---|---|---|---|
| Title A | New | High | User A |

**Table 36. Example: Updated CSV data**

| Title | Priority | Owner |
|---|---|---|
| Title A | Low | User B |

- When done, click **Preview**.

5. Confirm that the data you are about to import is valid on the *Confirmation* page that appears.
   a. Review the following sections:
   - **Records for insertion**: Lists all ticket records from the CSV file that are about to be created as Service Desk tickets.
   - **Records for update**: Lists all ticket records from the CSV file that are about to update existing Service Desk tickets.
   - **Rejected records**: Lists all ticket records from the CSV file that are not going to be created as Service Desk tickets due to errors. For each rejected record, the *Reason* column in this section indicates the cause of the error. The related ticket field appears highlighted in red. Review the contents of that field to better understand the problem. For example, if you have users in your CSV file who do not exists on the appliance, and did not select **Auto Create User** check box, this causes an error for each such user. You can resolve any errors by editing the import CSV file, or changing the applicable import options on the *Select Ticket Import File* page.

   b. When you are ready to proceed with the import of the ticket data, click **Import**.

   **NOTE:** Once you start with the import, the process cannot be stopped or reverted, however you can delete any tickets once the import is completed.

   **The *Import Tickets - Status* page appears, indicating that the ticket records are being imported. The time required to complete import depends on the amount of ticket data being imported. When done, the *Status* row tells you the outcome of the import operation. If any errors are detected during the import, this is indicated in the *Error records* row. Click Show details to find out more (when applicable).**

6. If you are satisfied with the outcome of the import, and do not need to import any additional records, click **Done**. To import more tickets, click **Import More**, and repeat the import process, as applicable.

# Configuring Service Desk business hours and holidays

You can configure business hours and holidays to effectively track and meet Service Level Agreements (SLAs) in your Service Desk queues. If the Organization component is enabled on your appliance, you configure business hours and holidays for each organization separately.

After you configure business hours and holidays, you need to enable the SLA settings in each Service Desk ticket queue to use those business hours and holidays.

## Configure Service Desk business hours

You can configure the Service Desk to account for business hours when calculating due dates for tickets. If you have multiple organizations, you configure business hours for each organization separately.

After you configure Service Desk business hours, you need to enable ticket queues to use those hours in their Service Level Agreement (SLA) settings.

1. Go to the *Business Hours* page:

a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
c. On the **Configuration** panel, in the *Business Hours and Holidays* section, click **Define Business Hours**.

2. For each day of the week, specify the hours of operation by providing the starting and ending time, by selecting the **Open 24 hours** check box, or by selecting the **Closed** check box.
3. Click **Save**.

Configure queues to use business hours in SLAs. See Configure ticket queues.

## Configure Service Desk holidays

You can configure the Service Desk to account for company holidays when calculating due dates for tickets. If you have multiple organizations, you configure the holiday schedule for each organization separately.

After you configure Service Desk holidays, you need to enable ticket queues to use those holidays in their Service Level Agreement (SLA) settings.

1. Go to the *Holidays* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
   c. On the **Configuration** panel, in the *Business Hours and Holidays* section, click **Define Holidays**.
2. Click **Add Holiday** to add a new holiday to the list. Click the **Edit** button next to a holiday to edit it:  . Click the **Delete** button next to a holiday to remove it:  . Holidays in the list can be filtered by year by selecting a year in the **Filter by Year** drop-down list.
3. Click **Save**.

Configure queues to use holidays in SLAs. See Configure ticket queues.

# Configuring Service Level Agreements

Service Level Agreements (SLAs) are the rules used to calculate the expected resolution time, or due dates, for Service Desk tickets based on ticket priority.

You can set the expected resolution time for each ticket priority, and you can enable SLAs to take the defined business hours and holidays into consideration when calculating due dates. For example, if tickets with a priority of **Low** are set to be resolved in two days, and a Low priority ticket is submitted the day before a holiday, the holiday is excluded from the two-day resolution time when calculating the due date.

In addition, if notifications and email events are enabled, email is sent to users specified in the SLA Violation email event when tickets are overdue. The frequency of email notifications is configured in the SLA settings, and notifications are sent according to that frequency, even if that frequency includes non-working hours or holidays.

## Enable Service Level Agreements

Service Level Agreements (SLAs) define the time allowed to resolve tickets in each queue. If you have multiple Service Desk queues, you configure SLA settings for each queue separately.

SLAs are based on the priority values defined in the queue, so these values should be defined before SLAs are configured. See Customize ticket priority values. In addition, SLAs can use business hours and holidays only if those hours and holidays have been defined. See Configuring Service Desk business hours and holidays.

1. Go to the Service Desk *Queue Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
    c. On the **Configuration** panel, click **Queues**.
    d. To display the *Queue Detail* page, do one of the following:
    - Click the name of a queue.
    - Select **Choose Action** > **New**.
2. Scroll down to the *Service Level Agreement* section. A row is displayed for each priority value defined for the queue. See Customize ticket priority values.
3. For each Priority, such as **High**, **Medium**, and **Low**, specify the following settings:

| Option | Description |
|---|---|
| **Enabled** | Whether the SLA is enabled for the priority. Select the check box to enable the SLA, clear the check box to disable it.<br>**NOTE:** If the Service Level Agreement is enabled for a Priority, the ticket due date is calculated automatically based on the Resolution Time defined for that priority. Any user who has Modify Permission on the DUE_DATE field is able to override this automatically calculated date. |
| **Resolution Time** | The time, in hours or minutes, for the enabled priority. This time period is used to automatically calculate a ticket's due date and time based on the date and time the ticket is submitted. |
| **Use Business Hours/Holidays** | Whether to use the configured business hours and holidays when calculating ticket due dates for each priority. Select the check boxes to use these settings. See Configuring Service Desk business hours and holidays. |
| **Notification Recurrence** | The time, in hours or minutes, for email notifications to be sent. A recurring email notification is sent when a ticket has passed its due date and is not yet resolved. The email is sent to the users specified in the SLA Violation email event, if configured in the Email on Events section. See Configuring email triggers and email templates.<br>**NOTE:** To send a single email notification with no recurrence, enter 0. |

4. Click **Save**.

# Configuring Service Desk ticket queues

Service Desk tickets are stored in queues on the appliance. Most organizations need only a single ticket queue. You can customize this single queue, or create and manage additional queues, as needed.

See Managing Service Desk ticket queues.

# Configure ticket queues

You can modify the settings of ticket queues as needed.

1. Go to the Service Desk *Queue Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
    c. On the **Configuration** panel, click **Queues**.
    d. To display the *Queue Detail* page, do one of the following:
    - Click the name of a queue.
    - Select **Choose Action** > **New**.
2. Specify the following settings:

| Field | Description |
|---|---|
| **Name** | The name of the *Service Desk* queue. This name appears in the *From* field when users receive email messages from the Service Desk. |
| **Email Address** | A fully qualified email address for the server. Users typically do not reply to this address.<br>If you want to allow users to reply to appliance email, specify an email address in the *Alternate Email Address* field. |
| **Ticket Number Prefix** | Specify a custom ticket prefix for this queue. You can use a different prefix for each queue to organize your Service Desk workflow, and to associate them with applicable categories, such as HD for Helpdesk or REQ for hardware and software requisitions. |
| **Alternate Email Address** | **Support@mydomain.com**<br>The primary email address your users send email to. The appliance also uses this address to send email from the Service Desk. Confirm that the domain name is correct for your email service.<br>**NOTE:** As a valid email address, this address is subject to the same spam and security vulnerabilities as any other email address. |

3. **Optional**: Configure the SMTP/ POP3 server settings. Click **Configure Queue Email Settings** and specify the SMTP/POP3 options on the *Service Desk Queue Email Settings* page, as required. See Configure queue-specific email settings.
4. Click **Save** to create the queue and configure additional settings.
5. Specify *User Preferences*:

| Field | Description |
|---|---|
| **Allow all users as submitters** | Allow anyone who is a user on the appliance to submit tickets through this Service Desk queue. |
| **Restrict Submitters by Label** | Select submitters by label only. Available only when **Allow all users as submitters** is not selected. |

| Field | Description |
|---|---|
| **Allow all users as approvers** | Allow users on the appliance to approve tickets through this Service Desk queue. |
| **Restrict Approvers by Label** | Select approvers by label only. Available only when **Allow all users as approvers** is not selected. |
| **Owner Label** | If you want to enable all users to have the ability to approve tickets, select **Allow all users as approvers**.<br>Identify the users who are allowed to own and manage tickets — typically, your IT staff. You must have a Ticket Owner who is responsible for managing the ticket through its life cycle.<br>To do that, click **Manage Associated Labels**. In the *Select Labels* dialog box that appears, select one or more labels associated with the users that you want to select as Ticket Owners. Close the dialog box. |
| **Accept email from unknown users** | Allow unrecognized users to create tickets.<br>If this option is enabled in the queue configuration, any email sent to the Service Desk queue is allowed to set the *Submitter* field of a ticket. The sender is added to the appliance as a user with the *User Console Only* role. By default, this role has permission to create, view, and modify Service Desk tickets, and to interact with the appliance exclusively through the User Console. You can adjust the level of permissions associated with this and other roles, as applicable. For more information, see Setting up roles for user accounts.<br>If disabled, the preceding process works only when the email address of the sender is already associated with a Service Desk user account. |
| **Allow ticket deletion** | Allow ticket owners and administrators to delete tickets. This setting is useful if you do not want staff to delete tickets. You can periodically select this check box to clean out old tickets, then clear it again to prevent ticket deletion. |
| **Allow parent ticket to close child tickets** | Enable the system to automatically close child tickets when parent tickets are closed. |
| **Allow last child ticket to close parent ticket** | Enable the system to automatically close parent tickets when the last child ticket is closed. |
| **Allow users with an Administrator role to read and edit tickets in this queue** (Administrator Console only) | Grant read and write permissions to all users who are assigned to the **Administrator** role. |
| **Default ticket owner comments to Owners Only visibility** | Automatically select the *Owners Only* check box when comments are added to tickets. |

| Field | Description |
|---|---|
| **Enable ticket conflict warning for ticket owners** | Display a dialog, to administrators and ticket owners, that summarizes conflicts between the changes they are submitting and the changes submitted concurrently by other users. When administrators and ticket owners click **Save** or **Apply Changes** on the *Ticket Detail* page, the dialog appears if other users have edited and saved the ticket while it was open for editing. This enables administrators and ticket owners to choose whether to discard their changes, or overwrite the changes made by other users if there are conflicts.<br><br>**NOTE:** By default, this warning is enabled on new queues and disabled on queues that were created in appliance version 6.3 or earlier.<br><br>The dialog is displayed only if other users have modified the ticket, and it is displayed to administrators and ticket owners only. The dialog is not displayed to other users.<br><br>**NOTE:** The dialog summarizes all changes made by other users. However, the current user's changes are summarized only if they conflict with changes made by other users. |
| **Allow managers to view and comment on their employee's tickets** | Enable manager accounts to view and edit comments in the tickets submitted by their employees. For more information, see View ticket comments. |
| **Allow Ticket CC list to view and comment on the ticket** | Allow the users on the ticket CC list to add comments to the ticket. |
| **Add any user to Ticket CC list when they comment on a ticket** | Add any users that comment on a ticket to a CC list for that ticket, allowing them to be notified by email about further changes to the ticket. |
| **All users can edit/delete their own comments (including attachments)** | Allow all users to edit or remove their own comments, including file attachments. |
| **User Label** | To allow specific users to edit or delete their own comments and attachments using labels, click **Manage Associated Labels**. In the *Select Labels* dialog box that appears, select one or more labels associated with the users that you want to select. Close the dialog box. |
| **All technicians can edit/delete comments entered by others (including attachments)** | Allow all technicians to edit or remove comments added by others, including file attachments. |
| **Technician Label** | To allow specific technicians to edit or delete their own comments and attachments using labels, click **Manage Associated Labels**. In the *Select Labels* dialog box that appears, select one or more labels associated with the technicians that you want to select. Close the dialog box. |

| Field | Description |
|---|---|
| **Enable aggressive HTML sanitization** | Remove all malicious code on all fields that accept HTML. |
| **Allow Knowledge Base article suggestions** | Display KB article suggestions while typing the ticket title.<br>**NOTE:** If this option is disabled and a password manager is linked to the browser, this prevents the browser from auto-completing the related Service Desk ticket fields. |
| **Ticket attachment restrictions** | Indicate how you want to handle file attachment restrictions, as applicable.<br>• **None**: Allow users to add any types of files as attachments.<br>• **Allow images only**: Allow only image files to be added as attachments.<br>• **Custom**: Specify file extensions that you want to allow as attachments. You can also allow all files without extensions.<br>• **Prevent all attachments**: Disable users from adding any file attachments. |

6. In the *Archive Preferences* section, select settings for ticket archival. Click the **Settings** link to enable ticket archival.

**NOTE:** If Ticket Archival is turned off, see Enable ticket archival.

| Option | Description |
|---|---|
| **Archive closed tickets older than** | The age of tickets to be archived. For example, if you select **3 months**, tickets are archived when three months have passed since the tickets were closed. To prevent tickets in the queue from being archived, select **Never**. Archived tickets can be restored to the queue if necessary. See Restore archived tickets. |
| **Delete archived tickets older than** | The age of tickets to be permanently removed from the archive. For example, if you select **6 months**, archived tickets are deleted from the archive when six months have passed since the tickets were opened. To prevent tickets in the queue from being |

| Option | Description |
|---|---|
| | deleted from the archive, select **Never**. Deleted tickets cannot be restored to the queue. |

7. In the *Ticket Defaults* section, select the default values for new tickets. For example:
   - **Category**: Software
   - **Status**: New
   - **Impact**: 1 person cannot work
   - **Priority**: Medium
8. In the *Email on Events* section, select the categories of users who will receive email when the specified events occur. Each column represents a type of Service Desk user (role) and each row represents a ticket event. See Configure email triggers.
9. **Optional**: Configure *Service Level Agreement Settings*. Here you can enable Service Level Agreement (SLA) settings based on the ticket priority. When enabled, the due date of the ticket automatically takes into account the resolution time, business hours, and holidays. See Configuring Service Level Agreements.
10. In the *Ticket Rules* section, enable the rules to apply to tickets in the queue. You can use any of the pre-defined rules or customize your own. See Using Ticket Rules for more information about how to use and customize ticket rules.
11. Click **Save**.

# Configure queue-specific email settings

You can set up email settings for each ticket queue separately.

By default, the Service Desk is configured to use an internal SMTP server for sending ticket-related emails. You have an option to use an external SMTP server, however, you must configure it in the appliance network settings. For more information, see Change appliance network settings.

1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
2. Go to the queue-specific *Service Desk Queue Email Settings* page:
   a. On the left navigation bar, click **Service Desk**, then click **Configuration**.
   b. On the **Configuration** panel, in the *Email Configuration* section, click **Configure Service Desk Queue Email Settings**.
   c. On the *Service Desk Queue Email Settings* page that appears, select a queue.

   **Or:**

   a. On the left navigation bar, click **Service Desk**, then click **Configuration**.
   b. On the **Configuration** panel, click **Queues**.
   c. To the right of the queue email address, click **Configure Queue Email Settings**.

   **The** *Service Desk Queue Email Settings* **page appears.**
3. In the *Built-in Email Setting* section, specify the following options:

| Field | Description |
|---|---|
| **Email Address** | A fully qualified email address for the server. Users typically do not reply to this address.<br>If you want to allow users to reply to appliance email, specify an email address in the *Alternate Email Address* field. |

| Field | Description |
|---|---|
| **Alternate Email Address** | **Support@mydomain.com**<br>The primary email address your users send email to. The appliance also uses this address to send email from the Service Desk. Confirm that the domain name is correct for your email service.<br>**NOTE:** As a valid email address, this address is subject to the same spam and security vulnerabilities as any other email address. |
| **Accept email from unknown users** | Allow unrecognized users to create tickets.<br>If this option is enabled in the queue configuration, any email sent to the Service Desk queue is allowed to set the *Submitter* field of a ticket. The sender is added to the appliance as a user with the *User Console Only* role. By default, this role has permission to create, view, and modify Service Desk tickets, and to interact with the appliance exclusively through the User Console. You can adjust the level of permissions associated with this and other roles, as applicable. For more information, see Setting up roles for user accounts.<br>If disabled, the preceding process works only when the email address of the sender is already associated with a Service Desk user account. |

4. Select and configure the method of receiving inbound email using the options in the *Inbound Email Settings* section.

   - **Use SMTP Server for inbound emails: Select this option if you want to use an internal SMTP server for incoming email. You can specify the required credentials in the *Outbound Email Setting* section below. See 5.**
   - **Use POP3 Server for inbound emails: Select this option if you want to use a POP3 server for incoming email. Specify the following options:**

| Option | Description |
|---|---|
| **POP3 Server** | Enter the name of the POP3 server you want to use for the queue. For example, **pop.example.com**. |
| **Use SSL** | Select this option if you want the POP3 server to use a secure connection. |
| **POP3 Username (email address)**<br>**POP3 Password** | Enter the username and password of an account that has access to the POP3 server. |

   Click **Test Connection** to test your POP3 configuration. The Connection Test POP3 dialog box appears, showing several log messages, indicating the test result. If the test is successful, these messages, for example, indicate if the user account is authenticated, the number of unread messages, and the subject line of the most recent email. If the test fails, verify your configuration, and try again.

   - **Use IMAP Server for inbound emails: Select this option if you want to use an IMAP server for incoming email. Specify the following options:**

| Option | Description |
|---|---|
| **IMAP Server** | Enter the name of the IMAP server you want to use for the queue. For example, **imap.example.com**. |
| **Use SSL** | Select this option if you want the IMAP server to use a secure connection. |

| Option | Description |
|---|---|
| **IMAP Server Username (email address)**<br>**IMAP Server Password** | Enter the username and password of an account that has access to the IMAP server. |

Click **Test Connection** to test your IMAP configuration. The Connection Test IMAP dialog box appears, showing several log messages, indicating the test result. If the test is successful, these messages, for example, indicate if the user account is authenticated, the number of unread messages, and the subject line of the most recent email. If the test fails, verify your configuration, and try again.

- **Use Gmail for inbound emails: Select this option if you want to use Google Gmail for incoming email. Click Select Credential.**
  - To use an existing Google OAuth credential, select in the list.

    **NOTE:** You must create a dedicated Google OAuth credential for retrieving email. You cannot, for example use the same account for accessing Chrome devices and downloading email.

  - To create a new Google OAuth credential, click **Add Credential**. The *Add Credential* dialog box appears. Specify the required options, as applicable. For more details, see Add and edit Google Workspace credentials.
- **Use Office365 for inbound emails: Select this option if you want to use Office 365 for incoming email. Specify the following options:**

| Option | Description |
|---|---|
| **Select Credential** | • To use an existing Office 365 OAuth credential, select in the list.<br>• To create a new Office 365 OAuth credential, click **Add Credential**. The *Add Credential* dialog box appears. Specify the required options, as applicable. For more details, see Add and edit Microsoft Office 365 OAuth credentials. |
| **Microsoft 365 API Service** | Select the applicable Microsoft 365 API Service for your environment:<br>• For an Azure AD app located in the US, select one of the following options, as applicable:<br>◦ **Microsoft 365 GCC**: You can continue to use the worldwide endpoints in Azure: https://graph.microsoft.com and https://portal.azure.com to register.<br>◦ **Microsoft 365 GCC High**: Use https://portal.azure.us and https://graph.microsoft.us to register.<br>◦ **Microsoft 365 DoD**: Use https://portal.azure.us and https://dod-graph.microsoft.us to register.<br>• For an Azure AD app located in Germany, select **Microsoft 365 Germany**.<br>• For an Azure AD app located in China, select **Microsoft 365 China**. |

5. If you want to use an external SMTP server for emails associated with this queue, use the settings in the *Outbound Email Setting* section.
   a. Select the *Specify Queue specific SMTP Settings* check box.
   b. Specify the following options:

| Option | Description |
|---|---|
| **SMTP Server** | Specify the hostname or IP address of an external SMTP server, such as **smtp.gmail.com**. External SMTP servers must allow anonymous (non-authenticated) outbound email transport. Ensure that your network policies allow the appliance to contact the SMTP server directly. In addition, the mail server must be configured to allow the relaying of email from the appliance without authentication. |
| **SMTP Port** | Enter the port number to use for the external SMTP server. For standard SMTP, use port 25. For secure SMTP, use port 587. |
| **SMTP Username** | Enter the username of an account that has access to the external SMTP server, such as **your_account_name**@gmail.com. |
| **SMTP Password** | Enter the password of the specified server account. |

6. Specify how you want to handle file attachments when emailing ticket details in the *Outgoing Email Attachment Setting* section.

| Option | Description |
|---|---|
| **Allow embedded images** | Select this option if you want to include any graphic files to ticket-related email. When this option is selected, the graphics appear as embedded images. |
| **Combined image size limit per email (MB)** | Specify the maximum file size of all images associated with a ticket that can be embedded in ticket-related email. |
| **Allow file attachments** | Select this option if you want to send files attached to the ticket instead of providing file links. |
| **Combined file size limit per email (MB)** | Specify the maximum file size of all file attachments that can be sent by email. |

7. On the *Service Desk Queue Email Settings* page, in the *Email on Events* section, select the options for sending email when the specified events occur. Each column represents a type of Service Desk user (role) and each row represents a ticket event.

| Service Desk user (role) | Description |
|---|---|
| **Owner** | The person who is expected to resolve the ticket. |
| **Submitter** | The person whose issue is being resolved. |
| **Approver** | The person who can approve or reject the ticket for processing. |
| **Ticket CC** | One or more email addresses that are stored in the *CC* field of the ticket. |
| **Category CC** | One or more email addresses that are stored in the *CC List* of the *Category Value* of the ticket. See Configure CC lists for ticket categories. |

| Service Desk user (role) | Description |
|---|---|
| **Queue Owners** | One or more owners of the ticket queue, as specified by the *Owner* label. This only applies to the *New Ticket Via Email* and *New Ticket via Portal* events. |

When a ticket event occurs, email is sent to the selected roles or users. For example, if you select the **Any Change** box in the *Owner* column, email is sent to the ticket owner whenever the ticket is changed. For the *Comment* and *Ticket Closed* triggers, email is sent immediately. For other ticket changes, however, email is sent every few minutes to prevent email overload.

**NOTE:** If users have the KACE GO mobile app installed on their smart phone or tablet, the system sends push notifications for the selected Service Desk ticket events.

| Option | Description |
|---|---|
| **Any Change** | Any information on the ticket is changed. |
| **Owner Change** | The ticket's *Owner* field is changed. |
| **Status Change** | The ticket's *Status* field is changed. |
| **Comment** | Information, attachments, or screen shots are added to the ticket's *Comments* section. The system sends email notifications for comments when users add comments and click **Submit** on the ticket form. When users add comments and click **Save** on the ticket form, however, only the *Any Change* notification is sent. |
| **Approval Change** | The ticket's approval status has changed. |
| **Resolution Change** | The ticket's resolution has changed. |
| **Escalation** | The ticket has not been updated to a stalled or closed status within the escalation time defined by the ticket priority. |
| **SLA Violation** | The ticket has not been resolved by its due date. |
| **Ticket Closed** | The ticket's *Status* field is changed to **Closed**. This event is used to present a Satisfaction Survey to submitters. See Using the Satisfaction Survey. |
| **New Ticket Via Email** | A user sends an email message to the Service Desk and a ticket is created. |
| **New Ticket Via Portal** | A ticket is created through the User Console. |

8. Click **Save**.

**The appliance is configured to forward email to the designated SMTP server. If you have multiple queues, repeat the preceding steps for each queue.**

# Rename Service Desk titles and labels

You can rename the Service Desk titles and labels used in the Administrator Console and User Console as needed.

1. Go to the Service Desk *Settings* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
    c. On the *Configuration* panel, click **Settings**.
2. Specify the following settings:

| Setting | Description |
|---|---|
| **Main Tab** | The text that appears on the component-level tab in the Administrator Console and on the tab in the User Console. The default is **Service Desk**. However, if you upgraded from an earlier version of the appliance, you might see **Help Desk** as the default. |
| **Queue**<br>**Queues** | The text that you want to display instead of **Queue** and **Queues** on the *Service Desk Configuration* page and on the *Queue* list in the Administrator Console. This text also appears as an option in the *Choose Action* menu and as a heading on the *Ticket* page in the User Console. |
| **Ticket**<br>**Tickets** | The text that you want to display instead of **Ticket** and **Tickets** on the *Ticket* tab and *Ticket* page in the Administrator Console. This text also appears on the *Ticket* page in the User Console. |
| **Process**<br>**Processes** | The text that you want to display instead of **Process** and **Processes** on the *Service Desk Configuration* page and on the *Process* list in the Administrator Console. |

3. Click **Save**.

# Enable or disable the conflict warning

When the conflict warning dialog is enabled for a queue, administrators and ticket owners see a notification dialog when multiple users are editing tickets concurrently. The dialog enables users to view changes made by others and decide which changes to keep.

You have administrator privileges in the Administrator Console.

Administrators can enable or disable the conflict warning dialog for each queue separately.

1. Go to the Service Desk *Queue Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
    c. On the **Configuration** panel, click **Queues**.

d. To display the *Queue Detail* page, do one of the following:

- Click the name of a queue.
- Select **Choose Action** > **New**.

2. In the *User Preferences* section, enable or disable the conflict warning:

| Field | Description |
|---|---|
| **Enable ticket conflict warning for ticket owners** | Display a dialog, to administrators and ticket owners, that summarizes conflicts between the changes they are submitting and the changes submitted concurrently by other users. When administrators and ticket owners click **Save** or **Apply Changes** on the *Ticket Detail* page, the dialog appears if other users have edited and saved the ticket while it was open for editing. This enables administrators and ticket owners to choose whether to discard their changes, or overwrite the changes made by other users if there are conflicts.<br>The dialog is displayed only if other users have modified the ticket, and it is displayed to administrators and ticket owners only. The dialog is not displayed to other users.<br>**NOTE:** The dialog summarizes all changes made by other users. However, the current user's changes are summarized only if they conflict with changes made by other users. |

3. Click **Save**.

# View and edit response templates

Response templates allow you to store common responses as comments or resolutions in Service Desk tickets.

Each response template is associated to a specific ticket queue and belongs to the user that created it. You can select the applicable response template on the *Ticket Detail* page.

The template text supports the use of email tokens. Token values are dynamically updated using the field values from the ticket in which they are referenced. You can use the same tokens that are available in email templates. For more information, see Configure email templates.

A response template can be public or private. Private response templates can be updated and referenced in applicable tickets only by the user that created them. A public response template is available for selection in the associated ticket queue by other users, however only the user that created it can edit the contents of the response message. Other users can view the contents of public response templates, but cannot edit them.

1. Go to the Service Desk *Response Templates* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
   c. On the **Configuration** panel, under **Queues**, click **Response Templates**.
   d. To display the *Response Template Detail* page, do one of the following:

   - Click the name of a response template.
   - Select **Choose Action** > **New**.

**NOTE:** Those queue owners who do not have access to the *Queues* configuration pages can access the *Response Templates* page by clicking the *Manage* link that appears just above the *Predefined Response* option in the *Ticket Detail* page.

2. Specify the following settings:

| Field | Description |
|---|---|
| **Name** | The name of the response template. This name appears available for selection in the *Predefined Response* field when you want to configure an automated response to applicable Service Desk tickets. |
| **Make Public** | Select this check box if you want to make this response template available for selection to other users. Other users can view the contents of public response templates, but cannot edit them. |
| **Template** | The contents of the response message. This field supports plain text and tokens. |

3. If you made any changes to the response template, click **Save**.
4. To go back to the Response Templates list, click **Cancel**.

You can use a response template as a predefined response to a Service Desk ticket inquiry. For more information, see Add comments to tickets.

# Configuring ticket settings

Each Service Desk ticket queue has default settings for new tickets, and you can configure those settings and add custom fields as needed.

Typical custom fields include:

- **Problem-related information**: Symptoms, how long the problem has been occurring, or other components that might contribute to the problem.
- **Software-related information**: Manufacturer, version, purpose, and installation date of the software.
- **Service Desk staff-only information**: Information that can be used for diagnosing, reporting, or planning purposes, such as “vendor contact for escalation,” “root cause,” or “previously fixed.”
- **Custom ticket characteristics**: Categories, Statuses, Priorities, and Impacts.

You can add or change these fields at any time, and the number of fields is restricted only by the number of columns that you can have in a database table. However, you cannot remove fields if they are used by tickets. To remove a field that is in use, change the tickets to use a different field, then remove the field.

## Customize the Ticket Detail page

You can customize the *Ticket Detail* page for queues as needed. If you have multiple queues, you can customize the *Ticket Detail* page for each queue separately.

Service Desk has the following configurable ticket settings:

| Setting | Available Values |
|---|---|
| **Category** | • Software<br>• Hardware<br>• Network<br>• Other (default) |
| **Status** | • New (default)<br>• Open<br>• Closed<br>• Need more info |
| **Impact** | • Many people cannot work<br>• Many people inconvenienced<br>• 1 person can't work (default)<br>• 1 person inconvenienced |
| **Priority** | • High<br>• Medium (default)<br>• Low |
| **States** | • Open (default)<br>• Closed<br>• Stalled |

1. Go to the *Service Desk Queue Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
    c. On the **Configuration** panel, click **Queues**.
    d. To display the *Queue Detail* page, do one of the following:
    - Click the name of a queue.
    - Select **Choose Action** > **New**.
2. Add the **All Ticket Owners** label to the *Owner Label* field:
    a. In the *Owner Label* field, click **Manage Associated Labels**.
    b. In the *Select Labels* dialog, drag **All Ticket Owners** to the *Restrict Owners To* field, then click **OK**.

    **For more information about this label, see Add an All Ticket Owners label.**

c. Click **Save**.

3. In the *Ticket Defaults* section, click **Customize These Values** to display the *Queue Customization* page.
4. In the *Category Values* section, click the **Add** button in the column heading to add a category: +.

   **Editable fields appear for the new value.**
5. Specify the following settings:

| Field | Description |
|---|---|
| **Name** | The text that appears in the drop-down list. By default, this text is **Please select a category**: This instructs users to select the category of the ticket. |
| **Default Owner** | Select **DefaultTicketOwners**. |
| **CC List** | Select **none** to prevent the CC List from being displayed on tickets. Because **DefaultTicketOwners** is the default owner, all potential ticket owners receive email notifications when a ticket is created. |
| **User Settable** | Make this category visible to users. When cleared, the appliance allows only the Service Desk staff users to see this category.<br>Use this setting to present a simplified list of values to users and to provide a comprehensive list to your administrators and Service Desk staff. Users might see these categories as their tickets are processed, but they cannot set or change them. |

6. Click **Save**.

**NOTE:** You can add ticket categories at any time. See Create ticket categories and subcategories.

7. For the remaining categories in *Category Values*, click the **Edit** button: ✎.
8. Make the following changes:
   a. In the *Default Owner* column, select **DefaultTicketOwners** to make this user account the default owner of all of these categories.

      **For more information about this account, see Create the DefaultTicketOwners account.**
   b. Remove anything in the **CC List**.
   c. Click **Save**.
9. Create additional status values:
   a. In the *Status Values* section, click the **Add** button: +.

      **The editable fields appear for the new value.**
   b. In the *Name* column, type Waiting on end user, then in the *State* column, select **Stalled**.
   c. Click **Save**.
   d. In the *Status Values* section, click the **Add** button: +.
   e. In the *Name* column, type Waiting on Service Desk Staff, then in the *State* column, select **Stalled**, then click **Save .**
   f. In the *Status Values* section, click the **Add** button: +.
   g. In the *Name* column, type Reopened, then in the *State* column, select **Opened**, then click **Save**.

**NOTE:** Only tickets with an **Opened** state can be escalated. See Using the ticket escalation process.

10. Create a **Critical** priority with an escalation time of 15 minutes:
    a. In the *Priority Values* section, click the **Add** button: +.

**The editable fields appear for the new value.**

b. In the *Name* column, type Critical, then in the *Escalation Time* column, select **15 minutes**.

c. Click **Save**.

11. Change the *Escalation Time* for **High** priority to 1 hour, and select the color you want to use to identify high priority tickets.
12. Click the **Save** button at the bottom of the page.

# Customizing the User Console home page

You can customize the logo, title, welcome message, announcements, and links that appear on the User Console home page to match your company branding, policies, and communication requirements.

## Change the User Console logo and text at the System level

If the Organization component is enabled on your appliance, you can change the title, welcome text, and logo of the User Console at the System level.

The logos selected at the System level are used for every organization unless you configure the organization settings separately at the Admin level. See Change the User Console logo and login text at the Admin-level.

1. Go to the System-level *General Settings* page:
   a. Log in to the appliance System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** from the drop-down list in the top-right corner of the page.
   b. On the left navigation bar, click **Settings**, then click **Control Panel**.
   c. On the *Control Panel*, click **General Settings**.
2. In the User Console section, customize the text in the following fields:

| Option | Description |
|---|---|
| **Title** | The heading that appears on the User Console login page. |
| **Welcome Message** | A welcome note or description of the User Console. This text appears following the title on the User Console login page. |

3. To use custom User Console logo and background color, in the *Login Screen Options* sections, provide the following information.

| Option | Description |
|---|---|
| **User Console Login Background Color** | Click and use the color chooser to specify the color that you want to appear in the background of the User Console login screen. You can select the color using the mouse, or specify the RGB values, as needed. When you close the color chooser, the *HTML Color Code* field on the right displays the HTML code of the selected color. To undo your selection, click **Reset** and start over.<br>**NOTE:** The color chooser is not supported in Internet Explorer 11. |
| **User Console Logo** | In each applicable section, click **Choose File**, and specify the graphic file that you want to use as the custom logo in the User Console.<br>The supported graphic file formats are `.bmp`, `.gif`, `.jpg`, and `.png` |

4. Click **Save and Restart Services**.

**The default Home page and a customized version appear in the following figures.**

**Figure 12. Default logoUser Console Home page**

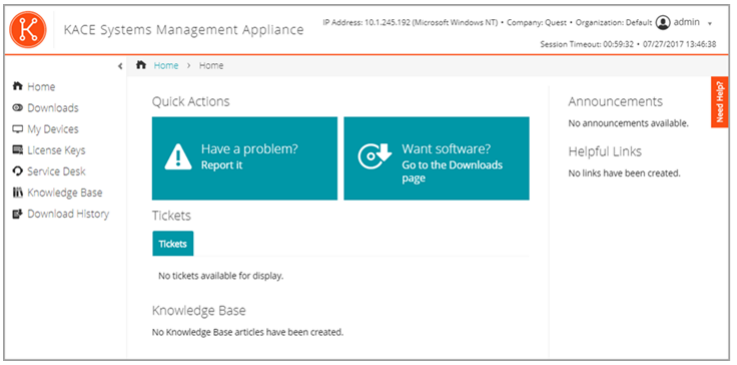



**Figure 13. Custom logo onUser Console Home page**

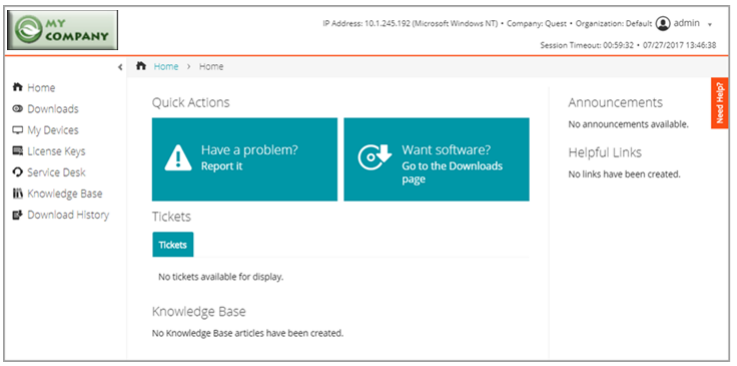



**Figure 14. Default report logo**

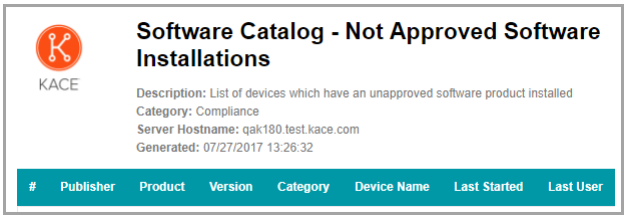
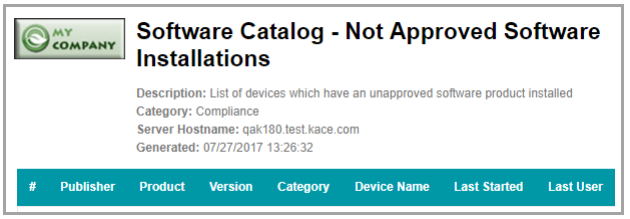



**Figure 15. Custom report logo**




# Change the User Console logo and login text at the Admin-level

You can change the title, welcome text, and logo of the User Console to match your company's branding needs.

If the Organization component is enabled on your appliance, you can specify custom logos at the Admin (organization) level as well as the System level. Admin-level logo settings, however, take precedence over System-level logo settings, which enables you to specify different logos for each organization. If you do not select

a custom logo for an organization, the System-level setting is used. See Change the User Console logo and text at the System level.

1. Go to the Admin-level *General Settings* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`.
    b. On the left navigation bar, click **Settings**, then click **Control Panel**.
    c. On the *Control Panel*, click **General Settings**.
2. In the User Console section, customize the text in the following fields:

> **NOTE:** If the Organization component is enabled on your appliance, these User Console settings are available at the System level. See Change the User Console logo and text at the System level.

| Option | Description |
|---|---|
| **Title** | The heading that appears on the User Console login page. |
| **Welcome Message** | A welcome note or description of the User Console. This text appears following the title on the User Console login page. |

3. To use custom User Console logo and background color, in the *Login Screen Options* sections, provide the following information.

| Option | Description |
|---|---|
| **User Console Login Background Color** | Click and use the color chooser to specify the color that you want to appear in the background of the User Console login screen. You can select the color using the mouse, or specify the RGB values, as needed. When you close the color chooser, the *HTML Color Code* field on the right displays the HTML code of the selected color. To undo your selection, click **Reset** and start over.<br>**NOTE:** The color chooser is not supported in Internet Explorer 11. |
| **User Console Logo** | In each applicable section, click **Choose File**, and specify the graphic file that you want to use as the custom logo in the User Console.<br>The supported graphic file formats are `.bmp`, `.gif`, `.jpg`, and `.png` |

4. Click **Save and Restart Services**.

**The default home page and a customized version appear in the following figures.**

**Figure 16. Default logoUser Console home page**

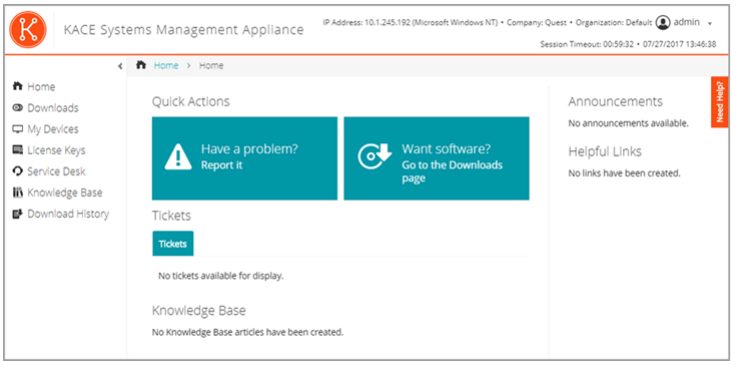



**Figure 17. Custom logo onUser Console home page**

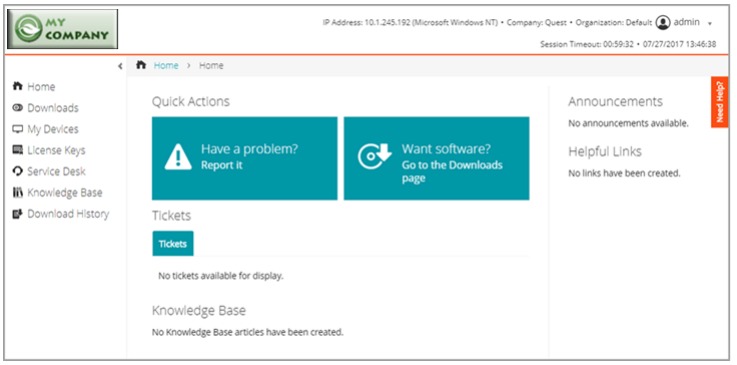



**Figure 18. Default report logo**

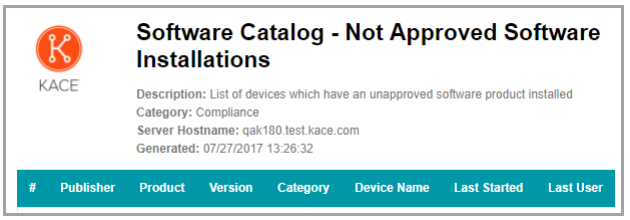
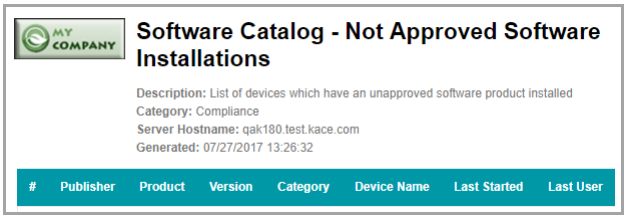



**Figure 19. Custom report logo**




# Show or hide action buttons and widgets on the User Console home page

You can show or hide the action buttons and widgets that appear on the home page of the User Console. Action buttons enable users to quickly access the pages where they can file Service Desk tickets and download software through the User Console. Widgets enable you to add customized links and announcements to the User Console home page.

Action buttons are displayed the User Console for each Service Desk globally, regardless of a user's ticket queue permissions. However, if the Organization component is enabled on your system, you manage action buttons and widgets for each organization's Service Desk separately.

1. Go to the *User Console Home Page Settings* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
    c. On the **Configuration** panel, in the *User Console Home Page* section, click **Configure User Console Home Page**.
2. Select the display options for each item. Select check boxes to show items, clear check boxes to hide items.

| Option | Description |
|---|---|
| **Display Quick Actions**<br>• Ticket Quick Action<br>• Downloads Page Quick Action | Show or hide the quick-action links that appear on the User Console download page. Text for these links includes:<br>• **Ticket Quick Action**: Have a problem? Report it<br>• **Downloads Page Quick Action**: Want software? Go to the Downloads page<br>**NOTE:** The link text cannot be changed. However, if you change the label for Service Desk tickets, that label is used in this link. For example, if you change your Service Desk to use the label **Incident** instead of **Ticket**, the quick-action link becomes *Incident Quick Action*. See Rename Service Desk titles and labels. |
| **Main Panel Widgets**<br>• Tickets Widget<br>• Knowledge Base Widget | Show or hide the widgets for:<br>• **Tickets**: Links to tickets filed by the user and the link, View My Tickets, which takes users to the Tickets list.<br>• **Knowledge Base**: Links to Knowledge Base articles available to the user. |
| **Right Panel Widgets**<br>• Announcements Widget<br>• Helpful Links Widget | Show or hide the widgets for:<br>• **Announcements**: Messages you want to display to the user.<br>• **Helpful links**: HTML links to your corporate intranet, wiki, cloud applications, or any other web resource. |

3. Click **Save**.

   **Quick Actions and widgets are shown or hidden on the User Console home page immediately. If users are logged in and viewing the User Console home page, the link is displayed when the page is refreshed.**

   **NOTE:** Widgets are empty until announcements, links, or Knowledge Base articles are added.

Add announcements, links, and Knowledge Base articles. See:

- Add, edit, hide, or delete User Console announcements
- Add, edit, or delete custom links on the User Console home page
- Add, edit, or duplicate Knowledge Base articles

# Show or hide links to Knowledge Base articles on the User Console home page

You can show or hide links to Knowledge Base articles that appear on the home page of the User Console. In addition, you can use labels to show Knowledge Base articles to, or hide them from, different groups of users.

To manage links to Knowledge Base articles, you must create at least one Knowledge Base article. See Add, edit, or duplicate Knowledge Base articles.

To use labels to show or hide Knowledge Base article links, you must create at least one user label. See Add or edit manual labels.

1. Go to the *User Console Home Page Settings* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General

Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Service Desk**, then click **Configuration**.

c. On the **Configuration** panel, in the *User Console Home Page* section, click **Configure User Console Home Page**.

2. In the *Main Panel Widgets* section, select the check box next to **Knowledge Base Widget**.
3. Click **Save**.

**The setting is saved and the** *Service Desk Configuration* **panel appears.**

4. To control access to Knowledge Base articles, go to the *Article Detail* page and apply user labels to articles:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Knowledge Base**.
   c. To display the *Article Detail* page, do one of the following:
   - Click the name of an article.
   - Select **Choose Action > New**.

   d. In the *Assign to Labels* section, select the label you want to associate with the article, then click **Save**.

**Access to the Knowledge Base article is limited to users with the appropriate label applied.**

5. To enable users to view the article, go to the *Users* list and apply the label to user accounts:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **Users**.
   c. On the *Users* list, select the check boxes next to the users who should be able to view the article.
   d. Select **Choose Action > Apply Labels**.
   e. Drag the label associated with the Knowledge Base article into the *Apply these labels* box, then click **Apply Labels**.

**Users who have the label applied can access the Knowledge Base article.**

# Add, edit, hide, or delete User Console announcements

You can add announcements to be displayed on the User Console home page, and you can edit, hide, or delete existing announcements as needed.

To display announcements, you must configure Service Desk to show the *Announcements* widget. See Customizing the User Console home page.

Announcements are displayed the User Console for each Service Desk globally, regardless of a user's ticket queue permissions. However, if the Organization component is enabled on your system, you manage announcements for each organization's Service Desk separately.

**NOTE:** The first 140 characters of each announcement are displayed on the User Console home page. If announcements exceed 140 characters, a **Show More** link enables users to read the entire announcement.

1. Go to the *User Console Announcements* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Service Desk**, then click **Announcements**.

2. To add an announcement, do the following:
   a. Click **Add Announcement**.
   b. Provide the following information:

| Option | Description |
|---|---|
| **Message Title** | (Required) The title you want to use for the Announcement.<br>**NOTE:** Links cannot be used in the *Message Title* field. |
| **Message Body** | (Optional) Any additional information you want to display, including links. This information appears below the title.<br>When creating links for announcement messages, use any of these formats:<br>• http://example.com<br>• https://example.com<br>• http://www.example.com<br>• www.example.com |
| **Hidden** | (Optional) Whether to show or hide the announcement on the User Console home page. This action is useful when you have messages that you want to show or hide periodically, such as announcements about system status or planned maintenance. Select the check box to hide the announcement. Clear the check box to show the announcement. |
| **Assigned to Labels** | (Optional) The user labels to which the announcement applies. If you select a label, the announcement is displayed to users only if the label is applied to their user account. This action is useful if you want to display announcements to groups of users, such as users located in different geographic locations, and you have created and applied labels for those users. |

   c. Click **Save**.

   **If the Announcements widget is enabled for Service Desk, the Announcement appears on the User Console Home page according to the settings you selected.**

3. To edit an announcement, click **Edit** under the announcement title, then click **Save**.

   **The changes appear on the User Console home page immediately. If users are logged in and viewing the User Console home page, the announcement is deleted when the page is refreshed.**

4. To hide an announcement:
   a. Click **Edit** under the announcement title.
   b. Select the check box next to *Hidden*.
   c. Click **Save**.

   **The announcement is hidden from the User Console home page immediately. If users are logged in and viewing the User Console home page, the announcement is hidden when the page is refreshed.**

5. To change the priority of an announcement, use the drag icon on the left side of the announcement. See Prioritize User Console announcements or mark an announcement as urgent.

   **The announcement is hidden from the User Console home page immediately. If users are logged in and viewing the User Console home page, the announcement is hidden when the page is refreshed.**

6. To delete an announcement, click **Delete** under the announcement title, then click **Yes** in the confirmation window.

**The announcement is removed from the User Console home page immediately. If users are logged in and viewing the User Console home page, the announcement is deleted when the page is refreshed.**

# Prioritize User Console announcements or mark an announcement as urgent

You can set the order in which announcements appear on the User Console home page. In addition, you can display an urgent announcement in a highlighted banner to increase its visibility.

To prioritize announcements, you must configure Service Desk to show the *Announcements* widget and you need to add announcements. See:

- Show or hide action buttons and widgets on the User Console home page
- Add, edit, hide, or delete User Console announcements

1. Go to the *User Console Announcements* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Announcements**.
2. To prioritize announcements, use the drag icon on the left side of the announcement (☰) as follows:
    - To change an announcement's priority, drag it up or down in the list. Announcements are displayed on the User Console home page in the order shown on the *User Console Announcements* page.
    - To set an announcement as urgent, drag it into the *Urgent Announcement* box. The urgent announcement appears in a banner at the top of the User Console home page.

      **NOTE:** Only one announcement can appear in the *Urgent Announcement* banner at a time.
    - To change the urgent announcement, drag a different announcement into the *Urgent Announcement* box.
    - To change an urgent announcement to a regular announcement, drag it out of the *Urgent Announcement* box.

**The announcements are prioritized accordingly on the User Console home page immediately. If users are logged in and viewing the User Console home page, the announcement priority is updated when the page is refreshed.**

# Add, edit, or delete custom links on the User Console home page

You can add custom links to be displayed on the User Console home page, and you can edit or delete existing custom links as needed.

To display custom links, you must configure Service Desk to show the *Helpful Links* widget. See Customizing the User Console home page.

Custom links are displayed the User Console for each Service Desk globally, regardless of a user's ticket queue permissions. However, if the Organization component is enabled on your system, you manage custom links for each organization's Service Desk separately.

1. Go to the *User Console Home Page Links* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General

Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Service Desk**, then click **Configuration**.

c. On the **Configuration** panel, in the *User Console Home Page* section, click **Define Helpful Links**.

2. To add a link:

a. Click +.

b. Provide the following information:

| Option | Description |
|---|---|
| **Title** | The text to display as the link text. You can use the URL itself, or any text string. |
| **URL** | The URL of the link. Acceptable link formats include:<br>• http://example.com<br>• https://example.com<br>• http://www.example.com<br>**NOTE:** You cannot use the same URL in more than one link. |

c. Click **Save** at the right of the *URL* field, then click **Save** at the bottom of the page.

**The link appears on the User Console home page immediately. If users are logged in and viewing the User Console home page, the link is displayed when the page is refreshed.**

3. To edit a link:

a. Click .

b. Change the *Title* or *URL* as needed.

c. Click **Save** at the right of the *URL* field, then click **Save** at the bottom of the page.

**The change appears on the User Console home page immediately. If users are logged in and viewing the User Console home page, the link is displayed when the page is refreshed.**

4. To change the order in which links are displayed on the User Console home page:

a. Drag the link up or down in the list using ≡.

b. Click **Save** at the bottom of the page.

**The change appears on the User Console home page immediately. If users are logged in and viewing the User Console home page, the link order is changed when the page is refreshed.**

5. To delete a link:

a. Click .

b. In the dialog window, click **Yes**.

c. Click **Save** at the right of the *URL* field, then click **Save** at the bottom of the page.

**The link is deleted from the User Console home page immediately. If users are logged in and viewing the User Console home page, the link is deleted when the page is refreshed.**

# Add ticket links to the User Console home page

You can configure Service Desk to automatically add links to a user's tickets on the User Console home page. This link enables users to access ticket details with a single click.

Ticket links appear only if the user has created at least one ticket.

1. Go to the *User Console Home Page Links* page:

a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
c. On the **Configuration** panel, in the *User Console Home Page* section, click **Configure User Console Home Page**.

2. In the *Main Panel Widgets* section, select the check box next to **Tickets Widget**.
3. Click **Save**.

**The setting is saved and the** *Service Desk Configuration* **panel appears. The User Console home page shows tickets filed by the user, and a My Tickets link, which takes users directly to the** *Tickets* **page.**

**NOTE:** If the user has not created any tickets, the *Tickets* widget appears with a note stating that no tickets are available for display.

## Add a quick-action link for reporting problems on the User Console home page

You can add a quick-action link to the *New Ticket* page on the User Console home page. This enables users to access the new ticket form with a single click.

1. Go to the *User Console Home Page Settings* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
   c. On the **Configuration** panel, in the *User Console Home Page* section, click **Configure User Console Home Page**.
2. In the *Display Quick Actions* section, select the check box next to **Ticket Quick Action**.
3. Click **Save**.

**The setting is saved and the** *Service Desk Configuration* **panel appears. The** *Have a problem? Report it* **button appears on the User Console home page. When users click this button, the** *New Ticket* **page appears.**

## About the session timeout period

By default, the appliance automatically logs users out of the Administrator Console or User Console after one hour of inactivity. This is referred to as the **Session Timeout**.

Sessions are restarted at every server interaction, such as reloading the current page, saving changes, or moving to a new page. If the Session Timeout period elapses without any interaction, any unsaved changes are lost, and the login page appears. The Timeout Session counter appears in the upper right of each console.

For instructions on changing the Session Timeout, see:

- Configure appliance General Settings with the Organization component enabled
- Configure appliance General Settings without the Organization component

# Using the Satisfaction Survey

The Satisfaction Survey enables Service Desk ticket submitters to provide feedback on the handling of tickets.

If the Satisfaction Survey is enabled, an email message describing the survey is sent to submitters immediately when a ticket is closed. This email message uses the **Ticket Closed** email template.

By default, the survey is visible to submitters when they access a closed ticket for the first time, and thereafter until the survey is completed. After the survey is completed, it is hidden. Survey scores and comments are stored in the ticket and are not editable by the Service Desk staff.

You can run various reports to display and analyze survey data using Service Desk reports. In addition, you can change the *Ticket Closed* email template that describes the survey, change the survey label, or prevent the survey from being displayed. See:

- Run Service Desk reports
- Configure email templates
- Change the Satisfaction Survey label
- Remove the Satisfaction Survey field from tickets

# Changing the Satisfaction Survey default behavior

The satisfaction survey can be modified by changing the default prompt in the survey box, or it can be removed and not shown to the ticket submitter.

## *Change the Satisfaction Survey label*

The Satisfaction Survey introduction label can be modified to suit your needs.

1. Go to the Service Desk *Queue Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
    c. On the **Configuration** panel, click **Queues**.
    d. Click the name of a queue.
2. At the top of the page, click Customize Fields and Layout to display the *Queue Customization* page.
3. In the *Layout Ticket Fields* section, click the **Edit** button in the *SAT_SURVEY* row: .
4. In the *Label* section, type the new label for the survey box.
5. Click the **Save** button to the right of the item.
6. Click the **Save** button at the bottom of the page.

## *Remove the Satisfaction Survey field from tickets*

You can prevent the Satisfaction Survey from being displayed to ticket submitters.

1. Go to the Service Desk *Queue Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
    c. On the **Configuration** panel, click **Queues**.

d. Click the name of a queue.

2. At the top of the page, click Customize Fields and Layout to display the *Queue Customization* page.
3. In the *Layout Ticket Fields* section, click the **Edit** button in the *SAT_SURVEY* row: .
4. In the *Permissions* section, select **Hidden** in the drop-down list.
5. Click the **Save** button to the right of the item.
6. Click the **Save** button at the bottom of the page.

   **The Satisfaction Survey is disabled, and it is no longer presented to ticket submitters when tickets are closed.**

# Enable or disable security for Service Desk attachments

You can enable or disable security for Service Desk attachments to prevent files from being accessed from outside the Administrator Console or User Console.

By default, security for Service Desk attachments is enabled. Disable this feature if you want users to be able to access ticket attachments through ticket links outside the Administrator Console or User Console. Also, security settings for Service Desk attachments are appliance-level settings. If the Organization component is enabled on your system, the settings you select apply to all organizations.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Security Settings** to display the *Security Settings* page.
3. In the *Secure Attachments in Service Desk* section, choose whether to add security for files that are attached to Service Desk tickets:
   - **Select the check box to enable security for files attached to tickets. If you choose this option, users can access files attached to tickets only from within the appliance Administrator Console or User Console.**
   - **Clear the check box to enable users to access files by clicking ticket links from outside the Administrator Console or User Console.**
4. Click **Save and Restart Services** to save changes and restart the appliance.

# Using the Service Desk Dashboard

The Service Desk Dashboard provides an overview of Service Desk tickets for the selected organization (if applicable), or the appliance.

If the Organization component is enabled on the appliance, and you are logged in to the Administrator Console (`http://`**appliance_hostname**`/admin`), the *Serice Desk Dashboard* shows information for the selected organization. When you are logged in to the System Administration Console (`http://`**appliance_hostname**`/system`), this dashboard shows information for the appliance, including all organizations.

You can access the *Serice Desk Dashboard* if one or more roles associated with your user account grants access to this dashboard. If you want to hide it, edit your user roles, as needed. For more information, see Add or edit User Roles.

**TIP:** The appliance updates the summary widgets periodically. To update most of the widgets any time, click the **Refresh** button in the upper right of the page: . To update most individual widgets, hover over the widget, then click the **Refresh** button above the widget. Some widgets may require additional steps.

# About the Service Desk Dashboard widgets

Service Desk Dashboard widgets provide overviews of Service Desk tickets for the organization or appliance, as selected.

This section describes the widgets available on the *Service Desk Dashboard*. If the Organization component is enabled on your appliance, the widgets show the information for the selected organization at the Admin level and for the appliance at the System level.

This dashboard provides a high-level overview of your device usage. Use it to quickly review the state of your devices and look for any indicators that can improve your ticket management. For example, you can see the numbers of active or overdue tickets per owner.

The title, chart type, and grouping of items in some widgets can be updated. The grouping options vary slightly between these widgets.

| Widget | Description |
|---|---|
| Shortcuts | This widget contains links to common Service Desk actions. Use them to quickly initiate specific tasks, such as creating a new KB (Knowledge Base) article, scheduling a report, and so on. |
| Views | This widget contains links to common Service Desk pages and wizards, including any custom views that you created. Use them to quickly navigate to specific pages, such as *My Recent Tickets*, *All Unassigned Tickets*, and *Tickets Due Today*. It also displays link to custom views, as applicable. The list of custom views is sorted alphabetically. If you want the custom views to appear in a specific order, you can prefix their names with numbers, as needed. |
| Reports | This widget contains links to common Service Desk reports. Use them to quickly generate a specific report, such as *Open Tickets last 7 days by Owner*, *Stalled/Open Tickets by Owner*, and others. |
| Tickets Opened Today | This widget contains the number of Service Desk tickets that were opened today. |
| Active Tickets By Owner<br>Active Tickets By Category<br>Active Tickets By Priority<br>Active Tickets | These widgets display the numbers of active, closed, overdue, overdue today, due, due today, or reopened Service Desk tickets, grouped into any of the following categories:<br>• Category<br>• Priority<br>• Owner<br>• Queue<br>• Range<br>The resulting data can appear in a *Bar Chart* or a *Donut Chart*. |

| Widget | Description |
|---|---|
| Closed Tickets<br>Overdue Tickets<br>Overdue Tickets By Owner<br>Overdue Tickets Today<br>Tickets Due Today<br>Reopened Tickets | To change the widget title, choose how you want to group the tickets, or select the chart type, click  in the widget. In the dialog box that appears, make your edits and click **Save**. |
| Average Ticket Resolution Time | This widget displays the average number of days the ticket resolution takes over that last 30 days, grouped into any of the following categories:<br>• Category<br>• Priority<br>• Owner<br>• Queue<br>• Month<br>The resulting data can appear in a *Bar Chart* or a *Donut Chart*.<br>To change the widget title, choose how you want to group the tickets, or select the chart type, click  in the widget. In the dialog box that appears, make your edits and click **Save**. |
| Tickets Overdue | This widget displays the number of Service Desk tickets that are currently overdue. |

# Customize the Service Desk Dashboard

You can customize the Service Desk Dashboard to show or hide widgets as needed.

These widgets are also all available in the Home dashboard, if they are installed.

1. Go to the *Service Desk Dashboard*.
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Service Desk**, then click **Dashboard**.

2. Hover over the widget, then use any of the following buttons:
   - : Refresh the information in the widget.
   - : Display information about the widget.
   - : Hide the widget.
   - : Resize the widget.
   - : Drag the widget to a different position on the page.
3. The title, chart type, and grouping of items in some widgets can be updated. To do that, click in the widget. In the dialog box that appears, make your edits and click **Save**.
4. Click the **Customize** button in the top-right corner of the page to view available widgets.
5. To show a widget that is currently hidden, click **Install**.

# Managing Service Desk tickets, processes, and reports

You manage Service Desk tickets, processes, and reports using the Administrator Console. Tickets can also be managed using the User Console and through email.

Before you can manage tickets, you must configure the Service Desk. See Setting up Service Desk.

# Overview of Service Desk ticket lifecycle

Service Desk tickets progress through several stages during their lifecycle.

These stages include:

1. The ticket is submitted, either through the User Console, the Administrator Console, or through email. See Creating tickets from the Administrator Console and User Console and Creating and managing tickets by email.
2. The ticket is assigned to an owner according to the ticket rules. See Configuring ticket settings and Using Ticket Rules.
3. The ticket owner reviews the ticket, adjusts the impact if necessary, and assigns a priority.
4. If Service Level Agreements are enabled on the queue where the ticket resides, the ticket due date is calculated based on the priority.
5. If the issue is straightforward, the owner resolves and closes the ticket, and email notifications are sent. See Configuring email settings.
6. If the ticket is complex, the ticket might stay open for a period of time and have multiple owners.
7. If the owner is unable to resolve the ticket within its escalation time limit, the ticket is escalated. See Using the ticket escalation process.
8. When tickets are closed, users can complete a satisfaction survey to provide feedback about the way the ticket was handled. See Using the Satisfaction Survey.
9. The ticket is archived. See Archiving, restoring, and deleting tickets.

# Creating tickets from the Administrator Console and User Console

You can create Service Desk tickets from either the Administrator Console or the User Console.

Tickets can also be created using email. See Creating and managing tickets by email.

## Create tickets from the User Console

You can create Service Desk tickets using the User Console.

When you create tickets from the User Console, your user information is automatically added to the *Submitter* field on the *New Ticket* page.

1. Go to the User Console *New Ticket* page:
    a. Go to the User Console: `http://`**appliance_hostname**`/user` where **appliance_hostname** is the hostname of your appliance.
    b. On the left navigation bar, click **Service Desk**, then click **Tickets**.
    c. To display the *New Ticket* page, do one of the following:
    - Select **New > New Ticket From Queue > Queue name**.

      If you have a high number of queues, use the search box to quickly find a specific queue.
    - Select **New > New Ticket From Queue > Queue name > Ticket Template name**
    - Select **New > New Ticket From Process > Process name**.
2. If you are creating a new ticket from a process, and the process template is configured to display the process description page, review the information on the description page that appears, and click **Continue**.

   **This page typically displays some important pre-requisites that you need to complete before proceeding to create a ticket. For example, if the process template defines how to add a new employee to the system, you can to instruct the users to verify if the employee acquisition process is complete and if the employee ID is created. For more information on how to create and configure process templates, see Add, edit, and enable process templates.**
3. **Queue-based and process tickets only**. Provide the following information:

| Option | Description |
|---|---|
| **Title** | (Required) A brief description of the issue. If the associated Service Desk queue displays this field, a few moments after you stop typing, a list of Knowledge Base articles appears, associated with the information you provide in this field. The suggested articles can help you find out more about the issue you are encountering and to resolve your problem before creating a Service Desk ticket. |
| **Summary** | A more detailed description of the issue.<br>This field includes a full range of text editing options for formatting your content, such as buttons for bold text, hyperlinks, lists, or text color. |

| Option | Description |
|---|---|
| | For example:<br>• To apply bold text to a text string, select it in the editor, and click B.<br>• To add images, click, and provide the URL to the image file, a local file path, or simply drop the image into the indicated area.<br>◦ You can also copy and paste screen shots directly into the text field.<br>◦ Any images you include this way are added as file attachments to the ticket. They are also included in email communication, as applicable.<br>◦ Deleting an image from the text field does not remove the associated file attachment. You can manage file attachments in the *Attachments* section of the ticket page. For more information, see Add or delete screen shots and attachments from Service Desk tickets.<br>• To add external links, click.<br>• To embed externally hosted videos, click. |
| **Submitter** | The login name of the user submitting the ticket. To change the submitter, select a different login name in the drop-down list. |
| **Impact** | The number of people that are inconvenienced or cannot work. |
| **Category** | A classification of the issue. |
| **Attachments** | Files that you want to add to the ticket. You can paste up to five files. See Add or delete screen shots and attachments from Service Desk tickets. |
| **Screenshots** | Screenshots that you want to add to the ticket. You can paste up to five screenshots to a ticket. See Add or delete screen shots and attachments from Service Desk tickets. |

4. **Template-based tickets only.** Provide the information about this ticket. Ticket fields are defined in the associated ticket template.

   **For more information about ticket templates, see Configure a ticket template.**

5. Do one of the following:
   - Click **Save** to save the ticket and return to the *Ticket* list.
   - Click **Apply Changes** to save the ticket and continue editing it.
   - Click **Cancel** to discard the ticket changes.

   **If other users have modified the ticket concurrently, the *Update Notification* dialog appears, provided that the dialog is enabled for the queue and you are the ticket owner or an administrator. This dialog is displayed to administrators and ticket owners only. It is not displayed to other users. Administrators can enable or disable the conflict warning message for each queue separately. See Enable or disable the conflict warning.**

# Create tickets from the Administrator Console Ticket page

You can create Service Desk tickets from the Administrator Console *Ticket* page as needed.

When you create tickets from the Administrator Console *Ticket* page, your user information is automatically added to the *Submitter* field of the *New Ticket* page.

1. Go to the Service Desk *New Ticket* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Tickets**.
    c. To display the *New Ticket* page, do one of the following:

    - Select **Choose Action** > **New**.
    - Select **New** > **New Ticket From Queue** > **Queue name**.

      If you have a high number of queues, use the search box to quickly find a specific queue.
    - Select **New** > **New Ticket From Queue** > **Queue name** > **Ticket Template name**
    - Select **New** > **New Ticket From Process** > **Process name**.

2. If you are creating a new ticket from a process, and the process template is configured to display the process description page, review the information on the description page that appears, and click **Continue**.

   **This page typically displays some important pre-requisites that you need to complete before proceeding to create a ticket. For example, if the process template defines how to add a new employee to the system, you can to instruct the users to verify if the employee acquisition process is complete and if the employee ID is created. For more information on how to create and configure process templates, see Add, edit, and enable process templates.**

3. **Queue-based and process tickets only**. Provide the following information:

| Option | Description |
|---|---|
| **Title** | (Required) A brief description of the issue. |
| **Summary** | A more detailed description of the issue.<br>This field includes a full range of text editing options for formatting your content, such as buttons for bold text, hyperlinks, lists, or text color.<br>For example:<br>• To apply bold text to a text string, select it in the editor, and click B.<br>• To add images, click, and provide the URL to the image file, a local file path, or simply drop the image into the indicated area.<br>◦ You can also copy and paste screen shots directly into the text field.<br>◦ Any images you include this way are added as file attachments to the ticket. They are also included in email communication, as applicable.<br>◦ Deleting an image from the text field does not remove the associated file attachment. You can manage file attachments in the *Attachments* section of the ticket page. For more information, see Add or delete screen shots and attachments from Service Desk tickets.<br>• To add external links, click.<br>• To embed externally hosted videos, click. |
| **Submitter** | The login name of the user submitting the ticket. The submitter can be changed by selecting a different login name in the drop-down list. To view the submitter contact information, click. |

| Option | Description |
|---|---|
| | If you are creating or editing a child ticket from a process template, you also have an option to set this field to the *Parent Owner* or the *Parent Submitter* of the associated parent ticket. |
| **Asset** | The asset that the information in the ticket is about. Select an asset in the drop-down list. To view the asset details, click . |
| **Filter on submitter assigned assets** | Filter the asset list based on the assets that are assigned to the submitter. This check box is selected by default. |
| **Device** | The device that the information in the ticket is about. If any devices are assigned to the ticket submitter, they are listed here, with the submitter's primary device selected by default.<br>Select a device in the drop-down list, as needed. To view the device details, click . |
| **Filter on submitter assigned devices** | Filter the device list based on the devices that are assigned to the submitter. If any devices are assigned to the ticket submitter, this option appears selected by default on this page. However, when you open this ticket on the *Ticket Detail* page, this option is not selected, and the Device field shows the device selected when the ticket was first created. This is default behavior. Leaving this check box cleared prevents you from accidentally selecting a device that may not be related to the issue associated with the ticket. |
| **Impact** | The number of people that are inconvenienced or cannot work. |
| **Category** | A classification of the issue. |
| **Status** | The current state of the ticket. This field does not appear if you are creating or editing a ticket from a process template. |
| **Priority** | The importance of priority of the ticket. |
| **Owner** | The user responsible for managing the ticket through its lifecycle.<br>If you are creating or editing a child ticket from a process template, you also have an option to set this field to the *Parent Owner* or the *Parent Submitter* of the associated parent ticket.<br>**TIP:** To quickly assign a ticket to yourself, on the *Tickets* list page, click in the row containing the ticket. |
| **Due** | Date and time the ticket is scheduled to be completed.<br>If Service Level Agreements are not enabled, the due date is set to None, by default.<br>If Service Level Agreements are enabled, the due date is automatically calculated according to the SLA settings. The due date is calculated based on the priority set when the ticket is submitted. If the priority is changed after the ticket is initially submitted, the calculated due date will be recalculated according to the new priority but based on the original submitted date and time. If the SLA resolution time configuration is changed, it is only applicable on new tickets. Old tickets are not affected. See Configuring Service Level Agreements. |

| Option | Description |
|---|---|
| | Select **Manual Date** to manually set the due date and time. In this case, if Service Level Agreements are enabled, the due date and time is calculated and displayed as an option, but not selected. |
| **CC List** | A list of users who receive a notification email when a ticket event occurs. The CC List is emailed based on the ticket event and **Ticket CC** being configured for the queue **Email on Events** configuration. |
| **Resolution** | The resolution of the issue associated with the ticket.<br>This field includes a full range of text editing options for formatting your content, such as buttons for bold text, hyperlinks, lists, or text color.<br>For example:<br>• To apply bold text to a text string, select it in the editor, and click B.<br>• To add images, click, and provide the URL to the image file, a local file path, or simply drop the image into the indicated area.<br>◦ You can also copy and paste screen shots directly into the text field.<br>◦ Any images you include this way are added as file attachments to the ticket. They are also included in email communication, as applicable.<br>◦ Deleting an image from the text field does not remove the associated file attachment. You can manage file attachments in the *Attachments* section of the ticket page. For more information, see Add or delete screen shots and attachments from Service Desk tickets.<br>• To add external links, click.<br>• To embed externally hosted videos, click. |
| **Predefined Response** | If you want to add an automatic response as a resolution to this ticket, click **Predefined Response** and select a response template.<br>The selected response template appears in the **Resolution** field. You can add multiple response templates as resolution entries. They appear in the order you selected them.<br>**TIP:** To create or edit a response template, save your changes and click **Manage**. This will take you to the *Response Templates* page. For more information about response templates, see View and edit response templates. |
| **Related Ticket Information** | This section does not appear if you are creating a ticket from a process template. |
| **Add Ticket** | Click to add an additional ticket to this ticket's related information. |
| **Referrers** | The **Referrer** is a read-only field that holds a ticket reference to any ticket that references this ticket by way of the **See also** section. |
| **Merged Tickets** | This section allows you to edit the list of tickets merged with this ticket, as applicable. Any tickets that you want to merge must belong to the same queue. When you merge tickets using the *Ticket Detail* page, the open ticket becomes the primary ticket. All other merged tickets are archived when you merge them. For more details, see Merging tickets. |

| Option | Description |
|---|---|
| | To add a merged ticket, click **Add Tickets to Merge/Edit Merged Tickets**, and select a ticket from the list that appears. |
| **Process Information** | This section only appears if you are creating a ticket from a process template. All of the settings appearing in this section are read-only. For complete information about creating and configuring process templates, see Add, edit, and enable process templates. |
| **Process** | The name of the process template associated with this ticket. |
| **Process Type** | The type of the process. In a default installation, only the *Service Desk* and *Software Request: Approval Required* process types are included. You can create new process types, as required. For example, you can create a process type for accessing a specific application, or a group of applications. For more information, see Define process types. |
| **Process Status** | The status of the workflow associated with this process template. For example, *Pending Approval*. |
| **Parent** | The name of the parent ticket, as defined in the process template associated with this ticket. |
| **Process Approvals** | A list of users that are assigned as approvers for this ticket, if applicable.<br>• If all approvals for the ticket are received, this section appears collapsed by default. To review them, click **Expand**.<br>• If one or more approvals are pending for this ticket, this section is displayed. To hide it, click **Collapse**.<br>The approvers are listed in stages, as defined in the process template. Each stage can have one or more approvers, as needed. The settings related to each approver and stage are also listed in this section, such as approval timeouts and notifications. When you create a process ticket, the timeout period starts for the first approver. When that user approves the ticket, the timeout starts for the next one, and so on.<br>If the process template associated with this process indicates that the ticket submitter's manager is an approver for one or more stages, and the logged-on user has a manager's account associated with it, the manager's user name appears in the list.<br>If the logged on user account is not associated with a manager, and the associated process template specifies that the submitter's manager must approve the related process tickets, an error is displayed when you attempt to save the ticket. However, if the submitter's managers is just one of the approvers, the *Process Approvals* section lists the other approvers, and you can save the ticket without any errors being displayed. |
| **Process Activities** | A list of process activities, each representing a child ticket, and listed in stages, as defined in the process template. Multiple tickets can be assigned to the same stage, if needed. For example, if the first stage is to obtain equipment and supplies for a new-hire, you can have several separate child tickets for ordering devices, office equipment, and supplies, all assigned to stage 1. When you create a process ticket, all child tickets assigned to stage 1 are created automatically. Stage 2 tickets are created when all stage 1 tickets are closed, stage 3 tickets are created when all stage 2 tickets are closed, and so on. If any of the approvals times out, none of the child tickets related to that or any subsequent stages are created. |

| Option | Description |
|---|---|
| **Add Ticket** | Click to add an additional ticket to this ticket's related information. |
| **Referrers** | The **Referrer** is a read-only field that holds a ticket reference to any ticket that references this ticket by way of the **See also** section. |
| **Comments** | Comments that you want to add to the ticket. You can also add file attachments, screenshots, provide automatic responses or Knowledge Base article contents as ticket comments. For more information see:<br>• Add comments to tickets<br>• Add or delete screen shots and attachments from Service Desk tickets<br>If you want to add an automatic response as a resolution to this ticket, click **Predefined Response** and select a response template.<br>The selected response template appears in the **Resolution** field. You can add multiple response templates as resolution entries. They appear in the order you selected them.<br>**TIP:** To create or edit a response template, save your changes and click **Manage**. This will take you to the *Response Templates* page. For more information about response templates, see View and edit response templates. |
| **Knowledge Base Article** | Look up a Knowledge Base article and append its contents to the ticket comments. For more information about Knowledge Base articles, see Managing Knowledge Base articles. |

4. **Template-based tickets only.** Provide the information about this ticket. Ticket fields are defined in the associated ticket template.

   **For more information about ticket templates, see Configure a ticket template.**

5. Do one of the following:
   - Click **Save** to save the ticket and return to the *Ticket* list.
   - Click **Apply Changes** to save the ticket and continue editing it.
   - Click **Cancel** to discard the ticket changes.

   **If other users have modified the ticket concurrently, the *Update Notification* dialog appears, provided that the dialog is enabled for the queue and you are the ticket owner or an administrator. This dialog is displayed to administrators and ticket owners only. It is not displayed to other users. Administrators can enable or disable the conflict warning message for each queue separately. See Enable or disable the conflict warning.**

6. Review any changes reported in the *Update Notification* dialog:

| Option | Description |
|---|---|
| **Their Change(s)** | A summary of the changes that were submitted by other users during the time that you were editing the ticket. |
| **Your Change(s)** | A summary of the changes you are submitting for the same fields listed in the *Their Changes* column. These changes might conflict with the changes submitted by other users. |

| Option | Description |
|---|---|
| | **NOTE:** The dialog summarizes all changes made by other users. However, your changes are summarized only if they conflict with changes made by other users. Also, if a different user has modified a field, such as *Category* and you have not modified that field, the change appears in the *Modified!* section. The *Your Changes* column displays - -, which indicates that you have not modified the content, and the other user's changes will be preserved. |
| **Conflict!** | Changes that are contradictory. For example, if you changed the ticket *Category* to **Software**, and a different user changed the *Category* to **Network**, the changes would be summarized in the *Conflict!* section. |
| **Modified!** | A summary of the changes that do not conflict. For example, if you added information to the ticket *Summary* and a different user changed the **Impact**, each of the changes would be summarized in the *Modified!* section. |

7. Do one of the following:
   - Click **Save** to save the ticket and return to the *Ticket* list.
   - Click **Apply Changes** to save the ticket and continue editing it.
   - Click **Cancel** to discard the ticket changes.

   **If other users have modified the ticket concurrently, the** *Update Notification* **dialog appears, provided that the dialog is enabled for the queue and you are the ticket owner or an administrator. This dialog is displayed to administrators and ticket owners only. It is not displayed to other users. Administrators can enable or disable the conflict warning message for each queue separately. See Enable or disable the conflict warning.**
8. Review any changes reported in the *Update Notification* dialog:

| Option | Description |
|---|---|
| **Their Change(s)** | A summary of the changes that were submitted by other users during the time that you were editing the ticket. |
| **Your Change(s)** | A summary of the changes you are submitting for the same fields listed in the *Their Changes* column. These changes might conflict with the changes submitted by other users. |

| Option | Description |
|---|---|
| | **NOTE:** The dialog summarizes all changes made by other users. However, your changes are summarized only if they conflict with changes made by other users. Also, if a different user has modified a field, such as *Category* and you have not modified that field, the change appears in the *Modified!* section. The *Your Changes* column displays - -, which indicates that you have not modified the content, and the other user's changes will be preserved. |
| **Conflict!** | Changes that are contradictory. For example, if you changed the ticket *Category* to **Software**, and a different user changed the *Category* to **Network**, the changes would be summarized in the *Conflict!* section. |
| **Modified!** | A summary of the changes that do not conflict. For example, if you added information to the ticket *Summary* and a different user changed the **Impact**, each of the changes would be summarized in the *Modified!* section. |

9. In the *Update Notification* dialog box, do one of the following:
   - Click **Keep Your Changes** to save changes you have made. This option appears when your changes do not conflict with the changes made by other users.

     **NOTE:** If a different user has modified a field, such as *Category* and you have not modified that field, the change appears in the *Modified!* section. The *Your Changes* column displays - -, which indicates that you have not modified the content, and the other user's changes will be preserved.
   - Click **Overwrite Conflicts** to save changes you have made to the ticket. For any changes marked as **Conflict!**, your changes overwrite the changes made by other users.
   - Click **Cancel** to return to the *Ticket Detail* page and continue editing the ticket.

# Create tickets from the Device Detail page

You can create Service Desk tickets for devices from the *Device Detail* page as needed.

When you create Service Desk tickets from the *Device Detail* page, user and device information is automatically added to the ticket.

1. Go to the *Device Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Inventory**, then click **Dashboard**.

c. Click the name of a device.

2. In the *Activities* section, click **Service Desk Tickets** to display a table showing tickets related to the device.
3. Click **New** to display the *New* page.
   - If you want to create a ticket based on a queue, if there are multiple ticket queues in the organization, select a queue from the **Ticket** drop-down list.
   - If you want to create a ticket based on a process template, select the process from the **Process** drop-down list.

   **The** *Ticket Detail* **page appears.**
4. Provide the required information. See Create tickets from the Administrator Console Ticket page for a description of the ticket fields.
5. Do one of the following:
   - Click **Save** to save the ticket and return to the *Ticket* list.
   - Click **Apply Changes** to save the ticket and continue editing it.
   - Click **Cancel** to discard the ticket changes.

   **If other users have modified the ticket concurrently, the** *Update Notification* **dialog appears, provided that the dialog is enabled for the queue and you are the ticket owner or an administrator. This dialog is displayed to administrators and ticket owners only. It is not displayed to other users. Administrators can enable or disable the conflict warning message for each queue separately. See Enable or disable the conflict warning.**

# Create tickets from the Asset Detail page

You can create Service Desk tickets for assets from the *Asset Detail* page as needed.

When you create Service Desk tickets from the *Asset Detail* page, user and asset information is automatically added to the ticket.

1. Go to the *Asset Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Asset Management**, then click **Assets**.
   c. Click the name of an asset.

   **In the Service Desk Tickets section, a table is displayed showing tickets related to the asset.**
2. Click **New** to display the *New* page.
   - If you want to create a ticket based on a queue, if there are multiple ticket queues in the organization, select a queue from the **Ticket** drop-down list.
   - If you want to create a ticket based on a process template, select the process from the **Process** drop-down list.

   **The** *Ticket Detail* **page appears.**
3. Provide the required information. See Create tickets from the Administrator Console Ticket page for a description of the ticket fields.
4. Do one of the following:
   - Click **Save** to save the ticket and return to the *Ticket* list.
   - Click **Apply Changes** to save the ticket and continue editing it.
   - Click **Cancel** to discard the ticket changes.

   **If other users have modified the ticket concurrently, the** *Update Notification* **dialog appears, provided that the dialog is enabled for the queue and you are the ticket owner or an administrator. This**

**dialog is displayed to administrators and ticket owners only. It is not displayed to other users. Administrators can enable or disable the conflict warning message for each queue separately. See Enable or disable the conflict warning.**

# Create a Service Desk ticket from an alert

You can create a Service Desk ticket from a server monitoring alert, with information from the alert automatically populating fields in the ticket form.

1. Go to the *Monitoring Alerts* list in one of the following ways:
   - **If you have the** *Monitoring Alerts* **widget installed on your open** *Dashboard***, click Monitoring Alerts.**
   - **In the left navigation bar, select Monitoring > Alerts.**
2. Select the check box for the row that contains the alert message, then select **Choose Action > New Ticket**.
   - If you want to create a ticket based on a queue, if there are multiple ticket queues in the organization, select a queue from the **Ticket** drop-down list.
   - If you want to create a ticket based on a process template, select the process from the **Process** drop-down list.

   **The** *Title***,** *Summary***,** *Submitter***, and** *Device* **fields contain information from the alert.**
3. **Optional**: Change the *Title* and *Summary* to conform to your corporate procedures.
4. Provide the rest of the information needed to complete the form, then click **Save** to save the ticket and leave the *Ticket Detail* page, or **Apply Changes** to save the ticket and continue editing it.

| Option | Description |
|---|---|
| **Title** | (Required) A brief description of the issue. You can replace the monitoring-provided title with one of your choosing. |
| **Summary** | A more detailed description of the issue.<br>This field includes a full range of text editing options for formatting your content, such as buttons for bold text, hyperlinks, lists, or text color.<br>For example:<br>• To apply bold text to a text string, select it in the editor, and click B.<br>• To add images, click, and provide the URL to the image file, a local file path, or simply drop the image into the indicated area.<br>◦ You can also copy and paste screen shots directly into the text field.<br>◦ Any images you include this way are added as file attachments to the ticket. They are also included in email communication, as applicable.<br>◦ Deleting an image from the text field does not remove the associated file attachment. You can manage file attachments in the *Attachments* section of the ticket page. For more information, see Add or delete screen shots and attachments from Service Desk tickets.<br>• To add external links, click.<br>• To embed externally hosted videos, click. |
| **Submitter** | The login name of the user submitting the ticket. The submitter can be changed by selecting a different login name in the drop-down list. Click to view the submitter contact information. |

| Option | Description |
|---|---|
| **Asset** | The asset that the information in the ticket is about. Select an asset in the drop-down list. Click to view the asset details. |
| **Filter on submitter assigned assets** | Filter the asset list based on the assets that are assigned to the submitter. |
| **Device** | The device that the information in the ticket is about. Monitoring provides this information. Click to view the device details. |
| **Filter on submitter assigned devices** | Filter the asset list based on the devices that are assigned to the submitter. |
| **Impact** | The number of people that are inconvenienced or cannot work. |
| **Category** | A classification of the issue. |
| **Status** | The current state of the ticket. This field does not appear if you are creating or editing a ticket from a process template. |
| **Priority** | The importance of priority of the ticket. |
| **Owner** | The user responsible for managing the ticket through its lifecycle. |
| **Due** | Date and time the ticket is scheduled to be completed.<br>If Service Level Agreements are not enabled, the due date is set to None, by default.<br>If Service Level Agreements are enabled, the due date is automatically calculated according to the SLA settings. The due date is calculated based on the priority set when the ticket is submitted. If the priority is changed after the ticket is initially submitted, the due date will be recalculated according to the new priority, but based on the original submitted date and time. If the SLA resolution time configuration is changed, it is only applicable on new tickets. Old tickets are not affected. See Configuring Service Level Agreements.<br>Select **Manual Date** to manually set the due date and time. In this case, if Service Level Agreements are enabled, the due date and time is calculated and displayed as an option, but not selected. |
| **CC List** | A list of users who receive a notification email when a ticket event occurs. The CC List is emailed based on the ticket event and **Ticket CC** being configured for the queue **Email on Events** configuration. |
| **Resolution** | The resolution of the issue associated with the ticket.<br>This field includes a full range of text editing options for formatting your content, such as buttons for bold text, hyperlinks, lists, or text color. |

| Option | Description |
|---|---|
| | For example:<br>• To apply bold text to a text string, select it in the editor, and click B.<br>• To add images, click , and provide the URL to the image file, a local file path, or simply drop the image into the indicated area.<br>◦ You can also copy and paste screen shots directly into the text field.<br>◦ Any images you include this way are added as file attachments to the ticket. They are also included in email communication, as applicable.<br>◦ Deleting an image from the text field does not remove the associated file attachment. You can manage file attachments in the *Attachments* section of the ticket page. For more information, see Add or delete screen shots and attachments from Service Desk tickets.<br>• To add external links, click .<br>• To embed externally hosted videos, click . |
| **Related Ticket Information** | This section does not appear if you are creating a ticket from a process template. |
| **Add Ticket** | Click to add an additional ticket to this ticket's related information. |
| **Referrers** | The **Referrer** is a read-only field that holds a ticket reference to any ticket that references this ticket by way of the **See also** section. |
| **Merged Tickets** | This section allows you to edit the list of tickets merged with this ticket, as applicable. Any tickets that you want to merge must belong to the same queue. When you merge tickets using the *Ticket Detail* page, the open ticket becomes the primary ticket. All other merged tickets are archived when you merge them. For more details, see Merging tickets.<br>To add a merged ticket, click **Add Tickets to Merge/Edit Merged Tickets**, and select a ticket from the list that appears. |
| **Process Information** | This section only appears if you are creating a ticket from a process template. All of the settings appearing in this section are read-only. For complete information about creating and configuring process templates, see Add, edit, and enable process templates |
| **Process** | The name of the process template associated with this ticket. |
| **Process Type** | The type of the process. |
| **Process Status** | The status of the workflow associated with this process template. For example, *Pending Approval*. |
| **Parent** | The name of the parent ticket, as defined in the process template associated with this ticket. |
| **Process Approvals** | A list of users that are assigned as approvers for this ticket, if applicable. The approvers are listed in stages, as defined in the process template. Each stage can have one or more approvers, as needed. The settings related to each approver and stage are also listed in this section, such as approval timeouts and notifications. |

| Option | Description |
|---|---|
| | When you create a process ticket, the timeout period starts for the first approver. When that user approves the ticket, the timeout starts for the next one, and so on. |
| **Process Activities** | A list of process activities, each representing a child ticket, and listed in stages, as defined in the process template. Multiple tickets can be assigned to the same stage, if needed. For example, if the first stage is to obtain equipment and supplies for a new-hire, you can have several separate child tickets for ordering devices, office equipment, and supplies, all assigned to stage 1. When you create a process ticket, all child tickets assigned to stage 1 are created automatically. Stage 2 tickets are created when all stage 1 tickets are closed, stage 3 tickets are created when all stage 2 tickets are closed, and so on. |
| **Add Ticket** | Click to add an additional ticket to this ticket's related information. |
| **Referrers** | The **Referrer** is a read-only field that holds a ticket reference to any ticket that references this ticket by way of the **See also** section. |
| **Comments** | Comments that you want to add to the ticket. You can also add file attachments, screenshots, provide automatic responses or Knowledge Base article contents as ticket comments. For more information see:<br>• Add comments to tickets<br>• Add or delete screen shots and attachments from Service Desk tickets<br>If you want to add an automatic response as a resolution to this ticket, click **Predefined Response** and select a response template.<br>The selected response template appears in the **Resolution** field. You can add multiple response templates as resolution entries. They appear in the order you selected them.<br>**TIP:** To create or edit a response template, save your changes and click **Manage**. This will take you to the *Response Templates* page. For more information about response templates, see View and edit response templates. |
| **Knowledge Base Article** | Look up a Knowledge Base article and append its contents to the ticket comments. For more information about Knowledge Base articles, see Managing Knowledge Base articles. |

**Related topics**

Managing Service Desk tickets, processes, and reports

# Creating and managing tickets by email

You can enable users to create and manage tickets by email. This is useful for users who do not have access to the appliance Administrator Console or User Console.

## About attachments to tickets created through email

Users can attach files to Service Desk tickets submitted through email, and those attached files can be up to 8 MB in size.

If attachments exceed 8 MB in size, email messages are rejected. No error messages are displayed to users.

If the appliance detects any threats in a file attachment included with Service Desk tickets, access to the file is blocked and can be managed on the *Antivirus Quarantine* page. For details, see Manage quarantined file attachments.

# Enable email ticket creation

You can enable users to create and manage Service Desk tickets using email.

1. Go to the Service Desk *Ticket Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
    c. On the **Configuration** panel, click **Queues**.
    d. Click the name of a queue.
2. Set up a valid email account, such as Support@mydomain.com, where users can send email to create tickets.
3. Add the email address to the *Alternate Email Address* field.
4. Select the **Allow all users as submitters** check box.
5. Select the **Accept email from unknown users** check box.

    If **Accept email from unknown users** is enabled in the queue configuration, any email sent to the Service Desk queue to create a ticket is allowed to set the *Submitter* field. In this case the username must be passed in the **@submitter** token and is that of an existing user, or is the current email address if it is an unknown user.

    If **Accept email from unknown users** is disabled, the preceding process works only when the email address of the sender is already associated with a Service Desk user account.
6. Click **Save**.

Tickets created from email messages receive the default values for Impact, Category, and Priority as configured on the *Queue Detail* page. The body of the email message is added as a comment. The *Submitter* field is derived from the sender's email address.

# Create a ticket by email

You can quickly create a ticket by email when you specify the name of the ticket template in the email subject line.

Any replies made to the original email thread used to create a ticket, or to the emails sent from Service Desk associated with the ticket, appear on the ticket's *Comments* tab. For more information, see View ticket comments.

1. Log in to your email account and create a new email message.
2. In the email subject line, specify the ticket template name enclosed in braces. For example: `{Printer Issues}`.

    **If you do not specify the ticket template, the appliance uses the default ticket template associated with the queue.**
3. Describe your issue in the email message, and send it to the email address associated with the queue the specified ticket template belongs to.

    **For details on how to configure queue email settings, see Configure queue-specific email settings.**
4. When you receive an email confirmation from Service Desk, click the link in the email to review the ticket contents.

    **The *Ticket Details* page appears, displaying the newly created ticket.**
5. Make any changes, as required.

**For more information about editing the ticket page, see Create tickets from the Administrator Console Ticket page.**

# Modifying ticket attributes using email

You can change ticket attributes by email using variables that contain the **@** symbol at the beginning of email messages.

Any text after the last email variable is added to the ticket *Comment* field.

For example, the following email text closes the ticket, changes the ticket owner, and adds a comment:

```
@status=closed
@owner=joe
I fixed that problem. If it happens again, talk to Joe.
```

Invalid fields and field values produce errors that are emailed back to the sender using the email error template. For more information on email templates, see Configuring email triggers and email templates.

# Clearing a ticket field using email

You can clear any field by sending an email with the prescribed syntax.

The syntax takes the form @fieldname=. For example, the following entry clears the *Due Date* field:

```
@due_date=
```

# Changing ticket fields using email

You can change the following ticket attributes using email messages if the value of the ticket field is set to *User Modify*.

For information on changing ticket field permissions, see Using ticket approvers.

| Field | Description |
|---|---|
| **@category** | A valid category. |
| **@cc_list** | A comma-separated list of email addresses or distribution lists. |
| **@due_date** | A due date. The date can be in any format. For example, 4/3/2014, April 3, 2014, or next Thursday. |
| **@impact** | A valid ticket impact. |
| **@owner** | The owner's username, full name, or email address. |
| **@priority** | A valid ticket priority. |
| **@resolution** | A resolution. |
| **@status** | A valid ticket status. |
| **@submitter** | The submitter's username, full name, or email address. The email address is used for the username and email address fields. The full name is set to the *Name* portion of the email address. For example, **name**@domain.com. |

| Field | Description |
|---|---|
| **@title** | A title for the ticket. |
| **@summary** | A detailed description of the issue. |
| **@asset** | The asset associated with the ticket. |
| **@machine** | The device associated with the ticket. |
| **@approval** | The state of the ticket approval process. You can set this field to one of the following values: `Approved`, `Rejected`, `None`, or `More Information Needed`. |
| **@approval_note** | A note associated with the approval. |
| **@owners_only** | Indicates if only owners can comment on the ticket through email. When set to `1`, the flag is `True`. Any other numeric value sets this indicator to `False`. |
| **@custom_<number>** | The value of a custom ticket field, where `<number>` is the custom field ID. For example, `$custom_2=ABC` assigns the value of `ABC` to the `CUSTOM_2` ticket field. |

# Changing ticket approval fields using email

Users who are designated as ticket approvers can change a number of approval fields using email messages.

Approvers can change the following approval fields:

| Field | Description |
|---|---|
| **@approval** | Modify the ticket. Use one of the following: **Approved**, **Rejected**, **None**, or **More Information Needed**. |
| **@approver** | Change the ticket approver. Enter a username from the ticket approval label. For instructions on setting up the label of approvers, see Using ticket approvers. |
| **@approval_note** | Enter a comment. |

## *Setting or changing custom fields using email*

You can set custom fields for Service Desk tickets through email using the prescribed syntax.

The syntax takes the form @custom_fieldname=newvalue.

Custom fields cannot contain spaces. Use an underscore between words. For example, new_value.

You can also use:

- @priority = high
- @priority = very_urgent

For multiselect custom fields, use a comma-separated list of values. Invalid values in select or multiselect custom fields produce errors.

# Viewing tickets and managing comments, work, and attachments

You can navigate among tickets, and the devices and assets that are related to tickets, using links on detail pages. In addition, you can add work information, comments, and attachments, such as screenshots, to tickets.

On ticket detail pages, the related devices and assets are listed and linked for quick access. Similarly, you can access related tickets from device and asset detail pages. In addition, you can view and create tickets from device and asset detail pages.

## Navigate among tickets, related devices, and assets

Links on ticket detail pages enable you to navigate among related Service Desk tickets and related devices and assets.

1. Go to the Service Desk *Ticket Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Tickets**.
    c. Click the title of a ticket.
2. View tickets by submitter, asset, or device.
    - **Click the Submitter Ticket History.**
    - **Click the Asset Ticket History.**
    - **Click the Device Ticket History.**

    **A new window displays all tickets for the asset with the ticket number, title, and status for each ticket.**

    To view the ticket details, click the link in the *Number* or *Title* column to display the *Ticket Detail* page.
3. View related tickets in the *Related Ticket Information* section.
    - **Click a ticket referenced as** *See Also***.**
    - **Click a ticket referenced as a** *Referrer***.**
    - **Click a ticket referenced as a** *Merged Ticket***.**
    - **Click a ticket referenced as a** *Child Ticket***.**
    - **Click a ticket referenced as a** *Parent Ticket***.**

    **The** *Ticket Detail* **window displays for the selected ticket.**

## Add work information for tickets

You can add work information to Service Desk tickets, such as the date the work started or stopped, the total number of hours spent on the ticket, and notes about the work performed. This information is available to ticket submitters and owners.

1. Go to the Service Desk *Ticket Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Service Desk**, then click **Tickets**.
c. Click the title of a ticket.

2. Select the **Work** tab at the bottom of the page.
3. Click **Add**.
4. Provide the following information:

| Option | Description |
|---|---|
| **Date** | The date work begins. To change the date, click in the date field and select a different date. To remove the date, click **Clear**. |
| **Start** | The time work begins (24-hour clock format). |
| **End** | The time work ends (24-hour clock format). |
| **Adjustment** | The amount of time to add or subtract to the hours logged. This can be useful for billing and tracking purposes. For example, work on a ticket might start at 08:00 and end at 12:00. However, the actual time an administrator spent working on the ticket might be 2 hours. You could enter -2.0 in this field to accurately report the actual time spent. |
| **Note** | Any additional information you want to provide. |

5. Click **Add Work**.

# Use default views for tickets

There are several built-in system views you can use to restrict the tickets displayed on the *Tickets* page.

1. Go to the Service Desk *Tickets* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Tickets**.

   **The *Tickets* page shows tickets in the default queue.**
2. To limit the tickets shown in the queue, select a view from the **View By** drop-down list.

**The available built-in views are:**

| Group | View |
|---|---|
| **My Tickets** | All My Tickets<br>**NOTE:** This includes any tickets submitted by me or owned by me, or any tickets where I am the approver.<br>My Active Tickets<br>**NOTE:** This includes any tickets submitted by me or assigned to me with 'Opened' or 'Stalled' states.<br>My Tickets Submitted Today<br>My Tickets Due Today<br>My Overdue Tickets<br>My Recent Tickets |

| Group | View |
|---|---|
| **My Tickets by State** | My Opened State Tickets<br>My Stalled State Tickets<br>My Closed State Tickets<br>My Not Closed State Tickets |
| **My Tickets by Status** | **NOTE:** This option is only displayed when viewing a specific queue.<br>My New Tickets<br>My Opened Tickets<br>My Closed Tickets<br>My Need More Info Tickets |
| **All Tickets** | All Tickets<br>All Active Unassigned Tickets<br>**NOTE:** This includes any tickets with no owner and with a state of opened or stalled. This is only available if the user logged in is an owner of the selected queue.<br>All Tickets Submitted Today<br>All Tickets Due Today<br>All Overdue Tickets |
| **All Tickets by State** | All Opened State Tickets<br>All Stalled State Tickets<br>All Closed State Tickets<br>All Not Closed State Tickets |
| **All Tickets by Status** | **NOTE:** This option is only displayed when viewing a specific queue.<br>All New Tickets<br>All Opened Tickets<br>All Closed Tickets<br>All Need More Info Tickets |
| **My Employee Tickets By State** | **NOTE:** This option is only displayed when:<br>• Your user account has a manager role, and one or more employee account associated with it.<br>• You are using the User Console.<br>**NOTE:** Administrators can turn off this feature on the *Queue Settings* page.<br>My Employee Tickets: Opened<br>My Employee Tickets: Stalled<br>My Employee Tickets: Closed<br>My Employee Tickets: Not Closed |

| Group | View |
|---|---|
| **Submitter Label** | <submitter label> |
| **Custom View** | List of available custom views.<br>**NOTE:** This option is only displayed if there are any custom views created by the logged in user. |

Set the custom view as the default. See Set a view as the default view for tickets.

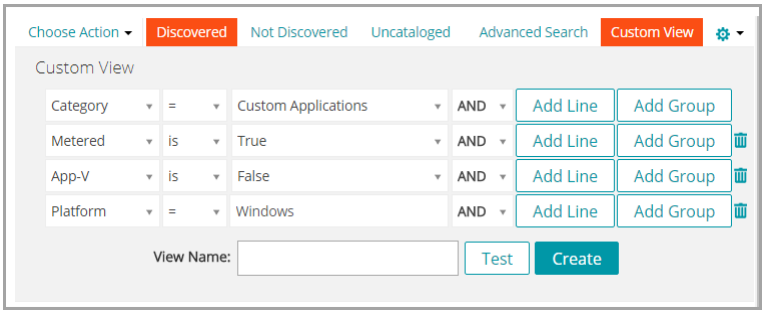
# Create custom views for tickets

You create custom views to restrict the type or number of Service Desk tickets displayed on the *Tickets* page. This enables you to see only those tickets that you want to view.

**NOTE:** Custom views are available only to the user accounts in which they are created. They are not available to multiple user accounts. To enable other users to access a custom view you created, send them the URL of the custom view.

1. Go to the Service Desk *Tickets* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Tickets**.
2. Select the **Custom View** tab above the list on the right.

    **The *Custom View* panel appears.**




3. Specify the criteria to use for the custom view. For example, you could create a custom view that shows open tickets with the priority of High.
4. Click **Test** to confirm the results.
5. Click **Create** to save the custom view.

Set the custom view as the default. See Set a view as the default view for tickets.

# Set a view as the default view for tickets

You can set a view as the default view for the Service Desk *Tickets* page. The default view is user-specific, and must be configured for each user independently.

1. Go to the Service Desk *Tickets* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Service Desk**, then click **Tickets**.

2. **Optional**: Click the **Custom View** tab above the list on the right and choose the settings for the custom view. See Create custom views for tickets .
3. Select **Choose Action > Set Default View > Set Current View As Default**.

   **The current view is saved as the logged-in user's default view for the *Tickets* list.**

# Add comments to tickets

As a ticket is worked on, comments can be added to provide further information to the ticket.

1. Go to the Service Desk *Ticket Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Tickets**.
   c. Click the title of a ticket.
2. Click the **Comments** tab at the bottom of the ticket detail page, if it is not already selected.
3. Enter the comment in the **Comment** text box.

   This field includes a full range of text editing options for formatting your content, such as buttons for bold text, hyperlinks, lists, or text color.

   For example:

   - To apply bold text to a text string, select it in the editor, and click B.
   - To add images, click , and provide the URL to the image file, a local file path, or simply drop the image into the indicated area.
     - You can also copy and paste screen shots directly into the text field.
     - Any images you include this way are added as file attachments to the ticket. They are also included in email communication, as applicable.
     - Deleting an image from the text field does not remove the associated file attachment. You can manage file attachments in the *Attachments* section of the ticket page. For more information, see Add or delete screen shots and attachments from Service Desk tickets.
   - To add external links, click .
   - To embed externally hosted videos, click .
4. Select the **Owners-only** check box to designate the comment be hidden from non-owners, such as submitters, and visible only to ticket owners.
5. If you want to add an attachment to the ticket, click **Add Attachment** and select the file to attach.

   **You can add up to five file attachments to a ticket. For more information, see Add or delete screen shots and attachments from Service Desk tickets**

6. If you want to add a screenshot to the ticket, click **Paste Screenshot** and paste the screenshot into the dialog box that appears.

   **You can add up to five screenshots to a ticket. For more information, see Add or delete screen shots and attachments from Service Desk tickets**

7. If you want to add an automatic response as a comment to this ticket, click **Predefined Response** and select a response template.

   **The selected response template appears in the Comments field. You can add multiple response templates as comments. They appear in the order you selected them.**

**TIP:** To create or edit a response template, save your changes and click **Manage**. This will take you to the *Response Templates* page.

**For more information about response templates, see View and edit response templates.**

8. If you want to add the contents of a Knowledge Base article as a comment to this ticket, click **Knowledge Base Article** and select an applicable topic.

   **The selected article contents appear in the Comments field.**

   **For more information about Knowledge Base articles, see Managing Knowledge Base articles.**

9. If you are viewing a ticket for which you already provided comments, and you want to edit your own comments, you can do that, if the queue associated with the ticket is configured to allow users to edit their comments. For information on how to configure queue preferences, see Configure ticket queues.
10. If you are viewing a ticket that you submitted, and you want to edit other users' comments, you can do that, if the queue associated with the ticket is configured to allow technicians to edit the comments submitted by other users. For information on how to configure queue preferences, see Configure ticket queues.
11. If your account has a manager role, the queue associated with the ticket is configured to allow managers to edit comments to employee tickets, and you are viewing a ticket submitted by your employee, you can add or edit the comments, add file attachments or screen shots to the ticket, as needed. For information on how to configure queue preferences, see Configure ticket queues.
12. If there is a related Knowledge Base article to append to the ticket comments, select an article from the drop-down list. You can enter a search word to find a specific article.
13. Click **Submit** to save the newly added comment.

**NOTE:** Comments are saved independently of all other ticket information. If Email notifications based on comments are enabled, the subscribed users will receive the email instantly for the comment added. When users respond to an email notification that is sent regarding an existing ticket, only the new text that users type above the reply line will be added as a comment.

# Add owner-only comments to tickets

You can add ticket comments that are hidden from non-owners, such as submitters, and visible only to ticket owners.

When adding owner-only comments, however, be aware that other ticket owners have permission to change this setting. Owner-only comments become viewable to other users when the setting is changed.

Quest recommends these best practices for owner-only comments:

- Always use discretion when adding comments.
- Have a clear, well documented policy for changing the *Owners only* setting.

1. Go to the Service Desk *Ticket Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Tickets**.
   c. Click the title of a ticket.
2. Click the **Comments** tab at the bottom of the ticket detail page, if it is not already selected.
3. Select the **Owners only** check box, then add the comment, Knowledge Base article reference, or attachment.

**NOTE:** The **Owners only** check box can be enabled by default by selecting the **Default ticket owner comments to Owners Only visibility** check box on the queue detail page. See Configure ticket queues.

4. Click **Submit**.

**NOTE:** Comments are save independently of all other ticket information.

**The comment is added to the ticket. It is visible to ticket owners only, unless a user with the appropriate permissions clears the *Owners only* check box.**

# View ticket comments

As a ticket is worked on, comments are displayed when the **Comment** tab is selected. They are also shown in the **History** tab along with other history items.

1. Go to the Service Desk *Ticket Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Tickets**.
    c. Click the title of a ticket.
2. At the bottom of the *Ticket Detail* page, select the **Comments** tab.

    **A list of comments belonging to the ticket are displayed below the Comments tab.**
3. Select the **Show attachments only** check box to filter the comment list and display only comments that have attachments.

# Add or delete screen shots and attachments from Service Desk tickets

You can paste up to five screen shots into each Service Desk ticket. In addition, you can add up to five files as attachments to each ticket.

To paste screen shots into tickets:

- The content that you want to capture must be visible on your screen and you must be able to save a screen shot to your computer's clipboard.
- You must access the Administrator Console using a supported browser excluding Safari. For a complete list of supported browser, see the *Technical Specifications*.

**NOTE:** The paste screen shot feature is hidden if you are using an earlier or unsupported browser. However, you can still attach screen shots to tickets as files.

To attach files you must be able to browse to the files from the Administrator Console. You can attach files that are up to 8 MB in size.

When you add screen shots and attachments to a ticket, they appear listed in a separate section of the ticket screen. You can also add images (including screen shots) directly to the *Summary* and *Comment* fields. For more information, see Create tickets from the Administrator Console Ticket page.

1. With the content you want to capture visible, do one of the following to save a screen shot to your computer's clipboard:
    - On Windows, press the **Prnt Scrn** or **Print Screen** key.
    - On Mac, hold the following keys: **Command**, **Shift**, and **3**.

    **The screen shot is copied to your computer's clipboard.**
2. Go to the Service Desk *Ticket Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General

Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Service Desk**, then click **Tickets**.

c. To display the *Ticket Detail* page, do one of the following:

- Select **Choose Action > New**.
- Select **New > New Ticket From Queue > Queue name**.

  If you have a high number of queues, use the search box to quickly find a specific queue.
- Click the name of a ticket.

3. Attach a file to the ticket:

   a. On *Ticket Detail* page, scroll down to the *Attachments* section of the *Comments* tab, and click **Add Attachment**.

   b. In the file browser dialog box that appears, select and open the file that you want to attach to the ticket.

      **You can add up to five file attachments to a ticket.**

      **If the appliance detects any threats in a file attachment included with Service Desk tickets, access to the file is blocked and can be managed on the *Antivirus Quarantine* page. A *Quarantine* link appears next to the file name, allowing you to go to the *Antivirus Quarantine* page. When a quarantined file is released, access to the file is restored. For details, see Manage quarantined file attachments.**

      **The file browser closes and the file name of the attachment appears in the *Attachment* section, under Add Attachment.**

   c. At the bottom of the page, click **Submit**, then click **Apply Changes**.

      **The file attachment is added to the ticket.**

4. Add a screen shot to the ticket.

   a. On the *Ticket Detail* page, scroll down to the bottom of the page, and on the *Comments* tab, in the *Attachment* section, click **Paste Screenshot**.

      **The *Paste Screenshot* dialog box appears.**

   b. Capture a screen shot and copy it to the clipboard.

   c. Use one of the following key combinations to paste the screen shot into the dialog window:

   - On Windows, hold down **Ctrl**, then press **V**.
   - On Mac, hold down **command**, then press **V**.

     **The screen shot appears in the *Paste Screenshot* dialog box.**

   d. Click **Add Screenshot**.

      **The *Paste Screenshot* dialog box closes and the file name assigned to the screen shot appears in the *Attachment* section, under Paste Screenshot. You can add up to five screen shots to a ticket.**

   e. At the bottom of the page, click **Apply Changes**.

      **The screen shot is added to the ticket.**

5. Delete a screen shot or a file attachment from a ticket:

   a. On *Ticket Detail* page, scroll down to the *Attachments* section of the *Comments* tab.

   b. To delete a file attachment, under **Add Attachment**, locate the file that you want to delete, and click  on the right of the file name.

   c. To delete a screen shot, under **Paste Screenshot**, locate the file containing the screen shot that you want to delete, and click  on the right of the file name.

   d. At the bottom of the page, click **Apply Changes**.

**The file is deleted from the ticket.**

6. At the bottom of the page, click **Save** to save your changes to the ticket.

# View ticket activity history

The history tab displays all activity history performed for the ticket. This includes updates to any ticket detail field and comments.

1. Go to the Service Desk *Ticket Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Tickets**.
    c. Click the title of a ticket.
2. At the bottom of the ticket detail page, select the **History** tab.

# Send ticket information through email

Service Desk ticket information can be manually emailed to recipients as needed.

**The content and format of the email is controlled by the *Email Ticket Manually* notification template. Also, the *$ticket_fields_visible* token in the template displays all of the fields that are visible to the logged-in user who is sending the email. See Configuring email triggers and email templates.**

1. Go to the Service Desk *Ticket Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Tickets**.
    c. Click the title of a ticket.
2. Select **Choose Action** > **Email ticket**.
3. On the *Email ticket* page, enter the **Email address** of the recipient and update the **Subject** if necessary.
4. Click **Send**.

    **The ticket information is emailed to the specified recipient.**

# Run Device Actions from tickets

For devices that are assigned to Service Desk tickets, you can run Device Actions from the *Ticket Detail* page.

- Device Actions have been added. See the *Device Actions* section of Configure appliance General Settings without the Organization component.
- Devices have been assigned to tickets.
- You are accessing the Administrator Console using an approved browser. See https://support.quest.com/kb/148787.

1. Go to the Service Desk *Ticket Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Tickets**.

c. Click the title of a ticket.

2. Select a Device Action from the *Action* drop-down list under the *Device* drop-down list.

   **The Device Action automatically attempts to run on the remote device immediately.**

# Merging tickets

If you have a number of related tickets that are still active, instead of managing them separately, you can merge them into a single ticket and manage that one ticket without losing ticket trail of all the merged tickets.

When you merge tickets, you must select a primary ticket. The remaining tickets are automatically archived. All history related to the merged tickets remains unchanged. The ticket history also indicates when a ticket is merged.

You can only merge tickets that exist in the same queue. Tickets belonging to the same queue, but created using different templates can be merged. The fields associated with the primary ticket template are preserved, while the child ticket fields are removed and archived. This feature is only available when ticket archival is enabled.

Service, parent, child, and already merged tickets cannot be merged. Only those tickets without a parent and without a child can be merged.

You can unmerge tickets, as needed. Any users on a ticket's CC list, that are added during the merge process remain on the list if the ticket becomes unmerged.

## Enable ticket merge

You can enable ticket merge for the Service Desk, or if the Organization component is enabled, for the Service Desk of the selected organization.

1. Go to the *Service Desk Settings* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
   c. On the **Configuration** panel, click **Settings**.
2. In the *Ticket Archival* section, select the **Enabled** check box.

## Merge tickets from the Tickets list page

You can use the *Tickets* list page to merge tickets and specify a primary ticket.

1. Select the tickets that you want to merge.
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. Click **Service Desk** to display the *Tickets* page.
   c. On the *Tickets* list page, click **Queue**, and select the queue containing the tickets that you are about to merge.
   d. Select all of the tickets that you want to merge.
2. Merge the selected tickets.
   a. In the *Choose Action* menu, select **Merge Tickets**.

      **The** *Merge Tickets* **dialog box appears.**

   b. In the *Merge Tickets* dialog box, specify the ticket that you want to select as the primary ticket, and click **Save**.

**The *Merge Tickets* dialog box closes and the *Confirm* message box appears, indicating that all tickets (except the primary tickets) are about to be archived.**

c. In the *Confirm* message box, click **Yes** to proceed with the merge.

## Merge tickets from the Ticket Detail page

You can merge one or more tickets with the ticket you are viewing on the *Ticket Detail* page. Any tickets that you want to merge must belong to the same queue.

When you merge tickets using the *Ticket Detail* page, the open ticket becomes the primary ticket. All other merged tickets are archived when you merge them. For more details, see Merging tickets.

1. Open a ticket that you want to merge with one ore more other tickets.
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Tickets**.
    c. Click the title of a ticket.

    **The *Ticket Detail* page appears.**
2. Merge one or more tickets with the selected ticket.
    a. On the *Ticket Detail* page, under *Merged Tickets*, click **Add Tickets to Merge/Edit Merged Tickets**, and select a ticket from the list that appears.
    b. Add more merged tickets, as needed.
3. Verify that the process of merging tickets appears in the ticket history.
    a. On the *Ticket Detail* page, open the *History* tab, and select the **Show Merged Ticket History** check box.
    b. *History* tab, review the entries related to the merged tickets, as applicable.

# Using the ticket escalation process

The Service Desk ticket escalation process is a mechanism for alerting Service Desk staff and supervisors when a ticket is ignored for a specified period of time.

When a ticket meets certain criteria, email is sent to the specified group alerting them that a ticket has been ignored. This provides a way to monitor service level agreements and automatically notify the appropriate staff members when a ticket has not been handled properly.

An escalation email is sent at the end of the escalation time limit for tickets with:

- A Status of **Opened**.
- A Priority that includes an escalation time.

The following example shows the default ticket statuses, priorities, and escalation settings. These settings direct the Service Desk to send an escalation email for tickets with a Status and State of **Opened** and a Priority of **High**, after 30 minutes of inactivity.

You can:

- Configure an escalation email for tickets with other priorities.
- Change the escalation time limits.
- Determine who receives an escalation email.
- Customize the email form as needed.

**NOTE:** Ticket escalation and Service Level Agreements are two separate notification activities. Ticket escalation notifications are based on the duration a ticket has been opened for, while Service Level Agreement notifications are based on the due date of a ticket. Ticket escalation does not consider Business Hours and Holidays.

## Understanding ticket states

Service Desk ticket states identify the current state of the ticket. States include **Opened**, **Stalled**, and **Closed**.

Tickets can be escalated only if they are in the **Opened** state. This requirement is not configurable.

**NOTE:** Using the default settings, tickets must have a priority of **High** and a status of **Opened** to be escalated.

## Understanding the escalation time limit

As soon as a Service Desk ticket is assigned the state of **Opened**, a timer begins counting toward the escalation time limit.

Any change to the ticket resets the timer. If the timer runs out, an escalation email is sent and the timer starts again. If no changes are made to the ticket, the timer is reset. An escalation email is sent each time the escalation time limit is reached. By default, the escalation email is sent every 30 minutes until the ticket is changed.

## Understanding escalation

When Service Desk tickets are escalated, email messages are sent to recipients as specified in the queue settings.

You can choose to send escalation email to:

- Ticket owners
- Ticket submitters
- Users with the technical skills to resolve issues
- Users with the authority to dedicate more resources to the problem

The *Email on Events* section of the *Queue Detail* page, and the **Category CC** list on each ticket, determine who receives escalation email messages.

## Changing ticket escalation settings

Service Desk ticket escalation settings determine the actions that are taken when ticket priority or status changes.

Escalation email is sent for tickets with a priority of **High** and a status change from **New** to **Opened**. If a ticket owner does not respond to a ticket within 30 minutes, you can change the escalation settings to make the ticket eligible for escalation.

## Change the list of escalation email recipients

You can change the email recipients used for Service Desk ticket escalation as needed.

If you are using the default settings, change the ticket status from **New** to **Opened**. If you have changed the default settings, make sure that at least one status has a state of **Opened**, and assign the ticket that status. See Configuring ticket settings.

(Optional) Assign tickets the **Opened** state by default or create a policy requiring that ticket owners change the tickets status as soon as they take ownership.

1. Go to the Service Desk *Queue Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
    c. On the **Configuration** panel, click **Queues**.
    d. Click the name of a queue.
2. In the *Email on Events* section, select the appropriate check boxes to add owners, submitters, approvers, Ticket CC members, and Category CC members as escalation email recipients.
3. Click **Save**.

# Change the escalation time limits

You can change the time limits used for ticket escalation as needed.

1. Go to the Service Desk *Queue Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
    c. On the **Configuration** panel, click **Queues**.
    d. Click the name of a queue.
2. In the *Ticket Defaults* section, click **Customize These Values** to display the *Queue Customization* page.
3. In the *Priority Values* section, click the **Edit** button in a row to change the escalation time limit:  .
4. Click **Save** in the row, then click **Save** at the bottom of the page.

# Change the default escalation email message

You can change the text of the email message that is sent automatically when Service Desk tickets are escalated.

1. Go to the Service Desk *Queue Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
    c. On the **Configuration** panel, click **Queues**.
    d. Click the name of a queue.
2. In the *Email on Events* section, click **Customize Emails** to display the *Service Desk Email Notifications* page.
3. Edit the *Ticket Escalated* message as needed.
4. Click **Save**.

For more information on the *Ticket Escalation* message, see Configuring email triggers and email templates.

# Using Service Desk processes

A Service Desk process is a collection of tickets appearing in pre-defined order that allows you to track tasks requiring multiple steps or activities to complete.

For example, consider the tasks required to prepare systems and equipment for new-hires:

- Identify office space and furniture requirements
- Set up phone service
- Obtain devices and software
- Set up network credentials
- Complete required employment paperwork

You could create a process template that includes all of these required tasks as child activities. Then, when you create tickets based on that process template, the child tickets are created automatically for all of the required tasks at each stage of the process.

To set up a Service Desk process template see, Add, edit, and enable process templates.

## Add, edit, and enable process templates

You can add process templates to the Service Desk. In order for a process template to be enabled and available for end users to create tickets based on that process, it must include at least one parent ticket.

1. Go to the Service Desk *Create Process Template* wizard:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
    c. On the **Configuration** panel, click **Process Templates**.
    d. To create a new process template, on the *Process Templates* page, select **Choose Action > New**.
    e. To edit or copy an existing process template, on the *Process Templates* page, click a process template name.

    **The** *Create Process Template* **wizard appears, with the** *Define Process Template* **page open.**
2. To copy an existing process template, on the *Define Process Template* page, click **Duplicate**.

    **A copy of the duplicated process template appears. While the duplicated process template is disabled, all of the other options are the same as in the original template. When you finish updating the duplicated version, you can select the Enabled option on the** *Publish Options* **page.**
3. On the *Define Process Template* page, specify the following information:

| Option | Description |
|---|---|
| **Name** | A name that describes the overall process, for example, New Hire, Employee Termination, or Office Move. |
| **Description** | A description of the process. For longer descriptions, this field expands automatically, as you type. |
| **HTML/Markdown** | An indicator of whether the description contains rich text. Some process descriptions can be longer than others, so formatting specific text elements can improve the overall readability and help the end user better understand the process. You can |

| Option | Description |
|---|---|
| | use the Markdown project syntax to format the contents of the *Description* box. For example:<br>`<h1> Before you proceed:</h1>`<br>`<h1><ol>`<br>`<li>Ensure the new employee acquisition process is finalized by HR.`<br>`<li>Ensure the Badge ID exists for the new employee<br><br>`<br>`<b>If you do not have a Badge ID, contact HR.</b>`<br>`</ol></h1>`<br>For more information about the Markdown syntax, visit http://daringfireball.net/projects/markdown/syntax. |
| **Process Type** | The type of the process. In a default installation, only the *Service Request* and *Software Request: Approval Required* process types are included. You can create new process types, as required. For example, you can create a process type for accessing a specific application, or a group of applications. For more information, see Define process types. |
| **Allow child tickets to inherit fields at creation time from parent ticket** | Select this option if you want to enable an option in child tickets to inherit field values from their parent tickets that belong to the same queue. Only the values that exist in parent tickets when child tickets are created can be inherited. Any subsequent changes to the associated parent ticket field values are not propagated to child tickets that have this option selected. Inherited field values are specified on a per-ticket basis, as you configure each ticket. |

Click **Save and Continue**.

4. On the *Parent Ticket* page that appears in the *Create Process Template* wizard, associate a parent ticket with this process template.
    a. **Software Request: Approval Required process types only**. This process type is meant for building special process templates that can be used to set up user downloads that require one or more approvals. If selected, a parent ticket is created from this process type by default.
    - To view or edit the contents of the ticket, click **Software Request: Approval Required**.
    - Tickets of this type do not allow you to edit the *Title*, *Summary*, *Device*, or *Submitter* fields. These fields will be populated with the values from the request that initiated the process.
    - Approvals for this process type are mandatory.

    b. Select a queue containing the parent ticket that you want to associate with this process template, and click **Add Parent Ticket**.
    c. On the *New Parent Ticket* page, create a new parent ticket for this process template:

    - If you have multiple queues, select a queue. Parent and child tickets can each be located in different queues. If you do not have multiple queues, queue selection is not offered.
    - If you select a queue that has one or more ticket templates associated with it, select the ticket template.
    - Most fields are similar to those on the *Ticket Detail* page. See Create tickets from the Administrator Console Ticket page. You do not have to use the same category, owner, and so on, for the parent as you use for the child tickets.
    - The *Due Date Offset* is the amount of time required to complete work on a child ticket, and this amount of time is used to calculate the ticket due date. For example, if you set the *Due Date Offset* to four days, the child ticket's due date is offset to be four days after the ticket's creation

date. Due dates are not enforced, but if the due date has passed, tickets are marked as Overdue on the *Ticket* list and they appear as Overdue on reports.

**For additional information about creating tickets, see Create tickets from the Administrator Console Ticket page.**

d. Click **Save** to return to the *Create Process Template* wizard.

5. **Optional**. After adding a parent ticket for a process, you can configure child tickets or activities for that process. Child tickets can be from different queues and they can be assigned different stages.
   a. On the *Parent Ticket* page that appears in the *Create Process Template* wizard, under *Child Tickets*, select a queue associated with the child ticket.
   b. If the selected queue has one or more ticket templates associated with it, select a ticket template.

      **If the queue includes one or more templates, and you do not specify which template you want to use, the default queue template is selected.**

   c. Click **Add Child Ticket**.

      **When a ticket based on this process template is created, stage 1 child tickets are created automatically (after approvals and requirements are met, if needed). When the last child ticket in stage 1 is closed, the child tickets defined in the next stage are created.**

   d. On the *Child Ticket* page, create a new child ticket for this process template:

   - **Stage**: The stage of the process at which the ticket is created, such as 1, 2, 3, and so on. You can assign multiple tickets to the same stage if necessary. For example, if the first stage is to obtain equipment and supplies for a new-hire, you might have several separate child tickets for ordering devices, office equipment, and supplies, all assigned to stage 1.

     When you create a process ticket, all child tickets assigned to stage 1 are created automatically. Stage 2 tickets are created when all stage 1 tickets are closed, stage 3 tickets are created when all stage 2 tickets are closed, and so on.

   - **Title**: A title for the child ticket.
   - **Summary**: A description of the task associated with this child ticket.
   - **Category**, **Owner**, and **Due Dates**: These values do not need to match those of the parent ticket.

     **If you selected Allow child tickets to inherit fields at creation time from parent ticket on the *Define Process Template* page, the Inherited check box appears in each field, allowing you to populate it with the current value of this field in the parent ticket. For more information, see step 3.**

     **For additional information about creating tickets, see Create tickets from the Administrator Console Ticket page.**

   e. Click **Save** to return to the *Create Process Template* wizard.

6. If you want the tickets created from this process template to require approvals, on the *Approvals* page that appears, select **One or more approvals required for this process to start**, and specify the information listed in the table below.

**If you selected the *Software Request: Approval Required* process type, this check box is selected by default and cannot be cleared. Approvals for this process type are mandatory.**

**When a process ticket is created for a process that requires approval, child tickets are not created until all of the approvals are received. If there are multiple approval stages, emails requesting the approvals are first sent to step 1 approvers. Step 2 approvers receive their emails only after all of the step 1 approval requirements are met.**

**Approvers can approve or reject a process ticket by email using email tokens. For example, use the following syntax examples, as applicable:**

- To approve a ticket by email:

```
@approval = approved
```

```
@approval_note = This request is approved by email
```

- To reject a ticket by email:

```
@approval = rejected
@approval_note = This request is rejected by email
```

**For more information about these tokens, see Changing ticket approval fields using email.**

| Option | Description |
|---|---|
| **Approval Step** | |
| **Approval Step 1** | One or more ticket approvers. You can edit the list of approvers, as required.<br>• **New process templates**. This field appears blank.<br>• **Existing process templates**. If one or more approvers are already defined in the process template, they are listed in this field.<br>**NOTE:** The submitter's manager appears selected by default. |
| **Any one approval is required** | At least one ticket approval is required. |
| **All approvals are required** | All ticket approvals are required. |
| **Remove All** | Removes all approvers from the list. |
| **Add Another Step** | Adds an approval step. |
| **Approval Options** | |
| **Approval Timeout Period** | The amount of time each ticket approver has to approve or decline a ticket that is based on this process template.<br>Approval Timeout period does not span over multiple approval steps. For example, if a process has two approval steps and the approval timeout period is defined as eight hours:<br>• Step 1 approvers have 8 hours to approve.<br>• When all of the step 1 approvals are received, step 2 approvers are given eight hours to act on their approval requests. |
| **Approval Notification Recurrence** | Indicates how often the system sends notifications to each approver about a ticket that is pending approval.<br>Leaving this option set to zero '0' causes one-time notification to be sent without any recurrences. |
| **Use business hours and holidays for approval timeout and notification frequency** | Indicates if the system calculates the approval times using business hours. |
| **Approval Override** | Overriding an approval advances the process ticket forward without waiting on any pending approvals. After the override, any pending |

| Option | Description |
|---|---|
| | approvals are closed out, a ticket history is written, and an Approval Received email is sent to approvers, as defined in the email notification. |
| **None** | Approval overrides are not allowed. |
| **Allow All Admins to Override** | Any users with administrative access can override approvals. |
| **Specify Label** | Any users belonging to group with this label can override approvals. |

**Click Save and Continue.**

7. On the *Email Notification* page that appears, select the recipients of email notifications for each stage of the ticket lifecycle. Click the indicated link to configure these options on the *Service Desk Queue Email Settings* page. For more information, see Configure queue-specific email settings.

**Click Save and Continue.**

8. On the *Recurring Ticket Schedule* page that appears, specify the frequency at which a ticket is created. This is useful if you want this process to create tickets at regular intervals, for example, for checking system health or deleting file logs on a regular basis.

| Option | Description |
|---|---|
| **None** | Run in combination with an event rather than on a specific date or at a specific time. |
| **Every n hours** | Run at a specified interval. |
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |
| **Run on the nth of every month/ specific month at HH:MM** | Run on the same day every month, or a specific month, at the specified time. |
| **Run on the nth weekday of every month/specific month at HH:MM** | Run on the specific weekday of every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>`* * * * *`<br>`\| \| \| \| +———————day of week (0-6)(Sun=0)`<br>`\| \| \| +———————month (1-12)`<br>`\| \| +———————day of month (1-31)`<br>`\| +———————hour (0-23)`<br>`+———————minute (0-59)` |

| Option | Description |
|---|---|
| | Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (/)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3.<br>Examples:<br>• `15 * * * * Run 15 minutes after every hour every day`<br>• `0 22 * * * Run at 22:00 every day`<br>• `0 0 1 1,6 * Run at 00:00 on January 1 and June 1`<br>• `30 8,12 * * 1-5 Run weekdays at 08:30 and 12:30`<br>• `0 2 */2 * * Run every other day at 02:00` |
| **View Task Schedule** | Click to view the task schedule. The *Task Schedule* dialog box displays a list of scheduled tasks. Click a task to review the task details. For more information, see View task schedules. |

9. On the *Publish Options* page that appears, select any publishing options, as required:

| Option | Description |
|---|---|
| **Enabled** | Processes must be enabled before you can use them to create process tickets. Select this check box if you want to enable users to create tickets from this process template. |
| **Hide approval information from non-owner users** | Select this option if you do not want the users who do not own the ticket to view approval information. |
| **Hide process steps from Submitters** | Select this option if you do not want to display the process steps (child tickets) to submitters in the parent ticket details page. |
| **Display process to all users** | This option is selected by default. If you want to restrict end user access to this process, clear this option. Alternatively, select a label associated with the group to which you want to grant access. |
| **Display process description page while creating new process requests** | Select this option if you want to show the process description page when creating new tickets based on this process template. |
| **Use process status workflow instead of ticket status** | When you want to take advantage of the approval and notification features available in the process template, you must select this option. If you already configured approvals or notifications, this option is selected by default and cannot be cleared. Choosing to use the process status workflows causes the parent ticket to automatically advance through |

| Option | Description |
|---|---|
| | various process-specific states such as Pending Approval, Approval Denied, Approval Timed Out, In Progress, or Process Complete.<br>If you choose not to select this option and continue to use the ticket status workflows instead, you must create custom ticket rules to achieve desired approval and notification functionality.<br>When you use process status workflows, the *Status* field does not appear on the *Ticket Detail* page, even if that field is configured to appear for the related queue. The ticket *Status* field is still displayed for the child tickets. |
| **Parent Ticket Closed Status** | Select the status that you want to use when the parent ticket associated with this process is closed.<br>When the last child activity is closed, the parent ticket is closed automatically, and its status appears in this field. |

**Click Finish.**

**The** *Create Process Template* **wizard closes, and your newly created or updated process template appears on the** *Process Templates* **page.**

# Define process types

In a default installation, only the *Service Request* and *Software Request: Approval Required* process types are included. You can create new process types, as required. For example, you can create a process type for accessing a specific application, or a group of applications.

The *Software Request: Approval Required* process type is meant for building special process templates that can be used to set up user downloads that require one or more approvals.

Create a parent ticket.

1. Go to the Service Desk *Process Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
    c. On the **Configuration** panel, under **Process Templates**, click **Define Process Types**.
2. To add a new process type, in the top-right corner, click +. In the text box that appears, type the process type name, and click **Save**.
3. To change the name of an existing process, in the row containing the process type that you want to edit, click . In the text box that appears, type the new process type name, and click **Save**.

# Create process tickets to manage related tasks

If you have added and enabled process templates in a queue, you can create process tickets to manage sets of related tasks, such as the tasks required to set up systems for new employees, as a group.

You have added and enabled process templates. See Add, edit, and enable process templates.

1. Go to the Service Desk *New Ticket* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Service Desk**, then click **Tickets**.
c. Select **New > New Ticket From Process > Process name**.

**The *New Ticket* page appears. The activities related to each stage of the process are listed in the *Process Information* section.**

2. Provide the required ticket information. See Create tickets from the Administrator Console Ticket page.
3. Do one of the following:
   - Click **Save** to save the ticket and return to the *Ticket* list.
   - Click **Apply Changes** to save the ticket and continue editing it.
   - Click **Cancel** to discard the ticket changes.

   **If other users have modified the ticket concurrently, the *Update Notification* dialog appears, provided that the dialog is enabled for the queue and you are the ticket owner or an administrator. This dialog is displayed to administrators and ticket owners only. It is not displayed to other users. Administrators can enable or disable the conflict warning message for each queue separately. See Enable or disable the conflict warning.**

See Create tickets from the Administrator Console Ticket page. The process ticket is created, and child tickets are created automatically for activities assigned to stage 1. Stage 2 child tickets are created when all stage 1 tickets are closed, and so on. If approvals are defined for the process, child tickets are created after the approvals are received for the process ticket.

# Create process tickets by email

You can quickly create a process ticket by email for any existing process templates.

Prior to creating a process ticket by email, you must obtain and obtain the following information:

- Process name
- Email address of the ticket queue associated with the process template parent ticket

1. Log in to your email account and create a new email message.
2. In the email recipient line, type the email address of the ticket queue associated with the process template parent ticket.
3. In the email subject line, specify the process template name enclosed in curly braces. Any text you add after that segment is added to the ticket title. For example: `{New Hire} Jane Smith`.
4. Email body is optional. Any contents you add to the email body is added to the ticket description.
5. Send the email.
6. Go to the Service Desk *Tickets* list page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Tickets**.
7. Look for the newly created ticket and click the ticket title.
8. Make any applicable changes.

   **For more information about editing the ticket page, see Create tickets from the Administrator Console Ticket page.**

# View process information

If you have created process tickets to manage sets of related tasks, you can view the related process information in those tickets.

You have created a ticket based on a process template. See Create process tickets to manage related tasks.

1. Go to the Service Desk *Ticket* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Tickets**.
    c. Click the title of a ticket.

    **The *Ticket* page appears. The activities related to each stage of the process are listed in the *Process Information* section. The level of information appearing in this section depends on the settings configured on the *Publish* page of the *Create Process Template* wizard. For example, if you configured the related process template to display Approval and Process information, they appear in this section. For complete information about this wizard, see Add, edit, and enable process templates.**
2. Do one of the following:
    - Click **Save** to save the ticket and return to the *Ticket* list.
    - Click **Apply Changes** to save the ticket and continue editing it.
    - Click **Cancel** to discard the ticket changes.

    **If other users have modified the ticket concurrently, the *Update Notification* dialog appears, provided that the dialog is enabled for the queue and you are the ticket owner or an administrator. This dialog is displayed to administrators and ticket owners only. It is not displayed to other users. Administrators can enable or disable the conflict warning message for each queue separately. See Enable or disable the conflict warning.**

The process ticket is created, and child tickets are created automatically for activities assigned to stage 1. Stage 2 child tickets are created when all stage 1 tickets are closed, and so on.

# Cancel or complete process tickets

If you have created process tickets to manage sets of related tasks, you can view the related process information in those tickets. A process can be marked as cancelled, by either its owner or submitter. It can be marked complete only by its owner.

You have created a parent ticket based on a process template. See Create process tickets to manage related tasks.

1. Go to the Service Desk *Ticket* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Tickets**.
    c. Click the title of a process parent ticket.

**The *Ticket* page appears.**

2. Do one of the following:
   - To cancel the process ticket, select **Choose Action** > **Cancel Process**.
   - To complete the process ticket, select **Choose Action** > **Complete Process**.
3. In the dialog box that appears, confirm that you want to cancel or complete the process ticket.
4. Do one of the following:
   - Click **Save** to save the ticket and return to the *Ticket* list.
   - Click **Apply Changes** to save the ticket and continue editing it.
   - Click **Cancel** to discard the ticket changes.

   **If other users have modified the ticket concurrently, the *Update Notification* dialog appears, provided that the dialog is enabled for the queue and you are the ticket owner or an administrator. This dialog is displayed to administrators and ticket owners only. It is not displayed to other users. Administrators can enable or disable the conflict warning message for each queue separately. See Enable or disable the conflict warning.**

# Delete process templates

You can delete processes using the Service Desk *Processes* list. If tickets exist for a particular process, the process can only be marked as disabled. To delete the process, the tickets created using this process must be deleted first.

1. Go to the Service Desk *Processes* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
   c. On the **Configuration** panel, click **Process Templates**.
2. Select one or more Process Templates, then select **Choose Action** > **Delete**.
3. On the confirmation page, click **Yes** to delete the selected Process Templates.

# Convert process tickets to regular tickets

If you have Service Desk process tickets, you can convert them to regular tickets as needed. This conversion is useful for tickets that have inadvertently been created as process tickets when they do not require all of the steps of a process.

For more information on process tickets, see Using Service Desk processes.

1. Go to the Service Desk *Ticket Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Tickets**.
   c. Click the title of a ticket.
2. Select **Choose Action** > **Convert from process Process Name to a regular ticket**.

   **NOTE:** This menu option is only available if the selected ticket was created from a process.

**A confirmation window appears.**

3. Click **Yes** to continue to convert the process to a regular ticket.
4. Do one of the following:
   - Click **Save** to save the ticket and return to the *Ticket* list.
   - Click **Apply Changes** to save the ticket and continue editing it.
   - Click **Cancel** to discard the ticket changes.

   **If other users have modified the ticket concurrently, the *Update Notification* dialog appears, provided that the dialog is enabled for the queue and you are the ticket owner or an administrator. This dialog is displayed to administrators and ticket owners only. It is not displayed to other users. Administrators can enable or disable the conflict warning message for each queue separately. See Enable or disable the conflict warning.**

## Convert regular tickets to process tickets

Regular Service Desk tickets can be converted to process tickets. This conversion is useful for process-related tickets that are created through email, because tickets created through email are always created as single tickets.

In addition, users might create single tickets because they are unaware of processes, or because they do not have access to processes. Changing regular tickets to process tickets enables administrators and ticket owners to take advantage of processes, even if tickets were not originally submitted as process tickets. For more information on process tickets, see Using Service Desk processes.

1. Go to the Service Desk *Ticket Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Tickets**.
   c. Click the title of a ticket.
2. Select **Choose Action** > **Convert to process** > **Process Name**.

   **A confirmation window appears.**
3. Click **Yes** to continue to convert the ticket to a process.
4. Do one of the following:
   - Click **Save** to save the ticket and return to the *Ticket* list.
   - Click **Apply Changes** to save the ticket and continue editing it.
   - Click **Cancel** to discard the ticket changes.

   **If other users have modified the ticket concurrently, the *Update Notification* dialog appears, provided that the dialog is enabled for the queue and you are the ticket owner or an administrator. This dialog is displayed to administrators and ticket owners only. It is not displayed to other users. Administrators can enable or disable the conflict warning message for each queue separately. See Enable or disable the conflict warning.**

# Using Ticket Rules

Ticket Rules enable you to run queries on Service Desk tickets and perform actions on the list of tickets returned.

For example, you could use a Ticket Rule to automatically change the status of a ticket from *Closed* to *Reopened* if someone other than the owner responds to the ticket. There are four default Ticket Rules, and you can add as many custom Ticket Rules as needed.

# Using and configuring system Ticket Rules

You can use and configure system Ticket Rules to meet the needs of your Service Desk environment.

Options include:

- Enable the default Ticket Rule and use the default settings
- Create custom Ticket Rules
- Duplicate custom Ticket Rules
- Delete custom Ticket Rules
- Move Ticket Rules from one queue to another

# Understanding and customizing system Ticket Rules

System Ticket Rules automatically change the status of Service Desk tickets, or send email notifications, when specified conditions are met.

The following table shows the names, behaviors, and usage of system Ticket Rules:

| Ticket Rule | Default behavior | Can be copied and used to... |
|---|---|---|
| **WaitingOverdue** | Moves tickets that have been dormant for 7 days to an Overdue status. | Change a ticket status after waiting for a configurable time period. You can also send an email message when the status change happens. |
| **OverdueClose** | Closes tickets that have been Overdue with no action for 7 days. | Change a ticket status after waiting for a configurable time period. You can also send an email message when the status change happens. |
| **EmailOnClose** | Sends an email message to the ticket submitters when their ticket is closed. Closed tickets require a response only if the ticket is being reopened. | Send an email message when a ticket is closed. |
| **CustomerResponded** | Moves ticket to a Responded status when a user responds to a ticket that has been waiting for customer action. | Change an open ticket's status and send an email message if it is updated. |
| **ReopenTicket** | Reopens a closed ticket if someone other than the owner responds to it. | If a closed ticket is reopened, this Ticket Rule can change the ticket's status and send an email message. |

# Create custom Ticket Rules

You can create custom Ticket Rules for Service Desk tickets as needed.

1. Go to the Service Desk *Queue Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
c. On the **Configuration** panel, click **Queues**.
d. Click the name of a queue.

2. In the *Ticket Rules* section at the bottom of the page, click **Customize** to display the *Ticket Rules* page.
3. Select **Choose Action** > **New (Wizard)** to display the *Define Ticket Rule* panel.
4. Enter the criteria required to choose the tickets for the custom Ticket Rules. For example:

```
Priority | = | Medium
```

5. Click **Test** to display tickets that match the criteria.
6. Click **Next**.
7. Select the values you want to change to. For example:

```
Priority | change value to | High
```

8. Click **Done** to display the *Ticket Rule Detail* page.
9. Provide the following information:

**IMPORTANT: Do not edit SQL queries without understanding the consequences. Incorrect SQL statements might reduce appliance performance.**

| Option | Description |
|---|---|
| **Name** | The name of the Ticket Rule. |
| **Order** | A number specifying the evaluation order level. The Ticket Rule runs according to the evaluation order specified. Lower numbers run before higher numbers. |
| **Queue** | (Read only) The name of the queue to which the ticket belongs. |
| **Description** | Any additional information you want to provide. |
| **Enabled** | The Ticket Rule is available. The Ticket Rule runs only if it is enabled. |
| **Select SQL** | Modify the SQL query as needed. The query is generated by the Ticket Rule wizard based on the criteria specified on the *Ticket Rule* page. The query returns a set of ticket IDs that the **Update Query** operates on.<br>The **Select Query** runs according to the specified frequency.<br>To view results of the query, click **View Ticket Search Results**.<br>**IMPORTANT: Do not edit SQL queries without understanding the consequences. Incorrect SQL statements might reduce appliance performance.** |
| **Email results** | Send the results of the Select Query to the specified email addresses. All columns returned by the Select Query are included in the email.<br>Enter the email addresses in the *Email* field; use commas to separate addresses. |
| **Append comment to ticket** | Add a comment to each ticket returned by the Select Query. This action is useful in case the Update Query specified later updates a ticket without logging that information. For example, add a message such as Ticket Rule: Increase Priority to High triggered. Having this message gives you an indication of which tickets have changed.<br>Enter any comments in the *Comment* field. |

| Option | Description |
|---|---|
| **Email each recipient in query results** | Send text to the email addresses returned by the Select Query. An email is sent to each email address returned by the Select Query in the *Email* column.<br>Variables are evaluated in the subject line or body of the email. Strings such as $title and $due_date are replaced by the values in the *TITLE* and *DUE_DATE* columns respectively. Any column returned by the Select Query can be replaced in that way.<br>The SQL generated by the Ticket Rule wizard supplies **OWNER_**, **SUBMITTER_**, and **CC_LIST** as possible values.<br>Enter the subject in the *Subject* field.<br>Enter the email column name in the *Email* field, for example, OWNER_. Email is sent to each email address returned by the Select Query in this *Email* column.<br>Enter an email message in the *Email Body* field. |
| **Run update query** | Run a second database query using the results from *Update Query* field as input.<br>Use this field to run an additional SQL UPDATE statement using the comma-separated list of tickets returned by the Select Query as input. For example, “update HD_TICKET set TITLE = 'changed' where HD_TICKET.ID in (<TICKET_IDS>)” turns into “update HD_TICKET set TITLE = 'changed' where HD_TICKET.ID in (1,2,3)”<br>Modify the SQL query as needed. The query is generated by the Ticket Rule wizard based on the criteria specified on the *Ticket Rule* page. This query operates on the tickets selected by the **Select Query**.<br>The *Update Query* runs according to the specified frequency.<br>**IMPORTANT: Do not edit SQL queries without understanding the consequences. Incorrect SQL statements might reduce appliance performance.** |
| **Recalculate Due Dates** | Select this option only if your update query involves updating the priority of existing tickets. Selecting this option recalculates the due dates based on the new priority being set by the ticket rule.<br>**NOTE:** If any of the tickets contain a manually overridden due date, it will not be overridden by ticket rules. |
| **Last Run Log** | The last query results, including any failures or errors. These results are updated each time the Ticket Rule runs. |
| **Frequency** | The interval at which the Ticket Rule runs.<br>**NOTE:** Ticket Rules that run *on Ticket Save* should be designed to operate on a single ticket and trigger a single event. Ticket Rules that run on a schedule can run against multiple tickets and trigger multiple events. |
| **Next Run** | The date and time the Ticket Rule is scheduled to run again. |

10. Click **Run Now** to immediately run the Ticket Rule.
11. Click **Save**.

# Duplicate a custom Ticket Rule

When you duplicate a custom Ticket Rule, its properties are copied into the new rule. If you are creating a rule that is similar to an existing rule, duplicating the Ticket Rule can be faster than creating a rule from scratch.

1. Go to the Service Desk *Queue Detail* page:

a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
c. On the **Configuration** panel, click **Queues**.
d. Click the name of a queue.

2. In the *Ticket Rules* section at the bottom of the page, click **[Customize]** to display the *Ticket Rules* page.
3. Select a Ticket Rule to open it.
4. Click the **Duplicate** button at the bottom of the page.

   **The** *Ticket Rules* **page appears, with the new rule listed. The default name is Copy of original_rule.**
5. Change or rename the duplicated Ticket Rule as needed.

**For information about Ticket Rule fields, see Create custom Ticket Rules.**

# Delete a custom Ticket Rule

You can delete custom Ticket Rules from the Service Desk as needed.

1. Go to the Service Desk *Queue Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
   c. On the **Configuration** panel, click **Queues**.
   d. Click the name of a queue.
2. In the *Ticket Rules* section at the bottom of the page, click **[Customize]** to display the *Ticket Rules* page.
3. Do one of the following:
   - **Select the check box beside the Ticket Rule, then select Choose Action > Delete.**
   - **Click the name of the Ticket Rule, then on the** *Ticket Rule Detail* **page, click Delete.**
4. Click **Yes** to confirm.

# Move a Ticket Rule from one queue to another

If you have multiple Service Desk ticket queues, you can move Ticket Rules between queues as needed. If you want the Ticket Rule to exist in multiple queues, you can copy the rule and make the required changes.

1. Go to the Service Desk *Queues* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
   c. On the **Configuration** panel, click **Queues**.
2. Click the queue that includes the Ticket Rule you want to move.

   **The** *Queue Detail* **page appears.**
3. In the *Ticket Rules* section at the bottom of the page, click **Customize** to display the *Ticket Rules* page.

**TIP:** To move between queues on the *Ticket Rules* page, use the *View By* drop-down list, which appears above the table on the right.

4. Select the check box next to the Ticket Rule.
5. Select **Choose Action** > **Move** > **Queue Name**.

The Ticket Rule is moved to the selected queue. The rule no longer appears in the list of rules for the current queue.

# Run Service Desk reports

You can run reports on Service Desk items as needed.

The appliance includes a set of pre-configured reports for Service Desk data.

1. Go to the *Reports* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Reporting**, then click **Reports**.
2. In the *View By* drop-down list, which appears above the list on the right, select **Service Desk**.

    **The *Reports* page shows Service Desk reports.**
3. In the *Generate Report* column, click a format type to run the report.

**NOTE:** For more information on reports, see About reports.

# Archiving, restoring, and deleting tickets

Archiving tickets involves physically moving ticket data out of the transactional tables while preserving access to ticket data. Archiving does not permanently remove ticket data from the appliance. This is useful for old tickets that you might still need to reference.

When tickets are archived, they remain available until they are manually deleted or deleted based on the date constraints configured in the queue. This restriction reduces the possibility of deleting tickets accidentally.

A typical life cycle for tickets involves creation, resolution, archiving, and finally deleting. You can also “restore” a ticket as discussed in Restore archived tickets. Restoring tickets returns the ticket data from an archive table back into a transactional table for use, making ticket data available again in the *Tickets* tab.

Deleting tickets permanently deletes the ticket data from the appliance.

## Enable ticket archival

You can enable ticket archival for the Service Desk, or if the Organization component is enabled, for the Service Desk of the selected organization.

1. Go to the *Service Desk Settings* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Configuration**.

c. On the **Configuration** panel, click **Settings**.

2. In the *Ticket Archival* section, select the **Enabled** check box to display scheduling options.
3. Specify the following settings:

**NOTE:** If you do not want to perform ticket archiving on a schedule, click **Run Now** to archive and delete tickets any time. This option affects all queues for which archiving is configured. **Run Now** is also available from each queue and uses the settings from that queue when archiving and deleting tickets.

| Option | Description |
|---|---|
| **Every __ hours** | Run at a specified interval. |
| **Every day/specific day at HH:MM** | Run daily at a specified time, or run on a designated day of the week at a specified time. |
| **Run on the nth of every month/specific month at HH:MM** | Run on the same day every month, or a specific month, at the specified time. |
| **Run on the nth weekday of every month/specific month at HH:MM** | Run on the specific weekday of every month, or a specific month, at the specified time. |
| **Custom** | Run according to a custom schedule.<br>Use standard 5-field cron format (extended cron format is not supported):<br>`* * * * *`<br>`\| \| \| \| +———————day of week (0-6)(Sun=0)`<br>`\| \| \| +———————month (1-12)`<br>`\| \| +———————day of month (1-31)`<br>`\| +———————hour (0-23)`<br>`+———————minute (0-59)`<br>Use the following when specifying values:<br>• **Spaces ( )**: Separate each field with a space.<br>• **Asterisks (*)**: Include the entire range of values in a field with an asterisk. For example, an asterisk in the hour field indicates every hour.<br>• **Commas (,)**: Separate multiple values in a field with a comma. For example, `0,6` in the day of the week field indicates Sunday and Saturday.<br>• **Hyphens (-)**: Indicate a range of values in a field with a hyphen. For example, `1-5` in the day of the week field is equivalent to `1,2,3,4,5`, which indicates Monday through Friday.<br>• **Slashes (/)**: Specify the intervals at which to repeat an action with a slash. For example, `*/3` in the hour field is equivalent to `0,3,6,9,12,15,18,21`. The asterisk (`*`) specifies every hour, but `/3` restricts this to hours divisible by 3. |

| Option | Description |
|---|---|
| | Examples:<br>• `15 * * * *` Run 15 minutes after every hour every day<br>• `0 22 * * *` Run at 22:00 every day<br>• `0 0 1 1,6 *` Run at 00:00 on January 1 and June 1<br>• `30 8,12 * * 1-5` Run weekdays at 08:30 and 12:30<br>• `0 2 */2 * *` Run every other day at 02:00 |
| **View Task Schedule** | Click to view the task schedule. The *Task Schedule* dialog box displays a list of scheduled. Click a task to review the task details. For more information, see View task schedules. |

4. Do one of the following:
   - **Click Run Now to run immediately for all queues for which archiving has been configured. See Archive selected tickets.**
   - **Click Save.**

     Ticket archival is enabled for the Service Desk or, if the Organization component is enabled, for the selected organization. However, you must configure specific queues to select the tickets that you want to archive. See Configure queue archive settings.
     The *Service Desk* > *Archive* link appears on the left navigation bar.

# Configure queue archive settings

When ticket archival is enabled, you can configure archive settings for each queue.

You have enabled ticket archival for the Service Desk. For information on enabling ticket archival see Enable ticket archival.

1. Go to the Service Desk *Queue Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
   c. On the **Configuration** panel, click **Queues**.
   d. Click the name of a queue.
2. In the *Archive Preferences* section, select settings for ticket archival. click the **Settings** link to enable ticket archival.

**NOTE:** If Ticket Archival is turned off, see Enable ticket archival.

| Option | Description |
|---|---|
| **Archive closed tickets older than** | The age of tickets to be archived. For example, if you select **3 months**, tickets are archived when three months have passed since the tickets were closed. To prevent tickets in the queue from being archived, select **Never**. Archived tickets can be restored to the queue if necessary. See Restore archived tickets. |

| Option | Description |
|---|---|
| **Delete archived tickets older than** | The age of tickets to be permanently removed from the archive. For example, if you select **6 months**, archived tickets are deleted from the archive when six months have passed since the tickets were archived. To prevent tickets in the queue from being deleted from the archive, select **Never**. Deleted tickets cannot be restored to the queue. |

3. Click **Save** at the bottom of the page.
4. Click **Run Now** to archive and delete tickets that meet the criteria specified in *Archive Preferences*.

# Archive selected tickets

When Service Desk ticket archival is enabled, you can archive selected tickets as needed.

You have enabled ticket archival for the Service Desk. For information on enabling ticket archival see Enable ticket archival.

**TIP:** Selecting tickets to archive is useful when you want to archive specific tickets, or if you do not set archiving to occur on a schedule, as discussed in Enable ticket archival.

1. Go to the Service Desk *Tickets* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Tickets**.
2. Select the check box next to one or more tickets.
3. Select **Choose Action** > **Archive**.
4. On the confirmation dialog, click **Yes**.
5. To access archived tickets, click **Service Desk** > **Archive**, then click the link for the ticket you want to view.

# Restore archived tickets

Tickets that have been archived can be restored to the ticket queue as needed.

1. Go to the Service Desk *Archived Tickets* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Archive**.
2. Select the check box next to one or more archived tickets.
3. Select **Choose Action** > **Restore**, then click **Yes** to confirm.

The ticket is immediately restored to the *Tickets* tab.

# Delete archived tickets

You can delete archived tickets to permanently remove them from the Service Desk. Deleted tickets cannot be restored.

1. Go to the Service Desk *Archived Tickets* list:

a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
b. On the left navigation bar, click **Service Desk**, then click **Archive**.

2. Select the check box next to one or more archived tickets.
3. Select **Choose Action** > **Delete**, then click **Yes** to confirm.

The ticket is immediately removed from the appliance.

# Managing ticket deletion

By default, any Service Desk administrator or ticket owner can delete tickets from a queue. You can change that setting as needed. If you have multiple queues, you can have different settings for each queue.

## Configure ticket deletion settings

You can configure Service Desk ticket deletion settings for queues. If you have multiple queues, you can configure different settings for each queue.

1. Go to the Service Desk *Queue Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
   c. On the **Configuration** panel, click **Queues**.
   d. Click the name of a queue.
2. In the *User Preferences* section, do one of the following:
   - **To prevent administrators and ticket owners from deleting tickets, clear the** *Allow Ticket deletion* **check box.**
   - **To enable administrators and ticket owners to delete tickets, select the** *Allow Ticket deletion* **check box.**
3. Click **Save**.

## Delete tickets

If ticket deletion is enabled in the Service Desk queue settings, you can delete tickets as needed.

You have enabled ticket deletion for the queue. See Configure ticket deletion settings.

1. Go to the Service Desk *Tickets* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Tickets**.
2. Select the check boxes next to one or more tickets.
3. Select **Choose Action** > **Delete**, then click **Yes** to confirm.

# Managing Service Desk ticket queues

By default, Service Desk has a single ticket queue, and in many cases, a single queue is all an organization requires to function effectively. However, you can add, duplicate, and delete queues as needed. You can also create one or more ticket templates in a queue. If multiple templates exist in a queue, you must select one ticket template as the default template.

# About Service Desk ticket queues

Service Desk tickets are stored in one or more queues on the appliance. Most organizations need only a single queue, but you can create and manage additional queues as needed.

Having multiple ticket queues is useful when:

- **You have different sets of tickets with different requirements**. For example, if you use tickets for typical Service Desk tasks such as fixing device-related problems, and you also use tickets to keep track of problems with a fleet of automobiles, you can set up separate queues for each type of problem.
- **Service Desk staff are assigned to a specific set of tickets**. For example, if your organization has offices in different cities, and each city has a Service Desk staff dedicated to that location, you can manage tickets in separate queues. However, if your Service Desk staff handles multiple offices from a single location, a single queue is sufficient.

For information about configuring ticket queues, see Configuring Service Desk ticket queues.

# Adding and deleting queues

You can add, duplicate, and delete queues as needed. This activity can be useful if you want to set up different types of tickets for different groups in your organization.

## Add a queue

You can add Service Desk ticket queues as needed.

If you plan to move Service Desk tickets from one queue to another, be sure to use the same values, including custom fields, in each queue. Otherwise, data from the old queue is altered to match the new queue. See Move tickets between queues.

1. Go to the Service Desk *Queue Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
    c. On the **Configuration** panel, click **Queues**.
    d. Select **Choose Action** > **New**.
2. Enter values for the *Name*, *Email Address*, and *Alternate Email Address* for the new queue.

**CAUTION: When delivering email to the appliance directly (forwarding email to the appliance), the local portion of the appliance address and the alternate address must match. For example, servicedesk@kbox and servicedesk@company.com.**

**CAUTION: Each new queue must use its own unique email addresses. The appliance confirms this before allowing you to save the new queue. If you specify an email address that is already associated with another queue, a warning appears.**

3. If you have set up a POP3 server, enter the POP3 email user ID and password in the *User / Password* fields.

   **See About POP3 email accounts.**

   **TIP:** When using POP to download email to the appliance, you can use any valid mailbox.

4. For the POP3 authentication, you can apply Secure Sockets Layer (SSL) to the queue by selecting the *SSL* check box.

   **Whether you select this check box depends on how you have configured your POP3 account.**

5. Click **Save**.
6. Choose additional settings for the queue as needed. See Configuring Service Desk ticket queues.

# Add a queue by duplicating an existing queue

When you duplicate or clone a queue, all data from the existing queue is copied into the new queue, which can be faster than adding a queue from scratch. Ticket Rules are copied to the duplicated queue, but they are disabled by default.

1. Go to the Service Desk *Queues* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
   c. On the **Configuration** panel, click **Queues**.
2. Click the name of a queue to display the *Queue Detail* page.
3. Click **Duplicate** at the bottom of the page.

   **The new queue contains the same name as the queue from which it was duplicated with an appended unique identifier number. By default, Ticket Rules are disabled in the new queue.**

4. Change the name and settings of the queue as needed.
5. Click **Save**.

# Delete a queue or queues

You can delete queues as needed.

**CAUTION: Before you delete a queue, be sure that you want to delete all of the data in a queue. This includes associated tickets and processes. This action cannot be undone.**

1. Go to the Service Desk *Queue Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
   c. On the **Configuration** panel, click **Queues**.

d. Click the name of a queue.

2. At the bottom of the page, click **Delete**, then click **Yes** to confirm.

# Viewing tickets in queues

You can sort the *Tickets* page to show all of the tickets in all of your queues in one list. If you have multiple queues, you can specify the queue to be displayed by default on the *Tickets* page.

If you have multiple queues, you can choose which queue to be displayed by default on the *Tickets* page. The default queue can be specified:

- **At the system level**. This setting is used if no user settings are specified. See Set the default queue at the system level.
- **At the user level**. This setting overrides the system level settings. Individual users and administrators who have permission to change user settings can specify the default queue at the user level. See Set the default queue at the user level.

## View tickets across all queues

If you have multiple queues, you can view tickets from all queues in the same list.

1. Go to the Service Desk *Tickets* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Tickets**.
2. In the *Queue* drop-down list, which appears above the table, select **All Queues**.
3. In the *View By* drop-down list, to the right of the *Queue* drop-down list, select the group of tickets you would like to view.

**If you have a high number of queues, use the search box to quickly find a specific queue.**

# Setting the default queue

If you have multiple queues, you can choose which queue to be displayed by default on the *Tickets* page.

The default queue can be specified:

- **At the system level**. This setting is used if no user settings are specified. See Set the default queue at the system level.
- **At the user level**. This setting overrides the system level settings. Individual users and administrators who have permission to change user settings can specify the default queue at the user level. See Set the default queue at the user level.

## Set the default queue at the system level

The system-level default queue settings determine which ticket queue is displayed by default provided that user-level settings are not specified.

1. Go to the Service Desk *Settings* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
c. On the *Configuration* panel, click **Settings**.

2. In the *Queue Preferences* section, select an option in the *Ticket List Default Queue* drop-down list:

| Option | Description |
|---|---|
| **No Default** | Use no default when displaying queues. When this is selected, the first queue that was added to the system is displayed by default when users select **Service Desk** > **Tickets**. This setting is disregarded if a setting is specified at the user level. |
| **All Queues** | Display the *All Queues* view by default. When this is selected, the *All Queues* view is displayed when users select **Service Desk** > **Tickets**. This setting is disregarded if a setting is specified at the user level. |
| **<Queue Name>** | Display the selected queue by default. When this is selected, the specified queue is displayed when users select **Service Desk** > **Tickets**. This setting is disregarded if a setting is specified at the user level. If a queue does not appear on this list, verify that you have permission to view it. |

**TIP:** These settings can be overridden at the user level. See Set the default queue at the user level.

3. Click **Save**.

# Set the default queue at the user level

The user-level queue settings determine which ticket queue is displayed by default. User-level settings override system-level settings. Individual users and administrators who have permission to change user settings can specify the default queue at the user level.

If no user-level default queue is specified, the system-level default queue is used.

1. Go to the *User Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Settings**, then click **Users**.
   c. Click the name of a user.
2. In the *Default Queue* drop-down list, select an option:

| Option | Description |
|---|---|
| **No Default** | Use no default when displaying queues. When this is selected, the first queue that was added to the system is displayed by default when the selected user selects **Service Desk** > **Tickets**. |
| **All Queues** | Display the *All Queues* view by default. When this is selected, the *All Queues* view is displayed when the selected user selects **Service Desk** > **Tickets**. |
| **<Queue Name>** | Display the selected queue by default. When this is selected, the specified queue is displayed when the selected user selects **Service Desk** > **Tickets**. If a queue does not appear on this list, verify that you have permission to view it. |

3. Click **Save**.

# Set the default fields for the All Queues ticket list

You can specify the ticket fields you want to display in the *All Queues* view.

If you have multiple queues, the *All Queues* view is a useful way to view all of the tickets in your system on a single list.

For example, each queue might have different names for ticket fields. One queue might use the ticket field *Priority* and another queue might use the ticket field *Business Impact*. You can choose which field to display in the *All Queues* view.

Fields are displayed according to these settings:

- The field names used in the queue selected as the *Default Queue for All Queues View Field Labels*
- The fields specified in the *Customize List Layout for All Queues View* setting

1. Go to the Service Desk *Settings* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
    c. On the *Configuration* panel, click **Settings**.
2. In the *Queue Preferences* section, select a queue in the *Ticket List Layout for All Queues* drop-down list.

    **The field names from this queue appear on the *Tickets* page.**
3. Click **Save**.
4. Click **Customize List Layout for All Queues View** to display the *Layout* page.
5. Modify the fields using the following icons:
    - : Add a field.
    - : Change the field name or the width of the field column.

      **NOTE:** The width indicates the amount of available page width that is assigned to the field column. For example, if you have 10 columns, and each column is assigned a width of 10, the total of all numbers in the *Width* column would be 100. Therefore, each field column would have a width of 10 percent of the available page width. If the total of all numbers in the *Width* column is more or less than 100, the numbers are normalized to percentages to determine the width. For example, if you have three columns, and you assign a width of 10 to each column, the total of all numbers in the Width column would be 30. However, when normalized to percentages, the width of each column would be approximately 33.3 percent.

      **TIP:** The field column widths specified in the *All Queues View* overrides the properties of individual queues.
    - : Drag and change the order in which the fields are displayed.
    - : Delete the field.
6. For each field you edit, click **Save** at the end of the row.

    **The default queue settings are saved.**
7. To see the new settings:
    a. Select **Service Desk** > **Tickets** to display the page.

b. In the *Queue* drop-down list, select **All Queues**. In the *View By* drop-down list, select **All Tickets**.

**Fields from the selected queue appear on the list in the order specified in the queue settings.**

**CAUTION: When the system displays Active Tickets or All Tickets in the *All Queues* view, the *Choose Action* menu and *View By* drop-down list use default settings. Customizations that appear in individual queues are not available in the *All Queues* view.**

# Move tickets between queues

If you have multiple queues, you can move tickets between them as needed.

When you move a ticket to different queue, the ticket's original settings, such as status, impact, priority, or category are overwritten by the settings in the queue to which it is being moved. The ticket change history stores the original values.

The following example shows how a custom field is treated when tickets are moved between queues:

1. The *CUSTOM_1* field in the ticket being moved lists the root cause of the problem as **Pilot Error**.
2. The *CUSTOM_1* field in the target queue lists locations, such as **Tampa**, **Los Angeles**, and **Denver**.

   The CUSTOM_1 value, **Pilot Error**, is retained in the ticket being moved.
3. If you change the *CUSTOM_1* value of the ticket being moved to **Tampa**, the **Pilot Error** value is no longer available for the ticket that has been moved.

1. Go to the Service Desk *Ticket Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Tickets**.
   c. Click the title of a ticket.
2. Select **Choose Action** > **Move to queue** > **queue name**.

   **If you have a high number of queues, use the search box to quickly find a specific queue.**
3. Click **Yes** to confirm the ticket move.
4. Click **Save** to save the ticket in the new queue.

# Bulk edit tickets in a queue

The bulk ticket update feature allows you to edit one or more fields of multiple tickets at the same time. The tickets must belong to the same queue. You can only bulk edit tickets if you are the queue owner.

**Performing a bulk edit against a set of tickets does not affect ticket rules. Any ticket rules associated with the tickets you bulk edit continue to run, as configured. For more information about ticket rules, see Using Ticket Rules.**

1. Go to the Service Desk *Tickets* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.

b. On the left navigation bar, click **Service Desk**, then click **Tickets**.

2. In the *Queue* drop-down list, which appears above the table, select a queue containing the tickets that you want to edit.
3. On the *Tickets* list page, select the tickets that you want to bulk edit.
4. Select **Choose Action** > **Bulk Ticket Update**.
5. In the *Bulk Ticket Update* dialog box that appears, in the *Field Name* column, select a field whose value you want to update. Then, in the *Field Value* column, set the value that you want to assign to the selected field.
   - To add a field to this bulk edit, click **Add field to update**, and specify the field's name and value.
   - To delete a field from the list, in the *Action* column, click *Remove item*.
   - To suppress email notifications to the applicable users about this change, select **Supress Notifications**.
   - When editing the *CC List* field, any email addresses you add are appended to the existing CC list. To replace the items in the CC list with the values you provide here, ensure the **Append to existing CC list** check box is cleared.
   - Bulk edits of the *Comment* field does not replace the existing comments, it only adds a new comment to the existing ones.
   - Failing to provide the value of a required field results in an error.
   - Bulk update does not allow you to change the ticket Status. You can bulk edit this field using the commands from the **Choose Action** menu.
   - When done, click **Save**.

# About User Downloads and Knowledge Base articles

You can distribute software, scripts, and other downloadable files to users through the User Console. In addition, you can make Knowledge Base articles available for users to view in the User Console.

To enable users to access the User Console, you must create user accounts on the appliance or enable LDAP authentication. See About user accounts and user authentication.

# Managing User Downloads

You can create, label, and delete *User Downloads* using the Administrator Console.

To make items available in the User Console, you must upload them in the *User Downloads* section of the Administrator Console. See Add User Downloads.

To run installers and scripts, users must have the KACE Agent software installed on their devices. See About managing devices.

To limit user access to downloadable items, select the device labels to which the items apply, or apply labels to the items themselves. See Apply labels to User Downloads.

## Add User Downloads

You add software, scripts, and other downloadable files to the User Console using the Administrator Console.

All items that you want to add to the User Console must already exist in the appliance *Inventory* or *Scripting* sections. You cannot create software or scripts using the Administrator Console.

**TIP:** Software distribution is available for items on the *Software* page and for Agent-managed devices only. It is not available for items on the *Software Catalog* page or Agentless devices.

1. Go to the *User Downloads Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **User Downloads**.
    c. Select **Choose Action** > **New**.
2. Select the **Enabled** check box to make the item visible on the User Console; clear the check box to hide the item.
3. In the *Configure* section, select a *Type*:

| Option | Description |
|---|---|
| **Download** | Select one of the following options:<br>• **Cataloged Software**: Choose this option to select an item from the software catalog that includes one or more associated files. First select the application, and then the file that you want to be available for download. An application in the software catalog can include multiple files, such as installers for different application versions and platforms.<br>**TIP:** When you add a cataloged software item to user downloads, the *User Downloads* (Administrator Console) and *Downloads* (User Console) pages display some additional information about that application in the *Category*, *License Type*, *Platform*, *End of Life*, *General Availability*, and *MSRP ($)* columns.<br>For more information about cataloged software, see About the Software Catalog and View details of Software Catalog applications.<br>• **Software**: Create an item that downloads documentation, files, or other software that does not install automatically. |
| **Install** | Create an item that runs a software program on the user's device. A device must have the Agent installed to run installations. Select one of the following options:<br>• **Use existing Managed Install**: Choose this option to select an existing Managed Installation (MI). Each MI includes a specific application title and version to be installed or removed, including installation commands, installation files, and target devices (identified by label). For more information, see Using Managed Installations.<br>• **Default Installation**: Choose from the programs available in **Inventory** > **Software**. For more information, see About the Software page. |
| **Script** | Create an item that runs a script on the user's device. Choose from the scripts available in **Scripting** > **Scripts**. Devices must have the Agent software installed to run scripts. |

4. If you selected the **Install** package type in the previous step, enter the parameters required to run the installation, including any necessary installation switches or parameters.
5. Specify the information to include:

| Field | Description |
|---|---|
| **Product Key** | Send the product key to users when they download the application. To view *Asset Detail* license information, click **Assets**. |
| **Unit Cost** | (Optional) The cost per unit. |
| **Installation Instructions** | Instructions, legal notes, or any other information you want to upload to the User Console along with the application. |
| **Description** | Any additional information you want to provide. |
| **Vendor License** | (Optional) Any vendor-specific license text. |
| **Corporate Licensing Policy** | (Optional) Any organization-specific license text. |
| **Email Product Key to End User** | Send the product key to users when they download the application. To view *Asset Detail* license information, click **Assets**. |
| **Notify Manager** | Require users to enter their manager's email address before enabling them to download or install applications. |
| **Attachment** | (Optional) The file to be included as documentation. The file size appears after the item is saved. |

6. In the *Access Control* section, specify distribution restrictions:

| Field | Description |
|---|---|
| **Assign to User Labels** | (Optional) Click **Manage Associated Labels** and select a label to limit application deployment to users who are included in the label. |
| **Restrict User Labels to Assigned Devices** | (Optional) Limits access to this User Download package only to those users and devices associated with the selected label. |
| **Requires Approval** | (Optional) Select this check box if you want to the end user to obtain one or more approvals to download the software, and configure the following fields:<br>• **Approval Process Template**: Select the process template containing the desired approval process. The process template must be based on the *Software Request: Approval Required* process type which applies to software download requests.<br>• **Approval Frequency**: Indicate how often you want the user to request a permission to download the selected software: *One-time Approval* or *Every Download Approval*.<br>**NOTE:** When an end user attempts to download an item that requires approval, the system automatically creates a ticket using the configured process template. Approvers are automatically notified. Upon approval, the user receives a notification and can proceed to download the selected item. |

7. Click **Save**.

## Apply labels to User Downloads

You can use labels to group User Downloads. This is useful for managing and distributing multiple items at once and for restricting access to items.

1. Go to the *User Downloads* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **User Downloads**.
2. Select the check box next one or more items.
3. Select **Choose Action** > **Apply Labels**.
4. Drag a label to the *Apply these labels* field, then click **Apply Labels**.

The label is listed next to the item in brackets.

## Remove labels from User Downloads

You can remove labels from User Downloads as needed.

1. Go to the *User Downloads* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **User Downloads**.
2. Select the check box next to an item.
3. Select **Choose Action** > **Remove Labels**.
4. Click the **Delete** button next to the label you want to remove:  .
5. Click **Remove Labels**.

The label is removed from the item.

## Delete User Downloads

You can delete User Downloads as needed.

1. Go to the *User Downloads* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **User Downloads**.
2. Select the check box next to one or more items.
3. Select **Choose Action** > **Delete**, then click **Yes** to confirm.

# Managing Knowledge Base articles

You add, edit, duplicate, and delete Knowledge Base articles using the Administrator Console.

Users can search for articles by keyword, and sort by article ID, Title, Category, Platform, or Importance in the User Console. Users can also rate the helpfulness of Knowledge Base articles.

To insert Knowledge Base article text into Service Desk tickets, click the **Find Related Articles** link on ticket pages.

# Add, edit, or duplicate Knowledge Base articles

You can add, edit, and duplicate Knowledge Base articles. These articles are available to users in the User Console.

1. Go to the *Article Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Knowledge Base**.
    c. To display the *Article Detail* page, do one of the following:
    - Click the name of an article.
    - Select **Choose Action** > **New**.
2. Provide the following information:

| Field | Description |
|---|---|
| **Title** | A specific description of the issue covered in the Knowledge Base article. Write descriptive titles and use common terms to make it easy for users to find information. |
| **Category** | A general description of the type of issue, for example, “printing” or “network access.” |
| **Platform** | The operating systems to which this Knowledge Base article applies. |
| **Importance** | The value of the Knowledge Base article. For example, “reference” or “low”; or “critical” or “high.” |
| **Assign to Labels** | To limit access to the article to specific sets of users, select the appropriate user labels from the list. If this field is empty, all users who have access to the User Console can see the Knowledge Base article. |
| **Text** | The content of the Knowledge Base article.<br>This field includes a full range of text editing options for formatting your content, such as buttons for bold text, hyperlinks, lists, text color, embedding images and videos. |

| Field | Description |
|---|---|
| | For example:<br>• To apply bold text to a text string, select it in the editor, and click B.<br>• You can add images to Knowledge base articles using three different methods. To do that, click, and in the image panel that appears, complete one of the following steps:<br>◦ To navigate to a file from your computer and upload it to the article, click. Any images added this way will be automatically saved as attachments to the KB article.<br>◦ To link to a file that is hosted elsewhere or is a part of another KB article, click.<br>◦ To link to a file that is already attached to the KB article, click.<br>• To add external links, or links to other KB articles, click.<br>• To attach a file, click. Any files uploaded using this option are saved as attachments to this KB article.<br>• To embed an externally hosted video, click.<br>• When you remove an image file from the article content, but do not delete the file attachments, you can add them back to the article content. To do that, click, and in the image panel that appears, click.<br>• To delete a file attachment, click |

3. **Optional**: In the *Attachments* section, click **Add**, then click **Browse** or **Choose File** to add an attachment.
4. Click **Save**.

   **TIP:** To create a Knowledge Base article from the comments in a ticket, click **Create KB article** on the *Ticket Detail* page.

   **The appliance assigns the Knowledge Base article an Article ID and displays it on the *Knowledge Base* page. To see how the Knowledge Base article appears to users in the User Console, click the Knowledge Base article's title on the *Knowledge Base* page, then click the User URL on the *Article Detail* page.**
5. **Optional**: Click **Duplicate**.

# Delete Knowledge Base articles

You can delete Knowledge Base articles to permanently remove them from the appliance.

1. Go to the *Knowledge Base Articles* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Knowledge Base**.
2. Select the check box next to one or more articles.
3. Select **Choose Action** > **Delete**, then click **Yes** to confirm.

## View user ratings and the number of views for Knowledge Base articles

You can view user ratings for Knowledge Base articles as well as the number of times Knowledge Base articles have been viewed.

1. Go to the Knowledge Base *Article Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Knowledge Base**.
    c. Click the name of an article.

    **The current user rating for the article and the number of page views appear at the bottom of the page.**
2. Mouse over the stars to view the definitions of the five-star rating system.

    **On the scale, 1 star is low, 5 stars are high.**

**NOTE:** Users can change their ratings. However, the database stores only the user's most recent rating for each article.

# Customizing Service Desk ticket settings

You can customize Service Desk ticket settings to meet the needs of your users and your environment. If you have multiple queues, you can customize ticket settings for each queue separately.

# About customizing Service Desk ticket settings

You can customize ticket values, add custom fields, create ticket categories, and create ticket sub-categories to meet your Service Desk requirements.

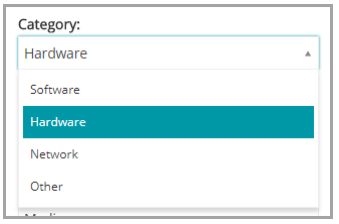
Default ticket values include category, status, priority, and impact.

- Ticket characteristics include:
    - Field name
    - Field order displayed on the ticket
    - Whether the field is required or not
    - Who has permission to change the field
- Custom field definitions include:
    - Field type (check box, date, timestamp, link, multiple select, notes, number, single select, text, or user)
    - Acceptable values for the field
    - The default value for the field

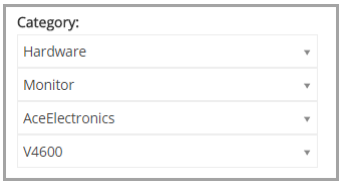
# Create ticket categories and subcategories

You can create ticket categories and subcategories as needed. Categories and subcategories are queue-specific, and they become available to all new and existing tickets in the selected queue when they are created.

You can add as many ticket categories as you need, each with one or more subcategories. For example, in the ticket category *Hardware*, you might want to have a subcategory such as *Monitor*. These categories would appear on the *Ticket Detail* page as:




When users select the *Monitor* subcategory, you might want to display additional subcategories, such as model information:




Most customers use a two-tiered approach to categories and subcategories. They create general categories and subcategories for users, such as:

- Hardware – Monitor

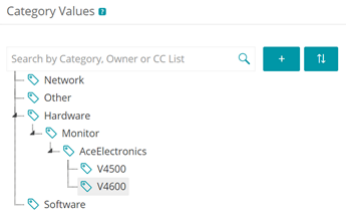
Then they create additional subcategories with model information for Service Desk staff, such as:

- Hardware – Monitor – AceElectronics – V4500
- Hardware – Monitor – AceElectronics – V4600

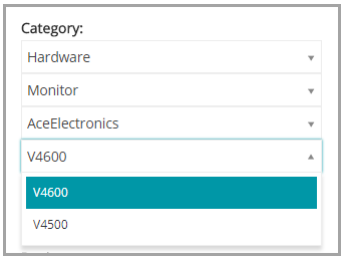
1. Go to the Service Desk *Queue Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
    c. On the **Configuration** panel, click **Queues**.
    d. To display the *Queue Detail* page, do one of the following:
    - Click the name of a queue.
    - Select **Choose Action** > **New**.
2. In the *Ticket Defaults* section, click **Customize These Values** to display the *Queue Customization* page.

    **On the *Queue Customization* page, in the *Category Values* section, the *Tree View* tab opens by default, allowing you to create and manage ticket categories and subcategories. You can review existing categories and sub-categories in list form on the *List View* tab, if needed.**
3. Create and edit ticket category and subcategory nodes using the tree widget, as required.
    - **To add a new root category, click , and specify the category name.**
    - **To add a new subcategory, right-click the parent category node, and in the menu that appears, choose Create.**

On the *Queue Customization* page, categories and subcategories appear as follows:




On the *Ticket Detail* page, categories and subcategories appear as follows:




- **To rename a category, right-click the category note, choose Rename in the menu, and type the new name.**
- **To delete a category, right-click the category note, choose Delete in the menu, and in the *Confirm* dialog box that appears, click Yes.**
- **To sort all subcategories in a category, right-click the category note, and in the menu, choose Sort > Ascending or Sort > Descending, as applicable.**
- **To sort all categories and their subcategories in ascending order, click , and in the *Confirm* dialog box that appears, click Yes.**

  **NOTE:** Deleting a category does not remove its subcategories from the tree.

- **To find a specific category, start entering the category name in the search box. The matching results appear highlighted in the tree widget as you type.**
- **To move a category, drag the category node to a desired position in the tree.**

4. To edit a category, select it in the tree, and provide the following information in the area on the right. When you finish making changes to the category, click **Add**.

| Field | Description |
|---|---|
| **Default Owner** | The user that is automatically assigned as owner of the ticket category or subcategory when tickets are created. If you move an existing ticket to a category with a different default owner, the owner of the ticket does not automatically change. The owner of the ticket must be changed manually. |
| **CC List** | Clear this check box to prevent the CC List from being displayed on tickets. Because **DefaultTicketOwners** is the default owner, all potential ticket owners receive an email when a ticket is created. |
| **User Settable** | Allows users to change the corresponding category. Clear the check box to reserve the action for Service Desk staff only. Users see categories even if they cannot change them. |

5. Click **Save** at the bottom of the page or continue editing ticket values.

The new categories and subcategories appear on the *Ticket Detail* page and are available to new and existing tickets.

# Customizing ticket values

You can customize the values available for ticket status, ticket priority, and ticket impact.

## Customize ticket status values

You can customize the values that indicate ticket status, such as open or closed.

**IMPORTANT: Status values are often used in Ticket Rules. Make sure you review your Ticket Rules and understand how status values are used in those rules before you modify status values. See About Ticket Rules.**

1. Go to the Service Desk *Queue Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
   c. On the **Configuration** panel, click **Queues**.
   d. To display the *Queue Detail* page, do one of the following:
   - Click the name of a queue.
   - Select **Choose Action > New**.
2. In the *Ticket Defaults* section, click **Customize These Values** to display the *Queue Customization* page.
3. In the *Status Values* section, click the **Edit** button beside a value to modify it: , or click the **Add** button at the top of the list to add a new value, +
4. Edit the *Status Values* fields:

| Field | Description |
|---|---|
| **Name** | The name for the status value. |
| **State** | The state assigned to the status value.<br>• Opened: The ticket is active. Only this State can be escalated. See Using the ticket escalation process.<br>• Closed: The ticket has been resolved.<br>• Stalled: The ticket is open past its due date, but is not in escalation. |

5. Click **Save** in the row.

   **To update categories, use the icons to the right of each row:**

   - : Change the sort order of columns.
   - : Add a field.
   - : Change the values.
   - : Change the order of values.
   - : Remove the values.

**NOTE:** You cannot remove a value if it is in use, or if it is the default ticket value. To remove a value that is being used, add a value, then, in the ticket where the value is used, change the old value to the new value. When the old value is no longer in use, the **Delete** button appears next to the value: .

6. Click **Save** at the bottom of the page or continue editing ticket values.

# Customize ticket priority values

You can customize the values that indicate ticket priority as needed.

1. Go to the Service Desk *Queue Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
   c. On the **Configuration** panel, click **Queues**.
   d. To display the *Queue Detail* page, do one of the following:
   - Click the name of a queue.
   - Select **Choose Action** > **New**.
2. In the *Ticket Defaults* section, click **Customize These Values** to display the *Queue Customization* page.
3. In the *Priority Values* section, click the **Edit** button beside a value to modify it: , or click the **Add** button at the top of the list to add a new value, .
4. Edit the *Priority Values* fields:

| Field | Description |
|---|---|
| **Name** | Enter a name for the custom field. |
| **Color** | (Optional) Select a color to use for this status on the ticket list pages. |
| **Escalation Time** | (Optional) Enter a time limit, after which an open ticket of this priority is escalated. Enter a time integer and a unit from the drop-down list. See Using the ticket escalation process. |
| **Use Business Hours/Holidays** | (Optional) Whether to use the settings for business hours and holidays when calculating the priority of tickets in the queue. If business hours and holidays are configured for the Service Desk, select this check box to take these hours and holidays into account when determining whether to escalate tickets based on their |

| Field | Description |
|---|---|
| | priority. Clear the check box to ignore settings for business hours and holidays in this queue. |

5. Click **Save** in the row.
6. Use the icons to the right of each row to modify additional values:
   - : Change the sort order of columns.
   - : Add a field.
   - : Change the values.
   - : Change the order of values.
   - : Remove the values.

     **NOTE:** You cannot remove a value if it is in use, or if it is the default ticket value. To remove a value that is being used, add a value, then, in the ticket where the value is used, change the old value to the new value. When the old value is no longer in use, the **Delete** button appears next to the value: .
7. Click **Save** at the bottom of the page to save changes and return to the *Queue Detail* page.

# Customize ticket impact values

You can customize the values that indicate ticket impact.

**NOTE:** Only ticket owners can categorize tickets using the *Category* and *Priority Values* fields. Ticket submitters can make this type of assessment in the ticket *Impacts* field.

1. Go to the Service Desk *Queue Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
   c. On the **Configuration** panel, click **Queues**.
   d. To display the *Queue Detail* page, do one of the following:
   - Click the name of a queue.
   - Select **Choose Action** > **New**.
2. In the *Ticket Defaults* section, click **Customize These Values** to display the *Queue Customization* page.
3. In the *Impact Values* section, click the **Edit** button beside a value to modify it: , or click the **Add** button at the top of the list to add a new value, .
4. Modify the *Name* field as needed.
5. Click **Save** in the row.

**The icons to the right of each row enable the category to be updated.**

- : Change the sort order of columns.
- : Add a field.
- : Change the values.
- : Change the order of values.
- : Remove the values.

**NOTE:** You cannot remove a value if it is in use, or if it is the default ticket value. To remove a value that is being used, add a value, then, in the ticket where the value is used, change the old value to the new value. When the old value is no longer in use, the **Delete** button appears next to the value: .

6. Click **Save** at the bottom of the page or continue editing ticket values.

# Customizing ticket layout

You can customize the way tickets are displayed on the *Tickets* page for each queue.

Customization options include:

- Change the order of most of the default fields or hide them.
- Add one or more custom fields; the number is restricted only by the number of columns you can have in a table. Specify static values for these fields or pull the values from a database dynamically using a database query.
- Customize ticket views and set read/write access for users, ticket owners, and administrators. This includes the ability to hide, view, view but not change, or change individual ticket fields for each of these roles.
- Preview the customized ticket page, to ensure that the resulting layout meets your needs.
- Set up parent-child ticket relationships between tickets and either prohibit the parent from closing until all the child tickets are closed, or allow the parent ticket to close all the child tickets. See Using parent-child ticket relationships.
- Prevent a ticket from being opened or closed without the required approval. Or, require approval only when a ticket closes. See Using ticket approvers.

**TIP:** Remember that the changes you make here are automatically propagated to all existing tickets in the queue.

## Customize Layout and Related Ticket Fields

You can customize the way the *Layout Ticket Fields* and *Related Ticket Fields* are displayed on the *Ticket Detail* page.

1. Go to the Service Desk *Queue Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
   c. On the **Configuration** panel, click **Queues**.

d. To display the *Queue Detail* page, do one of the following:

- Click the name of a queue.
- Select **Choose Action > New**.

2. At the top of the page, click **Customize Fields and Layout** to display the *Queue Customization* page with the *Layout*, and *Related Ticket Fields*:

| Section | Description |
|---|---|
| **Layout Ticket Fields** | This section includes the *Survey*, *Title*, and *Summary* fields, the *Submitter*, *Asset*, and *Device* sections, and any other fields that are not displayed in the *Related Ticket Fields* section. This section also includes any custom fields. Fields in this section can be freely moved around within this section and they appear on the *Ticket* page in the specified order. All fields in this section are displayed in a two-fields-per-row format except the *Resolution* field, which occupies a full row.<br>**NOTE:** If the *Summary* field is hidden, the *Comment* field is displayed on the *New Ticket* page. Text entered in the *Summary* field is stored as the first comment, and the first comment is stored as the Summary in order to maintain backward compatibility. |
| **Related Ticket Fields** | This section includes fields that capture information about related tickets. You can hide these fields, but you cannot change their position.<br>• *PARENT_INFO*: Tickets that have a parental relationship to the selected ticket.<br>• *SEE_ALSO*: Tickets that are similar to, or provide additional information about, the selected ticket.<br>• *REFERERS*: Users who have referenced the ticket. |

3. Click the **Edit** button next to the field you want to customize .
4. In the *Label* and *Required* fields, choose options to use:

| Section | Description |
|---|---|
| **Label** | The name you want to appear next to the field on the *Ticket Detail* page. |
| **Required** | Whether the field is required or optional.<br>• **Not Required**: The field is never required. It can be left blank.<br>• **Always Required**: The field cannot be left blank. It must be completed before tickets can be saved.<br>• **Required on Close**:Tickets cannot be closed until the field is completed. |

5. In the *Permissions* field, choose the permission setting to use:

| Permission setting | Can be viewed by | Can be changed by | Can be created by |
|---|---|---|---|
| **Hidden** | No one | No one | No one |
| **Read Only** | Users, Ticket Owners, Administrators* | No one | No one |
| **Owners Only - Hidden from Users** | Ticket Owners, Administrators* | Ticket Owners, Administrators* | Ticket Owners, Administrators* |

| Permission setting | Can be viewed by | Can be changed by | Can be created by |
|---|---|---|---|
| **Owners Only - Visible to Users** | Users, Ticket Owners, Administrators* | Ticket Owners, Administrators* | Ticket Owners, Administrators* |
| **User Create** | Users, Ticket Owners, Administrators* | Ticket Owners, Administrators* | Users, Ticket Owners, Administrators* |
| **User Modify** | Users, Ticket Owners, Administrators* | Users, Ticket Owners, Administrators* | Users, Ticket Owners, Administrators* |

* Indicates the default setting. You can remove this default setting by clearing the following check box on the *Queue Detail* page: *Allow users with an Administrator role to read and edit tickets in this queue (Administrator Console only)*.

6. **Optional**: Use the following controls to change field display:
   - **: Change the sort order of columns.**
   - **: Change the order of values.**
7. Click **Save** in the row.
8. At the bottom of the page, click **Save** to apply your changes.

# Configure Comment Field Options

The Comment Field Options allow you configure the appearance of the Comment field and Attachments sections on the *New Ticket* page.

1. Go to the Service Desk *Queue Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
   c. On the **Configuration** panel, click **Queues**.
   d. To display the *Queue Detail* page, do one of the following:
   - Click the name of a queue.
   - Select **Choose Action** > **New**.
2. At the top of the page, click **Customize Fields and Layout** to display the *Queue Customization* page.
3. In the *Comment Field Options* section, select or clear these check boxes, as needed.
   - **Display Comment field on ticket input form. Select this check box if you want the Comment field to appear on the ticket input form.**
   - **Display Attachments section on ticket input form. Select this check box if you want the Attachments section to appear on the ticket input form.**

   **When these options are enabled, the Comment field and the Attachments section appear on the *New Ticket* page, when new tickets are created. They are not displayed on the *Ticket Detail* page, when an existing ticket is modified.**
4. At the bottom of the page, click **Save** to apply your changes.

# Define custom ticket fields

You can add custom fields to your Service Desk tickets; the number of custom fields you can create is limited only by the number of columns you can have in a table.

Creating a custom field involves two areas of the *Queue Customization* page:

- The custom field characteristics using the *Custom* field.
- The custom field behavior in the *Ticket Layout* section.

1. Go to the Service Desk *Queue Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
    c. On the **Configuration** panel, click **Queues**.
    d. To display the *Queue Detail* page, do one of the following:
    - Click the name of a queue.
    - Select **Choose Action** > **New**.
2. At the top of the page, click **Customize Fields and Layout** to display the *Queue Customization* page.
3. In the *Custom Fields* section, do one of the following:
    - **Click the Edit button to change a field:** .
    - **Click the Add button to create a field:** .

    **The editable fields appear.**
4. Select the field type from the *Field Type* drop-down list.

    **Options include:**

    - **Checkbox**: Add a check box field type to the ticket.
    - **Date**: Add a formatted date field type to the ticket.
    - **Timestamp**: Add a timestamp field type to the ticket.
    - **Link**: Add and define a link to an internal/external URL to the ticket.
    - **Multiple Select**: Add a multi-value select field type to the ticket; use commas to separate entries.
    - **Notes**: Add a notes field type to the ticket.
    - **Number**: Add an integer selection field type to the ticket.
    - **Single Select**: Add a single value select field type to the ticket.
    - **Text**: Add a text field type to the ticket.
    - **User**: Add a filterable and searchable drop-down list containing users from the user table.

    > **NOTE:** The *User* custom field stores the user ID from the USER table in the HD_TICKET table, which is the table that holds the ticket record. When writing a report or query against the HD_TICKET table, you need to JOIN on the USER table if you want to display the username instead of the user ID in the report.
5. In the *Select Values* field, specify the allowed values.

    **Use the *Select Values* field for the Single Select or Multiple Select custom field types. Enter multiple values as comma-separated strings.**

You can use a database query to specify values for this field with the syntax: `query`: **query_instructions**. Select the **Help** button next to *Custom Fields* to view an example: .

6. Enter a value in the *Default* field.

   **This value is filled in by default when a ticket is created.**

   **NOTE:** If you remove the name of a custom field, values for that field are removed from all tickets. If you rename a custom field, values for that custom field are retained.

   You can use a database query to specify values for this field with the syntax: `query`: **query_instructions**. Select the **Help** button next to *Custom Fields* to view an example: .

7. Click **Save**.
8. Scroll to the *Layout Ticket Fields* section, then click the **Edit** button next to the custom field you configured: .

   **The custom field behavior options become editable.**

9. Enter a name in the *Label* field.
10. In the *Required* field select the option to use:
    - **Not Required. The field is not required.**
    - **Always Required. Fields with this option must be completed before a ticket can be saved and submitted.**
    - **Required on Close. Fields with this option must be completed before a ticket can be closed.**
11. In the *Permissions* field, choose the permission setting to use:

| Permission setting | Can be viewed by | Can be changed by | Can be created by |
|---|---|---|---|
| **Hidden** | No one | No one | No one |
| **Read Only** | Users, Ticket Owners, Administrators* | No one | No one |
| **Owners Only - Hidden from Users** | Ticket Owners, Administrators* | Ticket Owners, Administrators* | Ticket Owners, Administrators* |
| **Owners Only - Visible to Users** | Users, Ticket Owners, Administrators* | Ticket Owners, Administrators* | Ticket Owners, Administrators* |
| **User Create** | Users, Ticket Owners, Administrators* | Ticket Owners, Administrators* | Users, Ticket Owners, Administrators* |
| **User Modify** | Users, Ticket Owners, Administrators* | Users, Ticket Owners, Administrators* | Users, Ticket Owners, Administrators* |

   * Indicates the default setting. You can remove this default setting by clearing the *Allow users with an Administrator role to read and edit tickets in this queue (Administrator Console only)* check box on the *Queue Detail* page.

12. **Optional**: Use the **Sort** button at the top of a column, or drag the move icon, , to change the order in which the fields are displayed.
13. Click **Save** in the row.
14. At the bottom of the page, click **Save** to apply your changes.

# Customize the ticket list layout

You can customize the Service Desk ticket list layout, such as field name, field order, and column size, as needed. This is how the Ticket list is displayed in the queue.

1. Go to the Service Desk *Queue Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
    c. On the **Configuration** panel, click **Queues**.
    d. To display the *Queue Detail* page, do one of the following:
    - Click the name of a queue.
    - Select **Choose Action** > **New**.
2. At the top of the page, click **Customize Fields and Layout** to display the *Queue Customization* page.
3. Scroll down to the **Ticket List Layout** section. To customize the layout, use these buttons:
    - : Change the order in which the fields are displayed.
    - : Edit the field to display, and the width allowed for the column.

    **NOTE:** The width indicates the amount of available page width that is assigned to the field column. For example, if you have 10 columns, and each column is assigned a width of 10, the total of all numbers in the *Width* column would be 100. Therefore, each field column would have a width of 10 percent of the available page width. If the total of all numbers in the *Width* column is more or less than 100, the numbers are normalized to percentages to determine the width. For example, if you have three columns, and you assign a width of 10 to each column, the total of all numbers in the Width column would be 30. However, when normalized to percentages, the width of each column would be approximately 33.3 percent.

    - : Add a ticket field to the ticket layout.
    - : Delete the field from the ticket list.
4. Click **Save** at the bottom of the page.

# Manage ticket templates

Ticket templates allow you to create different ticket types within the same queue. This mechanism allows you to better control the information your end users provide for different request scenarios, without having to create different queues.

Each queue can have one or more ticket templates. If multiple templates exist in a queue, you must select one ticket template as the default template.

1. Go to the Service Desk *Queue Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
    c. On the **Configuration** panel, click **Queues**.

d. To display the *Queue Detail* page, do one of the following:

- Click the name of a queue.
- Select **Choose Action** > **New**.

2. At the top of the page, click **Customize Fields and Layout** to display the *Queue Customization* page.
3. Scroll down to the *Ticket Templates* section.
4. To add a new ticket template to the queue, in the *Ticket Templates* section, click +. For more information on how to create a new ticket template, see Configure a ticket template.
5. To make a ticket template the default template for the selected queue, in the row containing the desired template, in the *Is Default* column, click **Make Default**. Any queue with one or more ticket templates must have a default template.

**When a ticket template is configured as a default template for a queue, each time you create a ticket in that queue without specifying a ticket template, the default template is applied. You can switch between templates, if needed. For more information, see Create tickets from the Administrator Console Ticket page.**

# Configure a ticket template

A ticket template specifies a set of fields that appear on the *Ticket Detail* page. Each queue can have one or more ticket templates.

Use the *Ticket Template Detail* page to configure a new or an existing template.

1. Go to the Service Desk *Queue Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
   c. On the **Configuration** panel, click **Queues**.
   d. To display the *Queue Detail* page, do one of the following:
   - Click the name of a queue.
   - Select **Choose Action** > **New**.
2. At the top of the page, click **Customize Fields and Layout** to display the *Queue Customization* page.
3. Scroll down to the *Ticket Templates* section.
   - To add a new ticket template to the queue, in the *Ticket Templates* section, click +.
   - To modify an existing ticket template, in the *Ticket Templates* section, click the ticket template name.

   **The** *Ticket Template Detail* **page appears.**
4. On the *Ticket Template Detail* page, provide the following information:

| Option | Description |
|---|---|
| **Name** | (Required) The name of the template. |
| **Enabled** | Select this check box when the template is ready for use. This option is useful if you want to prevent this template from being exposed to end users before it is completed. |
| **Description** | A brief description of the template. This text appears as a tooltip on the User Portal, when you point to the link for this ticket template. |

| Option | Description |
|---|---|
| **For process only** | Select this check box if you want this ticket template to be available to process templates. This causes some options in the ticket template to become disabled, because they are not applicable in this context. For example, the **Limit template to selected users** option cannot be applied to process-based ticket templates because each process template has an option in the wizard to associate labels with process template tickets. |
| **Limit template to selected users** | Select this check box if you want to make this template available only to specific users using labels. Then, click **Manage Associated Labels**, and in the *Select Labels* dialog box that appears, select one or more labels associated with the users that you want to grant access to this ticket template. When done, close the dialog box. |
| **Is default** | Select this check box if you want to make this ticket template the default template in the queue. When a ticket template is configured as a default template for a queue, each time you create a ticket in that queue without specifying a ticket template, the default template is applied. You can switch between templates, if needed. For more information, see Create tickets from the Administrator Console Ticket page. |
| **Show in User Portal** | Select this check box if you want end users to have a link to this ticket template on the *Need Help* page in the User Console. |
| **Layout** | Choose a layout that best suits your needs:<br>• **3 Column Layout**: Use this layout if the template contains fields of average height in each row.<br>• **2 Column + Right Panel Layout**: Use this layout if the template contains one or more fields that are taller than the rest of the fields in the same row, like *Summary*, or *Resolution*. Having one tall field in a row where other fields are of average height causes those other fields in the same row to be pushed down, creating random gaps in the layout. When you select this option, you can place all of your tall fields in the right panel, to make optimal use of the vertical real estate. To move a field between the panels, double-click the field.<br>You can switch between the two layouts, if needed. |

5. Add one or more ticket fields to the ticket template. To break up your content into separate sections, use the separator field. This field comes with the same options as the data fields.

   **NOTE:** You can only add ticket fields that exist in the queue to which this ticket template belongs to.

   a. In the *Ticket Form Template* section, drag one or more fields from the area on the right.
   b. As you add the fields, you can arrange them in the way that makes most sense for the use of this template. You can arrange related fields together, or place a field close to an edge of template area, and create empty spaces in between, as needed.
   c. A field can be one-, two-, or three-column wide. To change the width of the field, click until it reaches the desired width.
   d. To delete a field, click .
   e. To configure the field property overrides or certain conditions determining whether a field appears, click . Then, in the dialog box that appears, configure the following options, as required.

| Tab | Option | Description |
|---|---|---|
| **Overrides** | | Use the options on this tab to configure any overrides for field parameters that are already specified in the queue to which this ticket template belongs to. |
| | **Label** | The field name. |
| | **Required** | Indicates if the field value must be provided or not. Select one of the following values:<br>• **Not Required**<br>• **Always Required**<br>• **Required on Close**<br>For more information about these values, see Define custom ticket fields. |
| | **Permission** | Specify which users have access to this field. Select one of the following values:<br>• **Read Only**<br>• **Owners Only - Hidden from Users**<br>• **Owners Only - Visible to Users**<br>• **User Create**<br>• **User Modify**<br>For more information about these values, see Define custom ticket fields. |
| | **Default Value** | Configure the default value for this field.<br>• If this field is associated with pre-defined values, those values appear in the list, and they are available for selection. For example, if you add an *Owner* field to the ticket template, the list displays all users associated with the queue.<br>• If you selected a text field, you can type a desired value, as required. |
| **Conditional Logic** | | Use the options on this tab to show or hide certain fields based on the previously selected values on the ticket page.<br>For example, if you have a ticket template for printer issues, you can display different set of fields that are applicable to different kinds of printer issues. If the user indicates on the ticket that the printer is missing paper, the page displays a set of fields that allow the user to specify the paper format. |
| | **Visibility** | Indicate if you want the field to appear or not when the specified conditions are met. |
| | **When** | Specify the action on the field based on the outcome of conditional expressions. Select one of the following values:<br>• **All conditions matched**<br>• **One of the conditions matched** |

| Tab | Option | Description |
|---|---|---|
| | **Required when visible** | Select this option if you want the end user to populate this field when it appears in the ticket. |
| | **Condition** | Add up to five conditions to control the appearance of the selected field. Each condition can evaluate if the value of a field that appears on the page matches or does not match a certain value. You can only select those fields that have pre-defined values associated with them (and typically appear as multi-value lists on the ticket page), or check boxes. Simple text fields, such as *Title*, are not available for selection.<br>For example, you can create a condition that evaluates whether a printer issue matches *Ink*, *Paper*, or *Other*, and display or hide the selected field, as required. |

**When done, click Update.**

**The dialog box closes.**

6. Click **Apply Changes**.

**TIP:** You can also make a copy of this template by clicking **Duplicate**.

Next, you can preview the ticket template. For more information, see Preview ticket layout.

# Preview ticket layout

When you finish making changes to the way tickets are displayed on the *New Ticket* and *Ticket Detail* pages for a selected ticket template, you can preview the ticket page layout.

There are several preview options to choose from. The type of information on the ticket page depends on the permissions associated with the user accessing the page (User or Owner), and the action type (*New Ticket* or *Ticket Detail*). For example, a Ticket Owner typically has access to more information than a user associated with the ticket. Also, the *New Ticket* page can have some additional controls for providing comments or linking attachments, unlike the *Ticket Detail* page.

**NOTE:** Previewing a ticket template causes it to create and save a ticket. Any values that you make while previewing a ticket are saved by default.

1. Go to the Service Desk *Queue Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the **Configuration** panel, click **Queues**.
   c. To display the *Queue Detail* page, do one of the following:
   - Click the name of a queue.
   - Select **Choose Action** > **New**.
2. At the top of the page, click **Customize Fields and Layout** to display the *Queue Customization* page.
3. On the **Queue Customization** page, scroll down to the *Ticket Templates* section, and click the name of the ticket template that you want to preview.

   **The** *Ticket Template Detail* **page appears.**
4. On the *Ticket Template Detail* page, make your customizations, as required.

**For details, see Configure a ticket template.**

5. At the bottom of the page, click **Save and Preview**.

**The *Ticket Details* page appears.**

6. At the top of the *Ticket Details* page, click **Preview Form As**, and choose one of the following options, as required:

| Option | Description |
|---|---|
| **Input Form - User** | *New Ticket* page, as a User |
| **Input Form - Owner** | *New Ticket* page, as a Ticket Owner |
| **Edit Form - User** | *Ticket Detail* page, as a User |
| **Input Form - Owner** | *Ticket Detail* page, as a Ticket Owner |

The *New Ticket* page refreshes, showing the ticket page based on the selected ticket template and owner details.

# Using parent-child ticket relationships

You can set up any Service Desk ticket as a **parent** ticket and assign child tickets to it.

There are two ways to use the parent-child relationship:

- **Prevent the parent from being closed unless all its child tickets are closed**. This strategy uses the parent ticket as a global to-do list and each child ticket as a separate task on the list. After all the tasks are completed and the child tickets are closed, the parent can be closed.
- **Close all child tickets when you close the parent ticket**. This strategy is useful for tickets that are duplicates of the same problem. For example, if a server crashes and users file duplicate tickets about the issue. When the server is restored, the ticket owner can close the parent and close all of the child tickets at the same time.

Regardless of the strategy you choose, child tickets cannot be orphaned. That is, you cannot close the parent ticket before closing the child tickets.

**NOTE:** You can create many levels of parent-child ticket relationships, but closing child tickets by closing their parent ticket works for only one parent-child level.

## Enable parent-child ticket relationships for a queue

Parent-child ticket relationships are disabled by default. To enable them, you can configure queues to show the *PARENT_INFO* ticket field. If you have multiple queues, you enable parent-child ticket relationships in each queue separately.

1. Go to the Service Desk *Queue Detail* page:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
    c. On the **Configuration** panel, click **Queues**.

d. To display the *Queue Detail* page, do one of the following:

- Click the name of a queue.
- Select **Choose Action** > **New**.

2. At the top of the page, click **Customize Fields and Layout**.
3. Scroll down to the *Related Ticket Fields* section and select the **Edit** button for the *PARENT_INFO* field to make changes to that field's settings:  .
4. Select one of the *Owners Only - Visible to Users* permission settings.
5. Click **Save** in the row.
6. Click **Save** at the bottom of the page.

When you save these changes, ticket owners and administrators (by default) are able to make any ticket in the queue a child or a parent ticket.

# Enable parent tickets to close child tickets

You can configure queues to allow parent tickets to close child tickets. When this is configured, child tickets are closed automatically when parent tickets are closed.

Enable parent-child relationships for queues. See Enable parent-child ticket relationships for a queue.

1. Go to the Service Desk *Queue Detail* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Configuration**.
   c. On the **Configuration** panel, click **Queues**.
   d. To display the *Queue Detail* page, do one of the following:
   - Click the name of a queue.
   - Select **Choose Action** > **New**.
2. In the *User Preferences* section, select the *Allow parent tickets to close child tickets* check box.
3. At the bottom of the page, click **Save**.

The change is applied to the queue. When you close parent tickets, any child tickets are closed automatically.

# Create child tickets for any ticket

Child tickets are Service Desk tickets that have other tickets as their parents. Creating child tickets is useful for organizing tickets and managing related tasks. You can create child tickets for any ticket in any queue that has parent-child ticket relationships enabled.

Parent-child ticket relationships are enabled for the queue. See Enable parent-child ticket relationships for a queue.

1. Go to the Service Desk *Tickets* list:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Tickets**.
2. To create a child ticket for an existing ticket:
   a. On the *Tickets* list, click a ticket title.

b. On the *Ticket Detail* page, select **Choose Action > Save and Create Child**.

**NOTE:** This option is available only if parent-child relationships are enabled for the queue.

c. Provide the required information for the child ticket, then click **Save**.

3. To create a child for a new ticket:
   a. On the *Tickets* list, select **Choose Action > New**.
   b. On the *Ticket Detail* page, provide the required information for the parent ticket.
   c. Select **Choose Action > Save and Create Child.**

**NOTE:** This option is available only if parent-child relationships are enabled for the queue.

   d. Provide the required information for the child ticket, then click **Save**.

You can use parent tickets to organize duplicate tickets, and you can enable parent tickets to close child tickets. See:

- Use parent tickets to organize duplicate tickets
- Enable parent tickets to close child tickets

# Designate tickets as parents and add existing tickets as their children

You can designate tickets as parents, and then set up parent-child relationships among tickets. You need to designate tickets as parents before you can add existing tickets to them as children.

Enable parent-child relationships for a queue. See Enable parent-child ticket relationships for a queue.

1. Go to the Service Desk *Ticket Detail* page.
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Tickets**.
   c. To display the *Ticket Detail* page, do one of the following:
   - Click the name of a ticket.
   - Select **New > New Ticket From Queue > Queue name**.

     If you have a high number of queues, use the search box to quickly find a specific queue.
2. In the *Related Ticket Information* section, verify that the *Parent Ticket* section is visible. If it is not displayed, verify that parent-child relationships are enabled for the queue. See Enable parent-child ticket relationships for a queue.
3. Select the *Allow this ticket to be a parent* check box to make this ticket a parent.
4. Click **Save**.
5. To add existing tickets as child tickets:
   a. Click **Add Tickets** under the **Child Tickets** section.
   b. Enter the child ticket number(s), separated by a comma, or use the **Select ticket to add** drop-down list to find the ticket(s) to add.
6. Click **Save** to save any changes to the ticket.

# Use a parent ticket as a to-do list

The Service Desk parent-child relationship can be used to group tasks that need to be performed by different users, such as tasks that need to be completed when you hire a new employee. This enables you to track the tickets as a group.

- Enable parent-child relationships. See Enable parent-child ticket relationships for a queue.
- Verify that the ticket queue allows parents to close child tickets. See Enable parent tickets to close child tickets.

**TIP:** If you expect a multi-phase task to be repeated regularly, consider making it a process ticket. See Using Service Desk processes.

1. Create a ticket to serve as a parent. See Designate tickets as parents and add existing tickets as their children.
2. From the parent ticket, add child tickets for each required task on the to-do list.
3. Close each child ticket as tasks are completed.
4. When prompted, close the parent ticket. This prompt appears when the last child task is closed.

**NOTE:** If the resolution for the parent ticket is empty, the resolution from the child ticket will be added to the parent resolution.

# Use parent tickets to organize duplicate tickets

When multiple tickets are filed for the same issue, you can use parent tickets to organize and manage the duplicate tickets as groups.

Enable parent-child relationships for queues, and enable parents to close child tickets. See:

- Enable parent-child ticket relationships for a queue
- Enable parent tickets to close child tickets

1. Designate one of the duplicate tickets as the parent. See Designate tickets as parents and add existing tickets as their children.
2. Change the remaining duplicate tickets to child tickets:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. Click **Service Desk** to display the *Tickets* page.
    c. Select all of the tickets that you want to change to child tickets.
    d. In the *Choose Action* menu, select **Add To Parent**.

**NOTE:** **Add to Parent** appears only if you are viewing tickets in a single queue, and that queue has parent-child ticket relationships enabled. It is not available if you are in the *All Queues* view. See Enable parent-child ticket relationships for a queue.

**The selected tickets become child tickets of the parent.**

3. When the issue is resolved, close the parent ticket.

**The child tickets are automatically closed.**

# Using ticket approvers

You can require that a particular user or group approve tickets before tickets are opened or closed. In addition, you can require that only users who are set up as approvers can close tickets. If you have multiple queues, you can configure approver settings for each queue separately.

Setting up ticket approvers involves the following workflow:

- Create a label to specify approvers.
- Add users (approvers) to the label. You choose approvers from the list of all users regardless of queue, so they are not limited to a single queue.
- Configure the *APPROVAL_INFO* ticket field in the queue to require this feature.

**NOTE:** Approvers only have access to the *Approval* and *Approval Note* fields on a ticket. The *Approval* field has the following options:

- Approved
- Rejected
- More Information Needed

**NOTE:** The *Approval* field must be set before the ticket can be opened or closed, depending on how the *Required* option is configured. The *Approval Note* field is optional. Approvers can see all of the tickets they need to approve by clicking **Service Desk** > **Tickets**, then clicking **View By** > **My Approvals**.

## Configure ticket approvers

You can require that a particular user or group approve a ticket before it can be opened and closed in a queue.

1. Go to the *Users* list:
    a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
    b. On the left navigation bar, click **Settings**, then click **Users**.
2. Select the check box next to a user.
3. In the *Choose Action* menu, select **Add Label**.
4. In the *Add Label* window, enter a name for the label, for example, Ticket Approvers, then click **Add Label**.

    **TIP:** Avoid using backslashes (\) in label names. If you need to use a backslash in a label name, add a second backslash (\\) to escape it.
5. Click **Service Desk** > **Configuration** > **Queues** to display the *Service Desk Queues* page.
6. Click the name of a queue to display the *Queue Detail* page.
7. In the *User Preferences* section, clear the *Allow all users as approvers* check box, then click **Save**.
8. In the *Ticket Defaults* section, click **Customize These Values** to display the *Queue Customization* page.
9. In the *Ticket Layout* section, click the **Edit** button for the *APPROVAL_INFO* row: .

    **The editable** *APPROVAL_INFO* **row appears.**
10. In the *Label* field, enter the name of the label you created for approvers in 4.
11. Select **Required on close** in the *Required* field.

**Selecting Required on close or Always Required enables the approval requirement for all tickets in this queue. When you select one of these settings, a ticket must have an approver specified before it can be worked on or closed, depending on the option you choose.**

12. Click the **Save** button in the row, then click **Save** at the bottom of the page.

The Approval feature is enabled, and the approval options you selected are applied to tickets in the queue.

## Approving tickets by email

After ticket approval is configured, the designated ticket approver can send an email message to approve a ticket, add an approval note, or designate a different approver.

For details on changing tickets by email, see Creating and managing tickets by email. For a list of the fields used to change the approval fields, see Changing ticket approval fields using email.

# Configuring SMTP email servers

You can configure your Service Desk to use SMTP email servers.

For instructions on setting up a POP3 email server, see Configuring email settings.

# Connect your email server to the appliance

You can connect your email server to the appliance so that the Service Desk can receive email from your email server. The process for connecting depends entirely upon your email configuration.

If you are using Microsoft Exchange Server, see the Microsoft documentation on transport rules.

1. Open the Exchange Server Manager.
2. **Optional**: Create a Virtual SMTP server. This is not necessary if you have an SMTP server.
3. Create a Virtual SMTP Connector called appliance_HelpDesk.
4. Select **Administrative Groups** > **Connectors** > **appliance_HelpDesk** to display the *appliance_HelpDesk Properties* page.
5. Click **General**.
6. Click **Use DNS to route each address space on this connector**.

   **The** *Local Bridgeheads* **section becomes available.**
7. Complete the *Local Bridgeheads* section:

| Server | Virtual Server |
|---|---|
| **your_exchange_servername** | Default SMTP Virtual Server |

8. Click the **Address Space** tab.
9. Click **Add** to add an address space for the appliance SMTP server. Use the following settings:
   - **Type**: SMTP
   - **Address**: Enter the fully qualified appliance server name. The syntax is k1000.**mydomain**.com.
   - **Cost**: Set this to one level above the other connectors. That way, appliance email is filtered first, and no appliance email inadvertently leaves the network.
10. Under *Connector scope*, click **Entire organization**.
11. Leave **Allow messages to be relayed to these domains** disabled.
12. Click **OK** to save and close the *appliance_HelpDesk Properties* page.

Your email server is now connected to the appliance.

# Using internal and external SMTP servers

Depending on the needs of your environment, you can set up your email to go through the internal SMTP server or an external SMTP server.

The appliance includes an internal SMTP server. If most of the email traffic coming to the appliance is from and to your Service Desk staff, it might make sense to use this internal server. To set it up, see Use the internal SMTP server.

If all of your email must go through a specific external SMTP server, direct the appliance to use this server. See Use an external SMTP server or Secure SMTP server.

## Use the internal SMTP server

You can configure the appliance network settings to use the internal SMTP email server.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Network Settings** to display the *Network Settings* page.
3. In the *Email Configuration* section, clear the **Enable SMTP Server** check box. This setting refers to an external SMTP server.
4. Click **Save**.
5. If prompted, click **Yes** to restart the appliance and apply the changes.

The internal SMTP server is set to process outgoing email. For information about configuring SMTP settings for queues, see Create and configure POP3 email accounts.

## Use an external SMTP server or Secure SMTP server

To use an external SMTP server, you need to set up an account for the SMTP server in the appliance network settings, and you need to set up an account on the SMTP server for each Service Desk queue.

To use secure SMTP (SSMTP), select the SSL setting in each queue. This is necessary because Microsoft does not allow aliasing from addresses in the Exchange 365 service.

1. Confirm that your external router and firewall allow the appliance to use port 25 to send email.
2. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
3. Click **Network Settings** to display the *Network Settings* page.
4. To use an external SMTP server, select **Enable SMTP Server** in the *Email Configuration* section, then specify SMTP server options:

| Option | Description |
|---|---|
| **Server** | Specify the hostname or IP address of an external SMTP server, such as **smtp.gmail.com**. External SMTP servers must allow anonymous (non-authenticated) outbound email transport. Ensure that your network policies allow the appliance to contact the SMTP server directly. In addition, the mail server must be configured to allow the relaying of email from the appliance without authentication. If you specify an IP address, enclose the address in brackets. For example `[10.10.10.10]`. |
| **Port** | Enter the port number to use for the external SMTP server. For standard SMTP, use port 25. For secure SMTP, use port 587. |
| **Login** | Enter the username of an account that has access to the external SMTP server, such as **your_account_name**@gmail.com. |
| **Password and Confirm Password** | Enter the password of the specified server account. |

5. Test the SMTP configuration.
   a. Click **Test Connection**.
   b. In the *Connection Test SMTP* dialog box that appears, type the email address to which you want to send a test email using the newly configured SMTP server, and click **Send Test Email**.

   **The *Connection Test SMTP* dialog box refreshes, showing the test results. status of the email operation. If the test fails, verify your configuration, and try again.**
6. **Optional**: To configure a different SMTP or POP3 server for each queue, go to the *Configure Service Desk Queue Email Settings* page:
   a. On the left navigation bar, click **Service Desk**, then click **Configuration**.
   b. On the **Configuration** panel, in the *Email Configuration* section, click **Configure Service Desk Queue Email Settings**.

   **The *Service Desk Queue Email Settings* page appears.**
7. If you want to use an external SMTP server for emails associated with this queue, use the settings in the *Outbound Email Setting* section.
   a. Select the *Specify Queue specific SMTP Settings* check box.
   b. Specify the following options:

| Option | Description |
|---|---|
| **SMTP Server** | Specify the hostname or IP address of an external SMTP server, such as **smtp.gmail.com**. External SMTP servers must allow anonymous (non-authenticated) |

| Option | Description |
|---|---|
| | outbound email transport. Ensure that your network policies allow the appliance to contact the SMTP server directly. In addition, the mail server must be configured to allow the relaying of email from the appliance without authentication. |
| **SMTP Port** | Enter the port number to use for the external SMTP server. For standard SMTP, use port 25. For secure SMTP, use port 587. |
| **SMTP Username** | Enter the username of an account that has access to the external SMTP server, such as **your_account_name**@gmail.com. |
| **SMTP Password** | Enter the password of the specified server account. |

8. Click **Save**.

**The appliance is configured to forward email to the designated SMTP server. If you have multiple queues, repeat the preceding steps for each queue.**

**TIP:** By default, the appliance accepts Service Desk email only when the sender's email address matches a user account on the appliance. To change this setting, see the setting, *Accept email from unknown users* in the section Configuring Service Desk ticket queues.

# Maintenance and troubleshooting

The appliance has automatic backup capabilities, logs, and troubleshooting tools that help administrators maintain and monitor system health.

# Maintaining the appliance

Appliance maintenance includes establishing a backup schedule, verifying system health, and applying updates to appliance software.

## Tracking changes to settings

If History subscriptions are configured to retain information, you can view the details of the changes made to settings, assets, and objects.

This information includes the date the change was made and the user who made the change, which can be useful during troubleshooting. See About history settings.

## About appliance backups

Appliance backups are files that are used to restore your appliance in the event of a data loss or other disaster.

There are two kinds of appliance backup files:

- **Base**: A backup of the file system. Base backup files are generally created once a week.
- **Differential**: A backup of the Base (file system) files that have changed since the most recent Base backup and a backup of database files. Differential backups reference the most recent Base backup file available.

To restore files, you must have a matched pair of Differential and Base backup files. Paired backup files reference the same appliance version number and date, and only paired backup files can be used to restore the appliance.

**NOTE:** Backups are created while the appliance is running. The appliance is not taken offline during the backup process. Restoring the appliance to a backup and resetting the appliance to factory settings, however, continue to require that the appliance be taken offline.

In addition, there are three types of backup processes:

- **Scheduled daily backups**: In most cases, daily backups include only Differential backup files. If there is no Base backup, or if the most recent Base backup is more than seven days old, the daily backup includes both Base and Differential backup files. This backup is known as a full backup. By default, daily backups are scheduled to occur at 02:00, but you can change that schedule. See Set the daily backup schedule and the number of backups to retain.
- **Scheduled monthly backups**: Monthly backups occur on the last day of the month, and you cannot change the schedule of monthly backups. This backup includes the most recent Base backup and the latest Differential backup files collected after the Base backup.
- **Backups initiated using the Run Now command**: When you click **Run Now** on the *Backup Settings* page, the appliance generates a full backup, which includes both Base and Differential backup files.

You can disable backups, which schedules existing backup data for deletion and disables daily and monthly backups. See Disable or enable appliance backups.

**TIP:** Always back up appliance data before installing updates or upgrading appliance software.

# Set the daily backup schedule and the number of backups to retain

You can configure the daily backup schedule and the number of backups to retain.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Backup Settings** to display the *Backup Settings* page.
3. In the *Retention* section, specify the following settings:

| Option | Description |
|---|---|
| **Daily** | The number of daily backups to retain on the appliance. You can retain up to seven daily backups. |
| **Monthly** | The number of monthly backups to retain on the appliance. You can retain up to two monthly backups. Monthly backups occur on the last day of the month, and you cannot change the schedule of monthly backups. |

4. In the *Schedule* section, specify the schedule for running **daily** backups.

   **Times are listed in the 24-hour clock format, and you can select intervals of 5 minutes. For example, to schedule the daily backup for 5 minutes past midnight, select 0:05.**

   **TIP:** To ensure that backup logs are not turned over during daily log maintenance, schedule daily backups to occur after midnight.
5. Click **Save**.

The settings are applied. When the next scheduled backup runs, older backup files are removed if the number of backups retained on the appliance exceeds the number specified in the *Retention* section.

# Back up the appliance manually

You can back up appliance manually any time. In addition, you should manually back up the appliance before you install appliance updates or perform upgrades.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Backup Settings** to display the *Backup Settings* page.
3. At the bottom of the page, click **Run Now**, then click **Yes** to confirm.

   **The system performs a full backup, which includes both Base and Differential backup files.**

When the backup is complete, the *Logs* page appears.

If you are backing up an appliance because you want to migrate it to a different appliance, power off the old appliance. If the old appliance is kept on, it may cause conflicts when the same settings are uploaded to the new appliance.

# Download backup files from the Administrator Console

For a greater level of recoverability, you can download backup files from the Administrator Console and save them to a different location.

You can also access backup files through FTP. See Access backup files through FTP.

**NOTE:** To restore files, you must have a matched pair of Differential and Base backup files. Paired backup files reference the same appliance version number and date, and only paired backup files can be used to restore the appliance.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Backup Settings** to display the *Backup Settings* page.
3. In the *Onboard Backups* section download a matched pair of Differential and Base backup files:
   a. Select the date associated with a pair of backup files.

      **The Differential file has `incr` in the file name, while the Base file uses `base`. For example, `<date>_k1_incr_<version>.tgz` and `<date>_k1_base_<version>.tgz`.**

      **SHA256 checksums also appear for each backup file. The checksums are calculated at the time of backup creation. If the checksum of a downloaded backup file does not match the checksum displayed on this page, the transfer may have been interrupted (resulting in corrupt data,) or data on disk may have been manipulated.**

   b. If prompted, select a download location for each file.

**NOTE:** The saved backup files reflect the appliance data from the most recent automatic backup time (2:00 AM by default) for a selected date. If you need a backup that reflects the current appliance state, you can perform a manual backup. For more information, see Back up the appliance manually.

# Access backup files through FTP

You can use FTP to access appliance backup files. This is useful if you want to create a process on a different server to access the backup, or if your backup files are more than 1 GB and accessing them through the Administrator Console causes the browser to time out.

1. Verify that Security Settings enable FTP access to backup files.

   **See Configure security settings for the appliance.**

2. Do one of the following:
   - **On a Windows device, open a command prompt, then at the `C:\` prompt, enter: `ftp k1000`.**
   - **Using any FTP client, access `ftp k1000`.**
3. Enter the login credentials.

   **The default credentials are:**

   Username: kbftp

   Password: getbxf

   **NOTE:** To change the FTP password, see Configure security settings for the appliance. You cannot change the FTP username.
4. To access the backup files from a command prompt, enter the following commands:

```
> type binary
> get k1_base.tg
> get k1_base.tgz
> get k1_incr.tgz
>close
>quit
```

# About deleting appliance backup data

You can delete appliance backup data by disabling appliance backups.

Disabling backups can be useful if you want to reduce the amount of data being stored by the appliance. For example, if your virtual appliance uses virtual machine snapshots to back up appliance data instead of using the appliance backup files, you can disable appliance backups to reduce the size of the virtual machine.

**IMPORTANT: Disabling backups prevents you from restoring appliance settings and data from the Administrator Console in the event of a disaster. As a result, you should disable appliance backups only if you are using an alternative method of backing up data, such as virtual machine snapshots for the virtual appliance. Disabling backups is not recommended for physical appliances.**

## *Disable or enable appliance backups*

By default, appliance backups are enabled. You can disable and enable appliance backups as needed.

When you disable appliance backups, existing backup files are scheduled for deletion at the next scheduled backup time.

**IMPORTANT: Disabling backups prevents you from restoring appliance settings and data from the Administrator Console in the event of a disaster. As a result, you should disable appliance backups only if you are using an alternative method of backing up data, such as virtual machine snapshots for the virtual appliance. Disabling backups is not recommended for physical versions of the appliance.**

1. **Optional**: To preserve the ability to restore data and settings in the event of a disaster, download the latest backup files from the Administrator Console and save them to a different location before you disable backups. See Download backup files from the Administrator Console.
2. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
3. Click **Backup Settings** to display the *Backup Settings* page.
4. In the *Retention* section, select **Disable Backups**.
5. Click **Save**.

   **The following actions are performed:**

   - All backup options are disabled.
   - Backup retention settings are set to 1 for daily backups and 0 for monthly backups.
   - Existing backup files are scheduled for deletion from the appliance at the next scheduled backup time.
6. To enable appliance backups, clear the **Disable Backups** check box, then click **Save**.
7. **Optional**: Click **Run Now** to generate a full backup of the system, including both Base and Differential backup files.

# Configure offboard backup transfer

Appliance backups allow you to restore your appliance in the event of a data loss or other disaster. When you run into a problem with the appliance OS or the database, and you are asked to re-image the appliance, if you do not copy the backup files to a safe location prior to re-imaging, the backups cannot be restored. The *Backup Settings* page allows you to configure the transfer of backup data to an external location automatically. When configured, the appliance copies nightly backup files to an external location each time it completes the backup process.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Backup Settings** to display the *Backup Settings* page.
3. In the *Offboard Backup Transfer Settings* section, clear the **Disable Offboard Backup Transfer**.
4. Click **Offboard Backup Transfer Protocol**, and select the protocol that you want to use to transfer the backup files: **Samba**, **FTP**, or **Secure FTP**.

| Option | Description |
|---|---|
| **Disable Offboard Backup Transfer** | Indicates if offboard backup transfer is disabled or enabled. Clear this check box to enable offboard backup transfer. |

| Option | Description |
|---|---|
| **Offboard Backup Transfer Protocol** | The protocol that you want to use to transfer the backup files: **Samba**, **FTP**,**Secure FTP**, **Azure Blob Storage**, or **Amazon S3**. If you want to use Azure Blob Storage or Amazon S3 you must have a storage account set up. For more details, see your MS Azure and Amazon documentation.<br>**IMPORTANT: Secure FTP (SFTP), Azure Blob Storage, and Amazon S3 protocols are the best practice recommendation for secure transfers with built-in integrity checking. While FTP and Samba options are also available, they are not recommended due to inherent vulnerabilities in these protocols and unencrypted data transfer.** |
| **Offboard Backup Transfer Server** | The host name or the IP address of the machine to which you want to copy the backup files. |
| **Path or Share Name** | The path of the directory on the machine to which you want to copy the backup files. |
| **User Name** | The name of the user account that you want to use to access the destination machine. |
| **User Password** | The password associated with the user name. |

5. To verify if you can access the destination machine using the provided address and credentials, click **Test**.

   **A message appears, indicating the success of the operation. If access to the destination server fails, this is indicated in the message. Verify your configuration and make changes, as applicable.**
6. Click **Save**.

# Restoring the appliance

You can restore appliance data using backup files, provided that backups are enabled and a matching pair of Differential and Base backup files are available. In addition, you can restore the appliance to its factory settings at any time.

Restoring the appliance destroys the data currently configured in the appliance. Quest KACE recommends that you off-load any backup files or data that you want to keep before you restore the appliance. In addition, restoring the appliance requires that the appliance be taken offline. The Administrator Console and the User Console are unavailable during the restore process.

**NOTE:** To restore files, you must have a matched pair of Differential and Base backup files. Paired backup files reference the same appliance version number and date, and only paired backup files can be used to restore the appliance.

## Restore the appliance using the most recent backup

The appliance has a built-in ability to restore settings from the most recent backup directly from the appliance backup drive.

Appliance backups are enabled and you have a matching pair of Differential and Base backup files available. See Disable or enable appliance backups.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Backup Settings** to display the *Backup Settings* page.
3. In the *Onboard Backups* section, select the most recent backup files.
4. Click **Restore from Backup**, then click **Yes** to confirm.

   **The appliance is restored and restarted. The Administrator Console and the User Console are unavailable during the restore process. Progress appears in the browser window.**

# Upload backup files to the appliance

If you have copied your backup files to an off-appliance location, you can upload those files to the appliance manually using the Administrator Console, FTP, or Client Drop location process. FTP and Client Drop location uploads are useful if your backup files are more than 1 GB and uploading them through the Administrator Console causes the browser to time out.

You have copied backup files to an off-appliance location.

**NOTE:** To restore files, you must have a matched pair of Differential and Base backup files. Paired backup files reference the same appliance version number and date, and only paired backup files can be used to restore the appliance.

- To upload files using the Administrator Console:
  1. Go to the appliance *Control Panel*:
     - If the Organization component is not enabled on the appliance, log in to the Administrator Console, `http://`**appliance_hostname**`/admin`, then click **Settings**.
     - If the Organization component is enabled on the appliance, log in to the System Administration Console, `http://`**appliance_hostname**`/system`, or select **System** in the drop-down list in the top-right corner of the page, then click **Settings**.
  2. Click **Backup Settings** to display the *Backup Settings* page.
  3. In the *Uploads* section, under the *Differential* heading, click **Browse** or **Choose File**, to locate the Differential file you want to upload.

     **Any files larger then 1.5 GB can only be uploaded using FTP. For more information, see the procedure below. When files are uploaded through FTP, they appear available for download in the *Restore* section.**
  4. In the *Uploads* section, under the *Base* heading, click **Browse** or **Choose File**, to locate the matching Base file you want to upload.

     **NOTE:** To restore files, you must upload pairs of Differential and Base backup files. Paired backup files reference the same appliance version number and date, and only paired backup files can be used to restore the appliance.
  5. Click **Upload Files**.

     **The uploaded files appear in the *Backups* section of the *Backup Settings* page.**
- To upload your backup files to the appliance using FTP:

1. Verify that Security Settings enable FTP access to backup files.

   **See Configure security settings for the appliance.**

2. Do one of the following:

- On a Windows device, open a command prompt, then at the `C:\` prompt, enter: `ftp k1000`.
- Using any FTP client, access `ftp k1000`.

3. Enter FTP login credentials.

   **The default credentials are:**

Username: kbftp

Password: getbxf

**NOTE:** To change the FTP password, see Configure security settings for the appliance. You cannot change the FTP username.

**The uploaded files appear in the *Backups* section of the *Backup Settings* page.**

- To use the Client Drop location method for uploading backup files, place your backup files in the Client Drop location on the appliance.

  **Files placed in the Client Drop location are automatically identified as backup files and they become available for selection on the *Backup Settings* page within five minutes. See Copy files to the appliance Client Drop location.**

Restore the appliance using the uploaded backup files. See Restore the appliance from backups.

# Restore the appliance from backups

You can restore the appliance from backup files as needed.

If you are restoring files from an off-appliance location, you have uploaded a matching pair of Differential and Base backup files to the appliance. See Upload backup files to the appliance.

If you are migrating an appliance to a new appliance, the two appliances must be the same version. If that is not the case, you must upgrade the old appliance to the version running on the new appliance.

1. Go to the appliance *Control Panel*:

   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**

2. Click **Backup Settings** to display the *Backup Settings* page.
3. In the *Onboard Backups* section, select the pair of files you want to restore.
4. If you want to disregard the network configuration from the backup files, and specify a new configuration under *Restore Options*, select **Override Network Configuration**, and specify the applicable options.

   **A set of options appears on this page when you select this check box. They are identical to the appliance network settings that you need to set up during an initial configuration. For complete information, see Change appliance network settings.**

5. Click **Restore from Backup**, then click **Yes** to confirm.

   **The appliance is restored and restarted. The Administrator Console and the User Console are unavailable during the restore process. Progress appears in the browser window.**

   This process can take up to one hour and the appliance will be unavailable during this time. The amount of time for a restore depends on the size of the backup files. Once the restore completes, the appliance

reboots. After the reboot, the appliance will be in the same state as when the backup files were created. This includes the same authentication settings, network settings, and so on.

If the IP settings are not set upon reboot, try rebooting one or two times, to properly set the IP settings. If not they are not set using that method, try using the Console login `netdiag/netdiag` utility, and update the IP address there.

The appliance is restored and restarted.

## Restore the appliance to factory settings

The appliance has a built-in ability to restore factory settings. This is useful if you encounter problems and you need to remove all custom configurations.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Backup Settings** to display the *Backup Settings* page.
3. At the bottom of the page, click **Factory Reset**, then click **Yes** to confirm.

   **The appliance is restored and restarted.**
4. Re-configure the appliance as needed.

**See Configuring the appliance.**

# Updating appliance software

You can check for and install appliance software updates. When you update the appliance, custom configurations, such as Service Desk and Asset customizations, are preserved.

## Check for and apply advertised appliance updates

The appliance checks with the servers at Quest daily to determine whether appliance software updates are available. These updates are referred to as advertised updates.

If updates are available, an alert appears on the *Home* page the next time you log in with Administrator account privileges.

**TIP:** Always back up appliance data before installing updates or upgrading the appliance software. For instructions, see About appliance backups.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. On the left navigation bar, click **Appliance Updates** to display the *Appliance Updates* page.
3. In the *Server* section, click **Check for Update** to display the *Logs* page.

**Results of the check appear in the log.**

4. When an update is available, back up your database and files.

   **See About appliance backups.**

5. Click **Update**.

The update is applied. The Administrator Console is unavailable until the update is complete. Progress appears in the browser window and in the Administrator Console.

# Upload an update file to the appliance manually

If you have an update file from Quest, you can upload it to the appliance manually.

Before you update the appliance manually, verify that your appliance meets the minimum server version requirements as specified in the release notes for the update. If your appliance does not meet these requirements, you must upgrade to the minimum version before you update the appliance software. See View the appliance version, model, and license information.

1. Back up your database and files. See About appliance backups.
2. Download the `k1000_upgrade_server_`**XXXX**`.kbin` file, and save it locally.
3. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
4. On the left navigation bar, click **Appliance Updates** to display the *Appliance Updates* page.
5. In the *Manually Update* section:
   a. Click **Browse** or **Choose File**, and locate the update file.
   b. Click **Update**, then click **Yes** to confirm.

The update is applied. The Administrator Console is unavailable until the update is complete. Progress appears in the browser window and in the Administrator Console.

# Verify updates

After applying an update, you can verify successful completion by reviewing the update log.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Logs** to display the *Logs* page.
3. In the *Log* drop-down list, select **Updates**.
4. Review the log for error messages and warnings.
5. Click **Need Help** in the top-right corner of the page, then click **About** at the bottom of the *Help* panel to verify the current version. See View the appliance version, model, and license information.

## Update the appliance license key

You might need to update the appliance license key if you expand your license capabilities or purchase additional components, such as the Organization component.

1. Go to the appliance *Control Panel*:
    - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
    - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. On the left navigation bar, click **Appliance Updates** to display the *Appliance Updates* page.
3. In the *License Information* section, enter your license key.
4. Click **Update**.

# Reboot or shut down the appliance

You might need to reboot or shut down the appliance from time to time when troubleshooting or performing maintenance tasks.

In addition, you need to shut down the appliance before you unplug it.

**TIP:** To shut down the physical appliance any time, press the power button once, quickly.

1. Go to the appliance *Control Panel*:
    - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
    - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. On the left navigation bar, click **Appliance Updates** to display the *Appliance Updates* page.
3. In the *Appliance Controls* section, do one of the following:
    - **Click Reboot. The appliance restarts.**
    - **Click Reboot and check database. The appliance restarts and then verifies the database.**
    - **Click Shutdown. The appliance shuts down, and it is safe to power-down the appliance hardware.**

# Update OVAL definitions from KACE

Although the definitions for OVAL (Open Vulnerability Assessment Language) tests are updated automatically on a scheduled basis, you can retrieve the latest files manually from the *Appliance Updates* page.

**For more information about OVAL definitions, see Maintaining device and appliance security.**

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. On the left navigation bar, click **Appliance Updates** to display the *Appliance Updates* page.
3. In the *OVAL Catalog* section, click **Check for Update**, then click **Yes**.

# Understanding the daily run output

The appliance **daily run output** is a report that shows appliance status information, such as disk status, network interface status, and appliance up-time averages.

The report is automatically emailed to the system administrator every day at 02:00. To change the system administrator email address, see Configure appliance General Settings with the Organization component enabled or Configure appliance General Settings without the Organization component.

## Disk status

The *daily run output* report, which is automatically emailed to the system administrator every day, includes a *Disk status* table.

| Filesystem | Size | Used | Avail | Capacity | Mounted on |
|---|---|---|---|---|---|
| /dev/twed0s1a | 38G | 3.6G | 32G | 10% | / |
| devfs | 1.0K | 1.0K | 0B | 100% | /dev |
| fdescfs | 1.0K | 1.0K | 0B | 100% | /dev/fd |
| procfs | 4.0K | 4.0K | 0B | 100% | /proc |

**The following columns appear in the *Disk status* table.**

| Column heading | Description |
|---|---|
| **Filesystem** | The name of the file system. |
| **Size** | The amount of disk space allocated to the specified file system. |
| **Used** | The amount of disk space in use by the specified file system. |
| **Avail** | The amount of free disk space available to the specified file system. |
| **Capacity** | The percentage of disk space available to the specified file system. |
| **Mounted on** | The disk partition on which the specified file system is located. |

# Appliance network interface status

The *daily run output* report, which is automatically emailed to the system administrator every day, includes a *Network interface status* table.

Make sure the *Ierrs/Oerrs* are zero. Other values indicate network failures.

If you notice consistent errors, contact Quest Support at https://support.quest.com/contact-support.

```
Network interface status:
Name    Mtu Network       Address              Ipkts Ierrs    Opkts Oerrs  Coll
em0    1500 <Link#1>      00:0c:29:83:85:63 30383751     0 29509710     0     0
em0    1500 192.168.200.0 MyK1              30379356     - 29509310     -     -
plip0  1500 <Link#2>                            0     0        0     0     0
lo0   16384 <Link#3>                       392328     0   392328     0     0
lo0   16384 fe80:3::1     fe80:3::1             0     -        0     -     -
lo0   16384 localhost     ::1                 216     -      216     -     -
lo0   16384 your-net      localhost           392112     -   392112     -     -
```

# Appliance up-time and load averages

The *daily run output* report, which is automatically emailed to the system administrator every day, shows the appliance up-time and load averages.

The load averages vary depending on the appliance load when the report runs.

The following indicates the amount of time the appliance has been up since the last time it was powered off. In this example, no users are logged on to the appliance.

```
Local system status:
 2:01AM up 7 days, 4:12, 0 users, load averages: 0.05, 0.20, 0.15
```

# Email system health

The *daily run output* report, which is automatically emailed to the system administrator every day, shows the health of the email system.

**The following messages are the standard FreeBSD messages regarding the health of email systems.**

There should be no email messages in the queues. If messages appear in the queues, see Verify SMTP settings.

```
Mail in local queue:
/var/spool/mqueue is empty
      Total requests: 0
Mail in submit queue:
/var/spool/clientmqueue is empty
      Total requests: 0
Security check:
    (output mailed separately)
Checking for rejected mail hosts:
Checking for denied zone transfers (AXFR and IXFR):
tar: Removing leading /' from member names
```

### *Verify SMTP settings*

If email messages appear in the queues, verify your SMTP settings.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Network Settings** to display the *Network Settings* page.

## Appliance backup status

The *daily run output* report, which is automatically emailed to the system administrator every day, shows the appliance backup status.

The following appliance-specific message shows that the backups have been successfully completed and are on the /kbackup disk, available through FTP.

See Access backup files through FTP.

```
[2015-06-21 02:01:24 -0700] Backup: Complete.
```

## Status of RAID drives

For physical KACE SMAs, the status of RAID drives is displayed in the server logs. This status is available for physical KACE SMAs only.

The following log message indicates that RAID drives are functioning properly:

```
Logical Drive 0 (RAID 5) Information
RAID Array Status: Logical Drive 0 is not rebuilding: status is Optimal.
Status: Online. Spun Up
```

If RAID drives are degraded or not rebuilding properly, contact Quest Support at https://support.quest.com/contact-support.

# Troubleshooting the appliance

The appliance includes tools, logs, and reports to help you monitor system health and resolve issues.

# Using Troubleshooting Tools

You can use troubleshooting tools to identify and resolve issues.

# Verify the status of devices on the network

To verify the status of devices on the network, you can use the ping troubleshooting utility.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. On the left navigation bar, click **Support** to display the *Support* page.
3. In the *Troubleshooting Tools* section, click **Run diagnostic utilities** to display the *Diagnostic Utilities* page.
4. In the text box, enter the IP address of a device.
5. Select **ping** in the drop-down list.
6. Click **Run Now**.

   **Results are displayed.**
7. To use other utilities, select them in the drop-down list, then click **Run Now**.

# Identify device issues

Use the *Device Issues* list to see if any of your managed devices have issues connecting to the agent, or other issues.

The appliance relies on the KACE Agent to collect information from agent-managed devices in your organization. If a device encounters issues connecting to the agent, or other issues related to their environment, this prevents the appliance from obtaining inventory information for that device.

The *Device Issues* list page identifies any agent-managed devices whose information does not appear in the inventory due to any of the following issues:

- WMI (Windows Management Instrumentation) corruption.
- Desktop heap exhaustion.

  **TIP:** In most cases, this problem can be cleared by simply restarting the device.
- Failure to write to `amp.conf`.

For more information about these issues, visit https://support.quest.com/kace-systems-management-appliance/kb.

1. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
2. Select **Settings** > **Support** to display the *Support* page.
3. In the *Troubleshooting Tools* section, click **Device Issues** to display the *Device Issues* page.
4. Review the list of faulty devices on the *Device Issues*, and take any steps to resolve these issues, as required.

# Enable a tether to Quest KACE Support

You can access the Quest Support Portal to request a tether to your appliance to enable Quest KACE Technical Support to troubleshoot issues.

Obtain a tethering key by contacting Quest Support at https://support.quest.com/contact-support.

To ensure security, enable remote access to the appliance after the Support team authorizes you to do so.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. Click **Security Settings** on the appliance *Control Panel* to display the *Security Settings* page.
3. Ensure the **Enable SSH** check box is selected.
4. Click **Save and Restart Services**.
5. On the left navigation bar, click **Support** to display the *Support* page.
6. In the *Troubleshooting Tools* section, click **Enter a Tether Key** to display the *Support Tether Key* page.
7. On the *Support Tether Key* page, in the text field, type the description of the problem, and complete one of the following steps.
   - **To obtain the tether key automatically and send the message to Technical Support, click Enable Tether.**

     If the process fails, select **Enable Tether** and type the tether key, as prompted. Click **Save**.
   - **To use a tether key provided by Technical Support, click I already have a tether key, then select Enable Tether and type the tether key, as prompted. Click Save.**

# Troubleshooting appliance issues

The appliance server logs can help you and Quest Support detect and resolve errors.

The logs contain the last seven days of activity, and they are copied and compressed every day. Compressed logs are deleted when they are seven days old.

Log maintenance checks are performed daily, and no additional administrative log maintenance procedures are required.

## View appliance logs

You can view appliance logs in the Administrator Console. Appliance logs provide information related to appliance processes and errors the system encounters.

If the appliance is configured to share detailed usage data with Quest KACE, appliance and Agent exceptions or errors are reported to Quest every day. See:

- Configure appliance General Settings with the Organization component enabled
- Configure appliance General Settings without the Organization component

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. On the left navigation bar, click **Logs** to display the *Logs* page.
3. Select a log in the *Log* drop-down list.

| Log Type | Log Name | Description |
|---|---|---|
| **Hardware** | **Disk Status** | The status of the physical appliance disk array (not available for virtual appliances). |
| **Server** | **K1000 Log** | The errors generated on the appliance. |
| | **Access** | The HTTP server's access information. |
| | **Server Errors** | Errors or server warnings related to appliance server processes. |
| | **Stats** | The number of connections the appliance is processing over time. |
| | **Updates** | Details of appliance patches or upgrades applied to the appliance. |
| | **Reporting Log** | Details of reports that have been run. |
| | **Reporting Errors** | Errors related to reports that have been run. |
| | **Konductor Log** | Konductor-related logs. Konductor is an internal appliance component that regulates communications between the appliance and managed devices to keep the system running smoothly. The number of tasks Konductor is running appears on the *Tasks in Progress* widget. In addition, task throughput information appears on the appliance *General Settings* page (on appliances with the Organization component enabled) or on the *Communication Settings* page (on appliances without the Organization component enabled). See:<br>• Configure appliance General Settings with the Organization component enabled<br>• Configure Agent communication and log settings |
| | **Patch Download Log** | Information about patches that have been downloaded to the appliance. |
| | **Dell Updates Log** | Information about Dell hardware updates that have been downloaded to the appliance. |

| Log Type | Log Name | Description |
|---|---|---|
| | **Backup Log** | Details of daily and monthly appliance backups. |
| | **Backup Restore Log** | Details about restoring information from appliance backups. |
| | **Discovery Log** | Information related to the discovery process. |
| | **Provisioning Log** | Information related to the KACE Agent provisioning. |
| | **Agentless Log** | Information related to Agentless device connections to the appliance. |
| | **Monitoring Log** | Information related to monitored servers and their connections to the appliance. |
| | **Software Inventory** | Information related to Software Catalog inventory processing. |
| | **Software Inventory Errors** | Processing errors related to appliance Software Catalog inventory processing. |
| | **Asset Import Log** | Information related to importing assets. |
| | **Dell Warranty Log** | Information related to Dell Warranty updates. |
| | **User Authentication Log** | Information related to user authentication. Each entry in the log includes the following information:<br>• The name of the user account that attempts to log in.<br>• The IP address of the device from which the login attempt originated.<br>• The console to which the user attempts to log in: `userui` (User Console), `systemui` (System Administration Console), `adminui` (Administrator Console), or a Linked Appliance.<br>• The name of the organization the user is authenticated against.<br>• The type of authentication used: `Local Authentication`, `Single Sign On`, `systemui Local Authentication`, or `LDAP`.<br>• The result of the login attempt: `success` or `failed`.<br>For example:<br>`[2018-04-26 07:27:06 -0700] AUTH [info] admin - 10.1.243.172 - adminui - Default - systemui Local Authentication - success` |
| **Mail** | **Service Desk Incoming Mail Log** | Information related to problems encountered by the Exim Server (Mail Transfer agent) while processing email for Service Desk queues. For example, invalid email addresses and Service Desk licensing issues. |

| Log Type | Log Name | Description |
|---|---|---|
| | **Service Desk Incoming Mail Error Log** | PHP errors encountered when inbound email messages are processed. |
| | **Service Desk Outgoing Mail Log** | Errors encountered by the Mail Daemon while sending outgoing email messages. For example, invalid email addresses. |
| | **Service Desk Outgoing Mail Error Log** | PHP errors encountered when outgoing email notifications are processed. |
| | **KMailServices Log** | Information related to the `KMailServices` process. |
| **EXIM** | **Exim Main Log** | Information related to the arrival end delivery of each message. |
| | **Exim Reject Log** | Information related to rejected messages. |
| **Device** | **Client Access** | KACE Agent access logs. |
| | **Client Errors** | KACE Agent exception logs. |
| | **Agent Messaging Protocol Server** | Server-related Agent Messaging Protocol log entries. |
| | **Agent Messaging Protocol Server Errors** | Server-related Agent Messaging Protocol log errors. |
| | **Agent Messaging Protocol Queue** | Queue-related Agent Messaging Protocol log entries. |
| | **Agent Messaging Protocol Queue Errors** | Queue-related Agent Messaging Protocol log errors. |

If the Organization component is enabled on your system, you can change the number of days logs are retained. This setting appears in the *Log Retention* section of the appliance *General Settings*. See Configure appliance General Settings with the Organization component enabled.

## Download appliance activity logs

You can download appliance activity logs from the Administrator Console. These logs can be useful during troubleshooting.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. On the left navigation bar, click **Support** to display the *Support* page.
3. Click **Retrieve appliance activity logs**.

   **The logs are downloaded in the `k1000_logs.tgz` file.**

   For information about logs used in debugging, see:
   - Managing provisioning schedules
   - Troubleshooting and debugging the KACE Agent
   - View appliance logs

If the Organization component is enabled on your system, you can change the number of days logs are retained. This setting appears in the *Log Retention* section of the appliance *General Settings*. See Configure appliance General Settings with the Organization component enabled.

## Viewing the daily run output

The daily run output is a report that shows appliance information such as the disk status, network interface status, uptime and load averages, mail system health, and database status. Use this report to verify system status and identify issues that need to be resolved.

This report runs on a daily basis and is sent by email to the system administrator. See Understanding the daily run output and Security run output.

# Troubleshooting and debugging the KACE Agent

Use the Agent's debugging features to troubleshoot Agent-related issues.

If devices do not show up in Inventory, ensure the **Agent Debug Trace** option is enabled on the *Communication Settings* page. For more information, see Configure Agent communication and log settings.

For additional assistance, go to the Quest Support website, https://support.quest.com/contact-support. This website contains a Knowledge Base you can use for troubleshooting.

## Resolve Windows security issues that prevent Agent provisioning

If Windows security settings prevent the appliance from provisioning the Agent to Windows devices, you can reconfigure settings through a command prompt.

To allow provisioning, you must open the firewall and configure security settings.

1. Open a command prompt on the device.
2. Open the firewall and configure security settings:

```
reg add HKLM\SYSTEM\CurrentControlSet\Control\Lsa /v ForceGuest /t REG_DWORD /d
0 /f

reg add HKLM\Software\Microsoft\Windows\CurrentVersion\Policies\system /v
LocalAccountTokenFilterPolicy /t REG_DWORD /d 1 /f

reg add "HKLM\SYSTEM\CurrentControlSet\Control\Terminal Server" /v
FdenyTSConnections /t REG_DWORD /d 0 /f

netsh.exe firewall set service type=FILEANDPRINT mode=ENABLE scope=ALL

netsh.exe firewall set service type=REMOTEADMIN mode=ENABLE scope=ALL
```

# Testing and troubleshooting email communication

You can take steps to ensure that your Service Desk email communication is working correctly. You can verify email system configuration by testing your outgoing and incoming email. In addition, you can use Telnet to test email. Log files are available to provide error information.

The testing and troubleshooting information assumes that you are using a POP3 email server to communicate with the appliance as described in Configuring email settings.

# Test outgoing email

You can test outgoing email to verify system configuration.

1. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
2. On the left navigation bar, click **Support** to display the *Support* page.
3. In the *Troubleshooting Tools* section, click **Run diagnostic utilities** to display the *Diagnostic Utilities* page.
4. In the Test drop-down list, select **email sending**.
5. In the text box, enter a valid email address.
6. Click **Run Now** to display a log of the email's path.
7. Check the log file for errors.
   - **If no errors are reported, the outgoing email was successfully sent.**
   - **In the event of an error:**
     - Check your email and spam filters.
     - Check your appliance network settings. If you are using your own SMTP server, the appliance relays email through it. Many SMTP servers require specific permission to do this. Add your appliance IP address to the list of acceptable servers.
     - Check your router settings. Make sure the appliance can use the SMTP port (25).
     - Check your firewall settings. Make sure the appliance can use the SMTP port (25).
     - If you cannot resolve the issue, contact Quest Support at https://support.quest.com/contact-support.

# Test incoming email

You can test incoming email to verify system configuration.

1. Log on to your SMTP server, and create a Service Desk ticket by sending an email message to the Support email address for your appliance.
2. Go to the Service Desk *Tickets* page:
   a. Log in to the appliance Administrator Console, `https://`**appliance_hostname**`/admin`. Or, if the *Show organization menu in admin header* option is enabled in the appliance General Settings, select an organization in the drop-down list in the top-right corner of the page next to the login information.
   b. On the left navigation bar, click **Service Desk**, then click **Tickets**.
3. Confirm that a ticket appears.

   **If you send email from a valid account on the appliance, a ticket is created automatically.**

# Use Telnet to test incoming email

You can use Telnet to communicate with the appliance SMTP server and send a test email.

1. Use the following commands:

   ```
   >telnet k1000.mydomain.com 25
   ```

```
>EHLO mydomain.com
>MAIL FROM:<admin@mydomain.com>
>RCPT TO:<servicedesk@k1000.mydomain.com
>DATA
>Test data here
>QUIT
.
```

These commands start communication, tell the server who the message is from, tell the server who the message is to, prepare to send data, and quit Telnet.

2. Check the Service Desk email box to confirm that you have received email from admin@**mydomain**.com.

# Access appliance logs to view Microsoft Exchange Server errors

Information about Microsoft Exchange Server errors is available in appliance log files when logging is enabled on the Exchange Server.

1. In Microsoft Exchange Server, open the *SMTP Virtual Server Properties* window.
2. On the *General* tab, make sure that the *Enable Logging* check box is selected. If it is not selected, select it, then send a test email to the appliance.
3. Go to the appliance *Control Panel*:
   - **If the Organization component is not enabled on the appliance, log in to the appliance Administrator Console, `https://appliance_hostname/admin`, then select Settings > Control Panel.**
   - **If the Organization component is enabled on the appliance, log in to the appliance System Administration Console, `https://appliance_hostname/system`, or select System in the drop-down list in the top-right corner of the page, then select Settings > Control Panel.**
4. On the left navigation bar, click **Logs** to display the *Logs* page.
5. Select a log from the *Log* drop-down list.
6. Examine the `exim_mainlog_*` and `exim_paniclog_*` files for problems.

   **Problem could include:**

   - Errors and unsuccessful steps
   - Hostnames and other variables not fully resolved
7. Examine the `Debug_*` log for any other Exim problems such as runaway Exim processes.

   These other logs might also provide clues to the problem:

   - `khelpdeskmailhandler_output`
   - `khelpdeskmailnotifier_error`
   - `khelpdeskmailnotifier_output`
8. Examine the Microsoft Exchange SMTP service logs in `C:\windows\system32\ologFiles\*SMTP` for problems.

## Troubleshooting email errors

Solutions exist for some typical email errors.

| Email error | Solution |
|---|---|
| **550 Unknown user** | • Make sure the address is correct.<br>• Verify that the address matches the address used by Service Desk.<br>• Try disabling the external SMTP server and removing the address from the network settings. Reboot and restore the address. Reboot once more. |
| **451 error - unable to verify sender** | Check DNS settings. |

# About Diagnostic Console Two-Factor Authentication

Diagnostic Console Two-Factor Authentication (2FA) allows you to control access to the appliance back-end. When you enable SSH access to the appliance and create a tether, the Quest Support team can log in to the back-end of the appliance using the appliance root password together with an access token. Tokens are provided in the *Initial Setup Wizard*. They can be viewed and regenerated using the *Diagnostic Console Two-Factor Authentication* page in the appliance System Console. Each token can only be used once and must be given to the Quest Support contact before they can log in to the appliance through the tether or the console.

To navigate to this page, log in to the appliance System Console. On the left navigation bar, under *Settings*, click **Support**, and on the *Support* page, under *Troubleshooting Tools*, click **Diagnostic Console Two-Factor Authentication**.

The security key and offline tokens that are provided with the appliance during the initial setup should be recorded and stored in secure location, not on the appliance machine. You may be required to provide this information to Support, when needed.

After upgrading from an earlier version, if a message appears indicating that Diagnostic Console Two-Factor Authentication is disabled, and you want to enable it for enhanced security, follow the instructions in the message to enable it.

- To replace the secret key and regenerate the offline tokens, click **Replace Secret Key**.
- To regenerate offline tokens, click **Regenerate Offline Tokens**.

# Appendixes

# Database table names

Database table names can be used in reports and other database queries.

The following tables list the current database table names and the table names that have changed between the 6.3 and 6.4 versions of the appliance:

- Organization-level (ORG1) database tables
- System-level (KBSYS) database tables

### Organization-level (ORG1) database tables

The following table lists organization-level (ORG1) database table names. Reference these table names when creating custom reports using SQL queries. See Create reports using SQL queries.

**Table 37. ORG1 database tables and components**

| Table | Component |
|---|---|
| ADVISORY | Service Desk: Knowledge Base |
| ADVISORY_LABEL_JT | Service Desk: Knowledge Base |
| ADVISORY_RATINGS | Service Desk: Knowledge Base |
| AGENTLESS_TASK_LOG | Appliance Administration: Discovery |
| ASSET | Asset Management |
| ASSET_ASSOCIATION | Asset Management |
| ASSET_CATALOG_ASSOCIATION | Asset Management |
| ASSET_CLASS | Asset Management: Asset Subtypes |
| ASSET_DATA_1 | Asset Management: Import Assets |
| ASSET_DATA_2 | Asset Management: Import Assets |
| ASSET_DATA_3 | Asset Management: Import Assets |
| ASSET_DATA_4 | Asset Management: Import Assets |
| ASSET_DATA_5 | Asset Management: Import Assets |
| ASSET_DATA_6 | Asset Management: Import Assets |

| Table | Component |
|---|---|
| ASSET_DATA_7 | Asset Management: Import Assets |
| ASSET_FIELD_DEFINITION | Settings: Asset History |
| ASSET_FILTER | Asset Management: Labeling |
| ASSET_HIERARCHY | Asset Management |
| ASSET_HISTORY | Settings: Asset History |
| ASSET_TYPE | Asset Management: Asset Types |
| AUTHENTICATION | Appliance Administration |
| CLIENTDIST_LABEL_JT | Appliance Administration: KACE Agent |
| CLIENT_DISTRIBUTION | Appliance Administration: KACE Agent |
| CREDENTIAL | Settings: Credentials |
| CUSTOM_FIELD_DEFINITION | Appliance Administration |
| CUSTOM_VIEW | Appliance Administration: Service Desk Configuration |
| DASHBOARD | Dashboard |
| DASHBOARD_CACHE | Dashboard |
| DELL_ASSET | Security: Dell Updates |
| DELL_INVENTORY | Security: Dell Updates |
| DELL_INVENTORY_APPLICATION_DEVICE_JT | Security: Dell Updates |
| DELL_INVENTORY_DEVICE_JT | Security: Dell Updates |
| DELL_INVENTORY_LOG | Security: Dell Updates |
| DELL_MACHINE_PKG_UPDATE_STATUS | Security: Dell Updates |
| DELL_MACHINE_STATUS | Security: Dell Updates |
| DELL_PKG_LABEL_JT | Security: Dell Updates |
| DELL_PKG_STATUS | Security: Dell Updates |
| DELL_PKG_UPDATE_HISTORY | Security: Dell Updates |

| Table | Component |
|---|---|
| DELL_SCHEDULE | Security: Dell Updates |
| DELL_SCHEDULE_LABEL_JT | Security: Dell Updates |
| DELL_SCHEDULE_MACHINE_STATUS | Security: Dell Updates |
| DELL_SCHEDULE_OS_JT | Security: Dell Updates |
| DELL_SCHEDULE_UPDATE_LABEL_JT | Security: Dell Updates |
| DELL_WARRANTY | Security: Dell Updates |
| DEVICE_DETAIL_FIELD | Inventory: Devices |
| DEVICE_DETAIL_GROUP | Inventory: Devices |
| DEVICE_DETAIL_GROUP_ASSET_CLASS_JT | Inventory: Devices |
| DEVICE_DETAIL_SECTION | Inventory: Devices |
| DEVICE_DETAIL_SECTION_ASSET_CLASS_JT | Inventory: Devices |
| DEVP_PROFILE_APPLIED | Scripting: Mac Profiles |
| DEVP_PROFILE_APPLIED_MACHINE | Scripting: Mac Profiles |
| DEVP_PROFILE_APPLIED_PAYLOAD | Scripting: Mac Profiles |
| DEVP_PROFILE_APPLIED_PAYLOAD_ATTRIBUTE | Scripting: Mac Profiles |
| FILTER | Labels |
| FS | File Synchronization |
| FS_LABEL_JT | File Synchronization |
| FS_MACHINE_JT | File Synchronization |
| GLOBAL_OPTIONS | Appliance Administration |
| GRID_COLUMNS_OVERRIDES | Appliance Administration |
| HD_ANNOUNCEMENT | Service Desk: Announcements |
| HD_ANNOUNCEMENT_LABEL_JT | Service Desk: Announcements |
| HD_ARCHIVE_ATTACHMENT | Service Desk: Ticket Archive |

| Table | Component |
|---|---|
| HD_ARCHIVE_TICKET | Service Desk: Ticket Archive |
| HD_ARCHIVE_TICKET_CHANGE | Service Desk: Ticket Archive |
| HD_ARCHIVE_TICKET_CHANGE_FIELD | Service Desk: Ticket Archive |
| HD_ARCHIVE_WORK | Service Desk: Ticket Archive |
| HD_ATTACHMENT | Service Desk: Tickets |
| HD_CATEGORY | Service Desk: Tickets |
| HD_CUSTOM_FIELDS | Service Desk: Tickets |
| HD_EMAIL_EVENT | Service Desk: Tickets |
| HD_FIELD | Service Desk: Tickets |
| HD_HOME_PAGE_WIDGET | Service Desk: User Console Home Page |
| HD_IMPACT | Service Desk: Tickets |
| HD_LINK | Service Desk: User Console Home Page |
| HD_MAILTEMPLATE | Service Desk: Tickets |
| HD_PRIORITY | Service Desk: Tickets |
| HD_QUEUE | Service Desk: Queues |
| HD_QUEUE_APPROVER_LABEL_JT | Service Desk: Queues |
| HD_QUEUE_OWNER_LABEL_JT | Service Desk: Queues |
| HD_QUEUE_SUBMITTER_LABEL_JT | Service Desk: Queue |
| HD_SERVICE | Service Desk: Tickets |
| HD_SERVICE_TICKET | Service Desk: Tickets |
| HD_SERVICE_USER_LABEL_JT | Service Desk: Tickets |
| HD_SLA_BUSINESS_HOURS | Service Desk: Service Level Agreement |
| HD_SLA_HOLIDAYS | Service Desk: Service Level Agreement |
| HD_STATUS | Service Desk: Tickets |

| Table | Component |
|---|---|
| HD_TICKET | Service Desk: Tickets |
| HD_TICKET_CHANGE | Service Desk: Tickets |
| HD_TICKET_CHANGE_FIELD | Service Desk: Tickets |
| HD_TICKET_FILTER | Service Desk: Tickets |
| HD_TICKET_RELATED | Service Desk: Tickets |
| HD_TICKET_RULE | Service Desk: Tickets |
| HD_WORK | Service Desk: Tickets |
| IM_CRON | Appliance Administration |
| KBOT | Scripting |
| KBOT_CRON_SCHEDULE | Scripting |
| KBOT_DEPENDENCY | Scripting |
| KBOT_EVENT_SCHEDULE | Scripting |
| KBOT_FORM | Scripting |
| KBOT_FORM_DATA | Scripting |
| KBOT_LABEL_JT | Scripting |
| KBOT_LOG | Scripting |
| KBOT_LOG_DETAIL | Scripting |
| KBOT_LOG_LATEST | Scripting |
| KBOT_OS_FAMILY_JT | Scripting |
| KBOT_OS_JT | Scripting |
| KBOT_RUN | Scripting |
| KBOT_RUN_MACHINE | Scripting |
| KBOT_RUN_TOKEN | Scripting |
| KBOT_SHELL_SCRIPT | Scripting |

| Table | Component |
|---|---|
| KBOT_UPLOAD | Scripting |
| KBOT_VERIFY | Scripting |
| KBOT_VERIFY_STEPS | Scripting |
| KMON_ALERT | Monitoring |
| KMON_CONDITION | Monitoring |
| KMON_CONFIG | Monitoring |
| KMON_CONFIG_DEFAULT | Monitoring |
| KMON_CONFIG_DETAIL | Monitoring |
| KMON_CONFIG_DEVICE_JT | Monitoring |
| KMON_INSTALL_LEP_DEVICE_JT | Monitoring: Log Enablement Packages |
| KMON_LEP | Monitoring: Log Enablement Package |
| KMON_LEP_INSTALL | Monitoring: Log Enablement Package |
| KMON_LOG_CONFIG | Monitoring |
| KMON_MAINT_CONFIG | Monitoring |
| KMON_MONITORED_DEVICE | Monitoring |
| LABEL | Labels |
| LABEL_LABEL_JT | Labels |
| LDAP_FILTER | Labels: LDAP |
| LDAP_IMPORT_USER | Labels: LDAP |
| MACHINE | Inventory: Devices |
| MACHINE_ACTIONS | Inventory: Devices |
| MACHINE_BITLOCKER_VOLUME | Inventory: Devices |
| MACHINE_CHROMEOS_DETAILS | Inventory: Devices |
| MACHINE_CUSTOM_INVENTORY | Inventory: Devices |

| Table | Component |
|---|---|
| MACHINE_DAILY_UPTIME | Inventory: Devices |
| MACHINE_DCM_AMT_SETTINGS | Inventory: Devices |
| MACHINE_DCM_BATTERY | Inventory: Devices |
| MACHINE_DCM_DESKTOP_MONITOR | Inventory: Devices |
| MACHINE_DCM_FLAT_PANEL | Inventory: Devices |
| MACHINE_DCM_LOG_ENTRY | Inventory: Devices |
| MACHINE_DCM_PHYSICAL_MEMORY | Inventory: Devices |
| MACHINE_DCM_PROCESSOR | Inventory: Devices |
| MACHINE_DCM_VPRO_SETTINGS | Inventory: Devices |
| MACHINE_DDPE | Inventory: Devices |
| MACHINE_DDPE_VOLUME | Inventory: Devices |
| MACHINE_DISKS | Inventory: Devices |
| MACHINE_DRIVE_ENCRYPTION_SUMMARY | Inventory: Devices |
| MACHINE_FIELD_DEFINITION | Inventory: Devices |
| MACHINE_FILEVAULT_VOLUME | Inventory: Devices |
| MACHINE_INTEL_AMT | Inventory: Devices |
| MACHINE_LABEL_JT | Inventory: Devices |
| MACHINE_LOCATION | Inventory: Devices |
| MACHINE_MOBILE | Inventory: Devices |
| MACHINE_NICS | Inventory: Devices |
| MACHINE_NTSERVICE_JT | Inventory: Devices |
| MACHINE_PROCESS_JT | Inventory: Devices |
| MACHINE_REPLITEM | Inventory: Devices |
| MACHINE_SNMP_DATA | Inventory: Devices |

| Table | Component |
|---|---|
| MACHINE_SOFTWARE_JT | Inventory: Devices |
| MACHINE_STARTUPPROGRAM_JT | Inventory: Devices |
| MACHINE_TPM | Inventory: Devices |
| MESSAGE | Distribution: Alerts |
| MESSAGE_LABEL_JT | Distribution: Alerts |
| MI | Distribution: Managed Installations |
| MI_ATTEMPT | Distribution: Managed Installations |
| MI_LABEL_JT | Distribution: Managed Installations |
| NODE | Inventory: Discovery |
| NODE_LABEL_JT | Inventory: Discovery |
| NODE_PORTS | Inventory: Discovery |
| NODE_SNMP_IF | Inventory: Discovery |
| NODE_SNMP_SYSTEM | Inventory: Discovery |
| NOTIFICATION | Reporting: Notifications |
| NOTIFICATION_USER_JT | Reporting: Notifications |
| NTSERVICE | Inventory: Services |
| NTSERVICE_LABEL_JT | Inventory: Services |
| OBJECT_FIELD_DEFINITION | Settings: History |
| OBJECT_HISTORY | Settings: History |
| OBJECT_HISTORY_CONFIGURATION | Settings: History |
| OPERATING_SYSTEMS | Inventory: Devices |
| OVAL_STATUS | Security: OVAL |
| PATCH_FILTER | Security: Patch Management |
| PATCH_LABEL_JT | Security: Patch Management |

| Table | Component |
|---|---|
| PATCH_MACHINE_REMEDIATION_STATUS | Security: Patch Management |
| PATCH_MACHINE_STATUS | Security: Patch Management |
| PATCH_PATCH_COUNT | Security: Patch Management |
| PATCH_SCHEDULE | Security: Patch Scheduling |
| PATCH_SCHEDULE_DEPLOY_LABEL_JT | Security: Patch Scheduling |
| PATCH_SCHEDULE_DETECT_LABEL_JT | Security: Patch Scheduling |
| PATCH_SCHEDULE_LABEL_JT | Security: Patch Scheduling |
| PATCH_SCHEDULE_MACHINE_STATUS | Security: Patch Scheduling |
| PATCH_SCHEDULE_OS_JT | Security: Patch Scheduling |
| PATCH_SCHEDULE_ROLLBACK_LABEL_JT | Security: Patch Scheduling |
| PATCH_SCHEDULE_RUN | Security: Patch Scheduling |
| PATCH_SCHEDULE_RUN_COUNTS | Security: Patch Scheduling |
| PATCH_SCHEDULE_RUN_LOG | Security: Patch Scheduling |
| PATCH_SCHEDULE_RUN_MACHINE | Security: Patch Scheduling |
| PATCH_SETTINGS | Security: Subscriptions |
| PATCH_STATUS | Security: Patch Management |
| PORTAL | Service Desk: User Console |
| PORTAL_LABEL_JT | Service Desk: User Console |
| PROCESS | Inventory: Processes |
| PROCESS_LABEL_JT | Inventory: Process |
| PROVISION_CONFIG | Settings: Agent Provisioning |
| PROVISION_NODE | Settings: Agent Provisioning |
| REMOTE_CHROMEOS_HOST | Settings: Agentless Provisioning |
| REMOTE_DMM_HOST | Settings: Agentless: Dell Mobility Manager |

| Table | Component |
|---|---|
| REMOTE_HOST | Settings: Agentless Provisioning |
| REMOTE_HOST_KUID | Settings: Agentless Provisioning |
| REMOTE_SHELL_HOST | Settings: Agentless Provisioning |
| REMOTE_SNMP_HOST | Settings: Agentless Provisioning |
| REMOTE_WSMAN_HOST | Settings: Agentless Provisioning |
| REPLICATION_LANGUAGE | Distribution: Replication |
| REPLICATION_PLATFORM | Distribution: Replication |
| REPLICATION_SCHEDULE | Distribution: Replication |
| REPLICATION_SHARE | Distribution: Replication |
| REPORT_FIELD | Reporting |
| REPORT_FIELD_GROUP | Reporting |
| REPORT_JOIN | Reporting |
| REPORT_OBJECT | Reporting |
| REPORT_OBJECT_JOIN | Reporting |
| REPORT_SCHEDULE | Reporting |
| SAM_CATALOG_FILTER | Inventory: Software Catalog |
| SAM_CATALOG_LABEL_JT | Inventory: Software Catalog |
| SAM_COMPLIANCE_DETAIL | Asset Management: License Compliance |
| SAM_COMPLIANCE_SUMMARY | Asset Management: License Compliance |
| SAM_COUNT | Inventory: Software Catalog |
| SAM_MACHINE_JT | Inventory: Software Catalog |
| SAM_MACHINE_TERMINATED_APPS | Inventory: Software Catalog |
| SAM_METER | Inventory: Software Catalog |
| SAM_METER_DATA | Inventory: Software Catalog |

| Table | Component |
|---|---|
| SAM_METER_TITLED_APPLICATION | Inventory: Software Catalog |
| SAM_NOT_ALLOWED | Inventory: Software Catalog |
| SAVED_SEARCH | Appliance Administration |
| SCAN_FILTER | Inventory: Discovery |
| SCAN_SETTINGS | Inventory: Discovery |
| SCAP_BENCHMARK | Security: SCAP |
| SCAP_GROUP | Security: SCAP |
| SCAP_PROFILE | Security: SCAP |
| SCAP_RESULT | Security: SCAP |
| SCAP_RESULT_RULE | Security: SCAP |
| SCAP_RESULT_SCORE | Security: SCAP |
| SCAP_RULE | Security: SCAP |
| SCAP_RULE_IDENT | Security: SCAP |
| SETTINGS | Settings |
| SETTINGS_HISTORY | Settings: History |
| SETTINGS_HISTORY_CONFIGURATION | Settings: History |
| SETTINGS_HISTORY_FIELD_DEFINITION | Settings: History |
| SMARTY_REPORT | Reporting |
| SNMP_INVENTORY_OIDS | Inventory: SNMP |
| SNMP_INVENTORY_SETTINGS | Inventory: SNMP |
| SNMP_INVENTORY_SETTINGS_JT | Inventory: SNMP |
| SNOOZE_ALERT | Patch Schedules |
| SOFTWARE | Inventory: Software |
| SOFTWARE_LABEL_JT | Inventory: Software |

| Table | Component |
|---|---|
| SOFTWARE_OS_JT | Inventory: Software |
| STARTUPPROGRAM | Inventory: Startup Programs |
| STARTUPPROGRAM_LABEL_JT | Inventory: Startup Programs |
| THROTTLE | Appliance Administration |
| USER | Settings: Users |
| USERIMPORT_SCHEDULE | Settings: User Authentication |
| USER_AUTO_REFRESH | Settings: Users |
| USER_HISTORY | Settings: Users |
| USER_KEYS | Settings: Users |
| USER_LABEL_JT | Settings: Users |
| USER_ROLE | Settings: Users |
| USER_ROLE_PERMISSION_VALUE | Settings: Users |

### System-level (KBSYS) database tables

The following table shows the System-level (KBSYS) database table names. Reference these table names when creating custom reports using SQL queries. See Create reports using SQL queries.

**Table 38. KBSYS database tables and components**

| Table | Component |
|---|---|
| ACCESS_STATS | Appliance Administration (used to track page views) |
| AGENTLESS_TASK | Inventory |
| APPLE_MODEL | Inventory: Devices |
| AUTHENTICATION | Settings: Users |
| CLIENT_CRASH | Appliance Administration |
| COUNTRYCODE_MAPPING | Inventory: Devices(used for Dell devices) |
| CREDENTIAL_CONSUMER | Settings: Credentials |
| DASHBOARD | Dashboard |
| DASHBOARD_BASE_WIDGETS | Dashboard |

| Table | Component |
|---|---|
| DASHBOARD_CACHE | Dashboard |
| DASHBOARD_CUSTOM_WIDGETS | Dashboard |
| DASHBOARD_DATASOURCES | Dashboard |
| DASHBOARD_WIDGET_TYPES | Dashboard |
| DELL_CATALOG | Security: Dell Updates |
| DELL_CRITICALITY | Security: Dell Updates |
| DELL_ERROR_CODE | Security: Dell Updates |
| DELL_PKG | Security: Dell Updates |
| DELL_PKG_DEVICE | Security: Dell Updates |
| DELL_PKG_DEVICE_DEPENDENCY | Security: Dell Updates |
| DELL_PKG_DEVICE_PCI | Security: Dell Updates |
| DELL_PKG_DEVICE_PNP | Security: Dell Updates |
| DELL_PKG_DEVICE_VERSION | Security: Dell Updates |
| DELL_PKG_OS | Security: Dell Updates |
| DELL_PKG_OS_LANG | Security: Dell Updates |
| DELL_PKG_SYSTEM | Security: Dell Updates |
| DELL_RESOURCE | Security: Dell Updates |
| DELL_SUPPORTED_MODELS | Security: Dell Updates |
| DELL_UPDATE_STATUS | Security: Dell Updates |
| GLOBAL_OPTIONS | Appliance Administration |
| GRID_COLUMNS_BASE | Appliance Administration |
| GRID_COLUMNS_OVERRIDES | Appliance Administration |
| HD_EMAIL_EXCLUSION | Service Desk: Email Exclusion List |
| HISTORY_FIELD_VALUE_LABEL_MAP | Settings: History |

| Table | Component |
|---|---|
| IM_CRON | Appliance Administration (used for scheduled processes) |
| INVENTORY | Inventory |
| INVENTORY_FAILURES | Inventory |
| KBOT_GRAMMAR | Scripting |
| KBOT_GRAMMAR_ATTRIBUTE | Scripting |
| KBOT_UPLOAD_TOKENS | Scripting |
| KBOX | Scripting |
| KBOX_VERSION | Scripting |
| KONDUCTOR_TASK | Appliance Administration |
| KUID_MACHINE | Appliance Administration |
| KUID_ORGANIZATION | Appliance Administration |
| LICENSE_MODE | Appliance Administration |
| LINKED_APPLIANCE | Settings: Appliance Linking |
| LINKED_USER_TOKEN | Settings: Appliance Linking |
| LOCALE_BROWSER | Appliance Administration |
| LOCALE_COLLATION_RULES | Appliance Administration |
| LOCALE_SERVER | Appliance Administration |
| LOCALE_TIME_FORMAT | Appliance Administration |
| MSI_ERROR_CODES | Distribution |
| NETWORK_SETTINGS | Appliance Administration |
| ORGANIZATION | Organizations |
| ORGANIZATION_FILTER | Organizations: Filters |
| ORGANIZATION_FILTER_CRITERIA | Organizations: Filters |
| ORGANIZATION_FILTER_CRITERIA_LDAP | Organizations: Filters |

| Table | Component |
|---|---|
| ORG_ROLE | Organizations: Roles |
| ORG_ROLE_PERMISSION_VALUE | Organizations: Roles |
| OS_FAMILY | Inventory: Devices |
| OVAL_DEFINITION | Security: OVAL |
| OVAL_UPDATE_STATUS | Security: OVAL |
| PATCH_ATTRIBUTE | Security: Patch Management |
| PATCH_CATALOG_RUN_STATUS | Security: Patch Management |
| PATCH_CATALOG_UPDATE_STATUS | Security: Patch Management |
| PATCH_ERROR_CODE | Security: Patch Management |
| PATCH_LANGUAGE | Security: Patch Management |
| PATCH_OS | Security: Patch Management |
| PATCH_PACKAGE | Security: Patch Management |
| PATCH_PAYLOAD_DOWNLOAD_STATUS | Security: Patch Management |
| PATCH_PRODUCT | Security: Patch Management |
| PATCH_PRODUCT_JT | Security: Patch Management |
| PATCH_PRODUCT_OS_JT | Security: Patch Management |
| PATCH_PRODUCT_TITLED_APPLICATION_JT | Security: Patch Management |
| PATCH_PRODUCT_TITLED_SUITE_JT | Security: Patch Management |
| PATCH_RESOURCE | Security: Patch Management |
| PATCH_SUPERCEDES_JT | Security: Patch Management |
| PERMISSION_DEFINITION | Settings: Roles |
| PORT_SERVICES | Inventory: Discovery |
| PROVISIONING_ERRORS | Settings: Provisioning |
| REPORT_FIELD | Reporting |

| Table | Component |
|---|---|
| REPORT_FIELD_GROUP | Reporting |
| REPORT_JOIN | Reporting |
| REPORT_OBJECT | Reporting |
| REPORT_OBJECT_JOIN | Reporting |
| REPORT_SCHEDULE | Reporting |
| RESOURCE_EXPORTED | Settings: Resources |
| RESOURCE_QUEUE | Settings: Resources |
| SAM_APPLICATION | Software Catalog |
| SAM_HARDWARE | Software Catalog |
| SAM_LINUX_APPLICATION | Software Catalog |
| SAM_MUI_CACHE_DATA | Software Catalog |
| SAM_PUBLISHER | Software Catalog |
| SAM_SOFTWARE_TAG | Software Catalog |
| SAM_TITLE_REQUEST | Software Catalog |
| SAM_VIEW_ALL_SOFTWARE | Software Catalog |
| SAM_VIEW_DISCOVERED_APPLICATIONS | Software Catalog |
| SAM_VIEW_DISCOVERED_SOFTWARE | Software Catalog |
| SAM_VIEW_DISCOVERED_SUITES | Software Catalog |
| SAM_VIEW_INVENTORY_ADD_REMOVE_PROGRAMS | Software Catalog |
| SAM_VIEW_INVENTORY_MOBILE_APPS | Software Catalog |
| SAM_VIEW_MACHINE_DISCOVERED_SOFTWARE | Software Catalog |
| SAM_VIEW_TITLED_SOFTWARE | Software Catalog |
| SERVER_CRASH | Appliance Administration (used to track internal errors) |

| Table | Component |
|---|---|
| SERVICE_LEVEL_MAPPING | Inventory: Devices (used for Dell devices) |
| SETTINGS | Settings |
| SETTINGS_HISTORY | Settings: History |
| SETTINGS_HISTORY_CONFIGURATION | Settings: History |
| SETTINGS_HISTORY_FIELD_DEFINITION | Settings: History |
| SHAPING_METADATA | Inventory: API |
| SMARTY_REPORT | Reporting |
| SMMP_CONNECTION | Discovery |
| SMMP_CONNECTION_PLUGIN_JT | Discovery |
| SMMP_MSG_Q | Discovery |
| SMMP_NIC | Discovery |
| SMMP_PLUGIN | Discovery |
| SOFTWARE_INVENTORY | Inventory |
| SOFTWARE_INVENTORY_FAILURES | Inventory |
| SSL_CERT | Settings: Security Settings |
| SSL_CSR | Settings: Security Settings |
| SSL_PRIVATEKEY | Settings: Security Settings |
| SYSTEM_DEFINED_ROLES | Organizations: Roles |
| TIME_SETTINGS | Settings: Date and Time Settings |
| USER | Settings: Authentication |
| USER_AUTH | Settings: Authentication |
| USER_AUTO_REFRESH | Settings: Authentication |

# Adding steps to task sections of scripts

You can add steps to scripts in the Scripting component.

The following tables detail the steps that can be added to the task sections of scripts. Task sections are available on the *Script Detail* page when you add a task. See Adding and editing scripts.

The column headings *V*, *OS*, *R*, *ORS*, and *ORF* indicate whether a particular step is available in the corresponding task sections: *Verify*, *On Success*, *Remediation*, *On Remediation Success*, and *On Remediation Failure*.

- Steps for Windows devices
- Steps for Mac OS X devices
- Steps for Red Hat Enterprise Linux devices

### Steps for Windows devices

**NOTE:** For the syntax to use when specifying registry paths, see Specifying Windows registry paths.

**Table 39. Adding steps to scripts used on Windows devices**

| Step | Description | V | OS | R | ORS | ORF |
|---|---|---|---|---|---|---|
| Always fail | | X | | X | | |
| Call a custom DLL function | Call function "%{procName}" from "%{path}\%{file}". | X | X | X | | |
| Create a custom DLL object | Create object "%{className}" from "%{path}\%{file}". | X | X | X | | |
| Create a message window | Create a message window named "%{name}" with title "%{title}", message "%{message}" and timeout "%{timeout}" seconds. | X | X | X | X | X |
| Delete a registry key | Delete "%{key}" from the registry. See Specifying Windows registry paths. | | X | X | | |
| Delete a registry value | Delete "%{key}!%{name}" from the registry. See Specifying Windows registry paths. | | X | X | | |
| Destroy a message window | Destroy the message window named "%{name}". | X | X | X | X | X |
| Install an application package | Install "%{name}" with arguments "%{install_cmd}". | | X | X | | |

| Step | Description | V | OS | R | ORS | ORF |
|---|---|---|---|---|---|---|
| | **NOTE:** This step requires you to choose from a list of application packages already uploaded using the functionality in the *Inventory* > *Software* page. See Adding and deleting applications in Software page inventory. | | | | | |
| Stop a process | Stop the process "%{name}". | X | X | X | X | X |
| Launch a program | Launch "%{path}\%{program}" with params "%{parms}". | X | X | X | X | X |
| Log a registry value | Log "%{key}!%{name}". | | | X | | |
| Log file information | Log "%{attrib}" from ""%{path}\%{file}". | | | X | X | X |
| Log message | Log "%{message}" to "%{type}". | | | X | | |
| Restart a service | Restart service "%{name}" | | | X | | |
| Run a batch file | Run the batch file "%{_fake_name}" with params "%{parms}".<br>**NOTE:** In this step, you do not need to upload the batch file. You create the batch file by pasting the script in the space provided. | X | X | X | | |
| Set a registry key | Set "%{key}". | X | X | | | |
| Set a registry value | Set "%{key}!%{name}" to "%{newValue}". | X | X | | | |
| Start a service | Restart service "%{name}". | | | X | | |
| Stop a service | Stop service "%{name}" | | | X | | |
| Unzip a file | Unzip "%{path}\%{file}" to "%{target}". | X | | X | X | X |
| Update message window text | Set the text in the message window named "%{name}" to "%{text}". | X | | X | X | X |
| Update policy and job schedule | Update policy and job schedule from the appliance. | X | | | | |
| Upload a file | Upload "%{path}\%{file}" to the server. | | X | X | | |
| Verify a directory exists | Verify that the directory "%{path}" exists. | X | | | | |
| Verify a file exists | Verify that the file "%{path}\%{file}" exists. | X | | | | |

| Step | Description | V | OS | R | ORS | ORF |
|---|---|---|---|---|---|---|
| Verify a file version is exactly | Verify that the file "%{path}\%{file}" has version "%{expectedValue}". | X | | | | |
| Verify a file version is greater than | Verify that the file "%{path}\%{file}" has version greater than "%{expectedValue}". | X | | | | |
| Verify a file version is greater than or equal to | Verify that the file "%{path}\%{file}" has version greater than or equal to "%{expectedValue}". | X | | | | |
| Verify a file version is less than | Verify that the file "%{path}\%{file}" has version less than "%{expectedValue}". | X | | | | |
| Verify a file version is less than or equal to | Verify that the file "%{path}\%{file}" has version less than or equal to "%{expectedValue}. | X | | | | |
| Verify a file version is not | Verify that the file "%{path}\%{file}" does not have version "%{expectedValue}". | X | | | | |
| Verify a file was modified since | Verify that the file "%{path}\%{file}" was modified since "%{expectedValue}". | X | | | | |
| Verify a process is not running | Verify the process "%{name}" is not running. | X | | | | |
| Verify a process is running | Verify the process "%{name}" is running. | X | | | | |
| Verify a product version is exactly | Verify that the product "%{path}\%{file}" has version "%{expectedValue}". | X | | | | |
| Verify a product version is greater than | Verify that the product "%{path}\ %{file}" has version greater than "%{expectedValue}". | X | | | | |
| Verify a product version is greater than or equal to | Verify that the product "%{path}\%{file}" has version greater than or equal to "%{expected-Value}". | X | | | | |
| Verify a product version is less than | Verify that the product "%{path}\%{file}" has version less than "%{expectedValue}". | X | | | | |
| Verify a product version is less than or equal to | Verify that the product "%{path}\%{file}" has version less than or equal to "%{expectedValue}". | X | | | | |
| Verify a product version is not | Verify that the product "%{path}\ %{file}" does not have version "%{expectedValue}". | X | | | | |

| Step | Description | V | OS | R | ORS | ORF |
|---|---|---|---|---|---|---|
| | **NOTE:** For the syntax to use when specifying registry paths, see Specifying Windows registry paths. | | | | | |
| Verify a registry key does not exist | Verify that "%{key}" does not exist. | X | | | | |
| Verify a registry key exists | Verify that "%{key}" exists. | X | | | | |
| Verify a registry key's subkey count is exactly | Verify that "%{key}" has exactly "%{expectedValue}" subkeys. | X | | | | |
| Verify a registry key's subkey count is greater than | Verify that "%{key}" has greater than "%{expectedValue}" subkeys. | X | | | | |
| Verify a registry key's subkey count is greater than or equal to | Verify that "%{key}" has greater than or equal to "%{expectedValue}" subkeys. | X | | | | |
| Verify a registry key's subkey count is less than | Verify that "%{key}" has less than "%{expectedValue}" subkeys. | X | | | | |
| Verify a registry key's subkey count is less than or equal to | Verify that "%{key}" has less than or equal to "%{expectedValue}" subkeys. | X | | | | |
| Verify a registry key's subkey count is not | Verify that "%{key}" does not have exactly "%{expectedValue}" subkeys. | X | | | | |
| Verify a registry key's value count is exactly | Verify that "%{key}" has exactly "%{expectedValue}" values. | X | | | | |
| Verify a registry key's value count is greater than | Verify that "%{key}" has greater than "%{expectedValue}" values. | X | | | | |
| Verify a registry key's value count is greater than or equal to | Verify that "%{key}" has greater than or equal to "%{expectedValue}" values. | X | | | | |
| Verify a registry key's value count is less than | Verify that "%{key}" has less than "%{expectedValue}" values. | X | | | | |

| Step | Description | V | OS | R | ORS | ORF |
|---|---|---|---|---|---|---|
| Verify a registry key's value count is less than or equal to | Verify that "%{key}" has less than or equal to "%{expectedValue}" values. | X | | | | |
| Verify a registry key's value count is not | Verify that "%{key}" does not have exactly "%{expectedValue}" values. | X | | | | |
| Verify a registry pattern doesn't match | Verify that "%{key}!%{name}= %{expectedValue}" doesn't match. | X | | | | |
| Verify a registry pattern match | Verify that "%{key}!%{name}= %{expectedValue}" matches. | X | | | | |
| Verify a registry value does not exist | Verify that "%{key}!%{name}" does not exist. | X | | | | |
| Verify a registry value exists | Verify that "%{key}!%{name}" exists. | X | | | | |
| Verify a registry value is exactly | Verify that "%{key}!%{name}" is equal to "%{expectedValue}". | X | | | | |
| Verify a registry value is greater than | Verify that "%{key}!%{name}" is greater than "%{expectedValue}". | X | | | | |
| Verify a registry value is greater than or equal to | Verify that "%{key}!%{name}" is greater than or equal to "%{expectedValue}" . | X | | | | |
| Verify a registry value is less than | Verify that "%{key}!%{name}" is less than "%{expectedValue}". | X | | | | |
| Verify a registry value is less than or equal to | Verify that "%{key}!%{name}" is less than or equal to "%{expectedValue}". | X | | | | |
| Verify a registry value is not | Verify that "%{key}!%{name}" is not equal to "%{expectedValue}". | X | | | | |
| Verify a service exists | Verify the service "%{name}" exists. | X | | | | |
| Verify a service is running | Verify the service "%{name}" is running. | X | | | | |

### Specifying Windows registry paths

When specifying Windows registry paths, use the base key and specify whether the registry is on a device with 32-bit or 64-bit operating system and hardware.

| Base key | Short version |
|---|---|
| HKEY_CLASSES_ROOT | HKCR |
| HKEY_CURRENT_USER | HKCU |
| HKEY_LOCAL_MACHINE | HKLM |
| HKEY_USERS | HKU |
| HKEY_PERFORMANCE_DATA | HKPD |
| HKEY_PERFORMANCE_TEXT | HKPT |
| HKEY_PERFORMANCE_NLSTEXT | HKPN |
| HKEY_CURRENT_CONFIG | HKCC |
| HKEY_DYN_DATA | HKDD |

For example, specify the path for HKEY_LOCAL_MACHINE for 32- and 64-bit Windows devices as follows:

- `HKLM\Software\32BitProgramA\installDate`
- `HKLM64\Software\64BitProgramB\installDate`

**Steps for Mac OS X devices**

**Table 40. Adding steps to scripts used on Mac OS X devices**

| Step | Description | V | OS | R | ORS | ORF |
|---|---|---|---|---|---|---|
| Always fail | | X | | X | | |
| Create a message window | Create a message window named "%{name}" with title "%{title}", message "%{message}" and timeout "%{timeout}" seconds. | X | X | X | X | X |
| Destroy a message window | Destroy the message window named "%{name}". | X | X | X | X | X |
| Stop a process | Stop the process "%{name}". | X | X | X | X | X |
| Launch a program | Launch "%{path}\%{program}" with params "%{parms}". | X | X | X | X | X |
| Log a plist value | Log "%{key}!%{name};" | | | X | | |
| Log message | Log "%{message}" to "%{type}". | | | X | | |
| Search file system | Search for "%{name}" in "%{startingDirectory}" on "%{drives}" and "%{action}". | X | | | | |
| Unzip a file | Unzip "%{path}\%{file}" to "%{target}". | X | | X | X | X |

| Step | Description | V | OS | R | ORS | ORF |
|---|---|---|---|---|---|---|
| Update message window text | Set the text in the message window named "%{name}" to "%{text}". | X | | X | X | X |
| Update policy and job schedule | Update policy and job schedule from the appliance. | X | | | | |
| Upload a file | Upload "%{path}\%{file}" to the server. | | X | X | | |
| Verify a directory exists | Verify that the directory "%{path}" exists. | X | | | | |
| Verify a file exists | Verify that the file "%{path}\%{file}" exists. | X | | | | |
| Verify a file was modified since | Verify that the file "%{path}\%{file}" was modified since "%{expectedValue}". | X | | | | |
| Verify a process is not running | Verify the process "%{name}" is not running. | X | | | | |
| Verify a process is running | Verify the process "%{name}" is running. | X | | | | |
| Verify a plist value equals | | X | | | | |
| Verify a plist value exists | Verify that "%{key}" exists. | X | | | | |
| Verify a plist value greater than | | X | | | | |
| Verify a plist value less than | | X | | | | |
| Verify an environment variable equals | | X | | | | |
| Verify an environment variable exists | | X | | | | |
| Verify an environment variable greater than | | X | | | | |
| Verify an environment variable less than | | X | | | | |

| Step | Description | V | OS | R | ORS | ORF |
|---|---|---|---|---|---|---|
| Verify at least one file matching regex exists | | X | | | | |
| Verify count of filenames matching regex is greater than | | X | | | | |
| Verify count of filenames matching regex is less than | | X | | | | |
| Verify count of filenames matching regex | | X | | | | |
| Verify file info equals | | X | | | | |
| Verify file info greater than | | X | | | | |
| Verify file info less than | | X | | | | |

### Steps for Red Hat Enterprise Linux devices

**Table 41. Adding steps to scripts for RHEL**

| Step | Description | V | OS | R | ORS | ORF |
|---|---|---|---|---|---|---|
| Always fail | | X | | X | | |
| Stop a process | Stop the process "%{name}". | X | X | X | X | X |
| Launch a program | Launch "%{path}\%{program}" with params "%{parms}". | X | X | X | X | X |
| Log message | Log "%{message}" to "%{type}". | | | X | | |
| Search file system | Search for "%{name}" in "%{startingDirectory}" on "%{drives}" and "%{action}". | X | | | | |
| Unzip a file | Unzip "%{path}\%{file}" to "%{target}". | X | | X | X | X |
| Update policy and job schedule | Update policy and job schedule from the appliance. | X | | | | |
| Upload a file | Upload "%{path}\%{file}" to the server. | | X | X | | |

| Step | Description | V | OS | R | ORS | ORF |
|---|---|---|---|---|---|---|
| Verify a directory exists | Verify that the directory "%{path}" exists. | X | | | | |
| Verify a file exists | Verify that the file "%{path}\%{file}" exists. | X | | | | |
| Verify a file was modified since | Verify that the file "%{path}\%{file}" was modified since "%{expectedValue}". | X | | | | |
| Verify a process is not running | Verify the process "%{name}" is not running. | X | | | | |
| Verify a process is running | Verify the process "%{name}" is running. | X | | | | |
| Verify an environment variable less than | | X | | | | |
| Verify at least one file matching regex exists | | X | | | | |
| Verify count of filenames matching regex is greater than | | X | | | | |
| Verify count of filenames matching regex is less than | | X | | | | |
| Verify count of filenames matching regex | | X | | | | |
| Verify file info equals | | X | | | | |
| Verify file info greater than | | X | | | | |
| Verify file info less than | | X | | | | |

# LDAP variables

The appliance supports variables for use in LDAP Labels and database queries.

### Device or machine variables

Device or machine variables can be used in LDAP Labels and queries to automatically group devices by name, description, and other LDAP criteria. During LDAP Label processing, the appliance replaces all `KBOX_` defined variables with their respective runtime values. The following table shows supported device or machine variables and their mapping to columns in the MACHINE database table and LDAP attributes.

**Table 42. Device or machine variables and mappings**

| Appliance variable | Appliance MACHINE database table column | LDAP attribute mapping |
|---|---|---|
| KBOX_COMPUTER_NAME | NAME | cn \| name |
| KBOX_COMPUTER_DESCRIPTION | SYSTEM_DESCRIPTION | description |
| KBOX_COMPUTER_MAC | MAC | macAddress |
| KBOX_COMPUTER_IP | IP | ipHostNumber |
| KBOX_USER | USER_NAME | |
| KBOX_USER_DOMAIN | USER_DOMAIN | |
| KBOX_DOMAINUSER | USER | |
| KBOX_CUSTOM_INVENTORY_* | CUSTOM_INVENTORY | |

The KBOX_CUSTOM_INVENTORY_* variable can be used to check a custom inventory value. The * is replaced with the Display Name of the custom inventory rule. Allowed characters are [a-z0-9.-]. Any other characters are replaced with an underscore (_).

### User variables

User variables can be used in LDAP Labels and queries to automatically group users by domain, location, budget code, or other LDAP criteria. During LDAP Label processing, the appliance replaces all `KBOX_` defined variables with their respective runtime values. The following table shows supported user variables and their mapping to columns in the USER database table and LDAP attributes.

**Table 43. User variables and mappings**

| Appliance variable | Appliance USER database table column | LDAP attribute mapping |
|---|---|---|
| KBOX_USER_NAME | USER_NAME | samAccountName |
| KBOX_FULL_NAME | FULL_NAME | cn \| name |
| KBOX_EMAIL | EMAIL | mail |
| KBOX_DOMAIN | DOMAIN | |
| KBOX_BUDGET_CODE | BUDGET_CODE | |

| Appliance variable | Appliance USER database table column | LDAP attribute mapping |
|---|---|---|
| KBOX_LOCATION | LOCATION | 1 |
| KBOX_WORK_PHONE | WORK_PHONE | telephoneNumber |
| KBOX_HOME_PHONE | HOME_PHONE | homePhone |
| KBOX_MOBILE_PHONE | MOBILE_PHONE | mobile |
| KBOX_PAGER_PHONE | PAGER_PHONE | pager |
| KBOX_CUSTOM_1 | CUSTOM_1 | |
| KBOX_CUSTOM_2 | CUSTOM_2 | |
| KBOX_CUSTOM_3 | CUSTOM_3 | |
| KBOX_CUSTOM_4 | CUSTOM_4 | |
| KBOX_ROLE_ID | ROLE_ID | |
| KBOX_API_ENABLED | API_ENABLED | • No value: Disable user access to the KACE GO app |
| KBOX_AMS_ID | AMS_ID | No value. This variable is not used. |
| KBOX_LOCALE_BROWSER_ID | LOCALE_BROWSER_ID | |
| KBOX_HD_DEFAULT_QUEUE_ID | HD_DEFAULT_QUEUE_ID | |
| KBOX_LDAP_UID | LDAP_UID | objectGUID |

# Glossary

## A

**Acceptable Use Policy**

A statement or policy that is displayed to users when they log in to the Administrator Console, Command Line Console, or User Console. See Enable or disable the Acceptable Use Policy.

**add to catalog request**

A cataloging request is a form you can submit to request that an application that is not included in the Software Catalog (Uncataloged) be added to the public Software Catalog. When Quest receives a cataloging request, that request is evaluated to determine whether or not the application should become part of the public Software Catalog. In addition, applications are automatically added to the local version of the Software Catalog on the appliance when cataloging requests are submitted. See Adding applications to the Software Catalog.

**Administrator Console**

The Administrator Console is the web-based interface used to control the appliance. To access the Administrator Console, go to `http://<appliance_hostname>/admin` where `<appliance_hostname>` is the hostname of your appliance. If the Organization component is enabled, you can access the System-level settings of the Administrator Console at `http://<appliance_hostname>/system`. To view the full path of URLs in the Administrator Console, which can be useful when searching the database or sharing links, add ui to the URL you use to log in. For example: `http://<appliance_hostname>/admin`.

**Agent**

The KACE Agent is an application that can be installed on devices to enable device management through the appliance. Agents that are installed on managed devices communicate with the appliance through the agent messaging protocol. Agents perform scheduled tasks, such as collecting inventory information from, and distributing software to, managed devices. Agentless management is available for devices that cannot have Agent software installed, such as printers and devices with operating systems that are not supported by the Agent. See Provisioning the KACE Agent.

**Agentless management**

Agentless device management is a method of managing devices without the need to deploy and maintain the KACE Agent software on those devices. Agentless management uses SSH, SNMP, and other methods to connect to Agent-intolerant devices, such as printers, network devices, and storage devices, and report inventory in the appliance Administrator Console. This is useful for operating system versions and distributions that are not supported by the KACE Agent, and where Agentless management is preferred over installing the Agent. See Managing Agentless devices.

**alerts**

Broadcast alerts are messages, such as pop-ups, that can be broadcast from the appliance to be displayed on Agent-managed devices. Displaying alerts is useful when you need to communicate urgent information, or notify users before running actions or scripts on their devices. See Broadcasting alerts to managed devices.

Monitoring alerts are messages that are generated on supported server devices and sent to the appliance to alert staff about errors and issues being reported in the event and system logs of the devices. See Monitoring servers.

**alternate download location**

An alternate download location can be any network location that has all the files required to install a particular application. You can distribute packages from alternate download locations including a UNC address or DFS source. The CIFS and SMB protocols, Samba servers, and file server appliances are

supported. You specify the location when you create a Managed Installation. See Using Managed Installations.

**AppDeploy Live**

See ITNinja .

**app**

See KACE GO .

**appliance linking**

Appliance linking enables you to log in to one appliance and access all linked appliances from the drop-down list in the top-right corner of the Administrator Console, without having to log in to each appliance separately. You can link all of the Quest K-Series appliances you manage. See Linking Quest KACE appliances.

**appliance or virtual appliance**

The appliance is available as a physical or hardware-based appliance, and as a virtual appliance. The virtual appliance uses a VMware infrastructure. The same system management features are available on both the physical and virtual appliances. See About the appliance components.

**Application Control**

Application Control enables you to mark applications as Not Allowed and block them or prevent them from running on Agent-managed Windows and Mac devices. This is useful if you want to restrict specific applications from running in your environment. See Apply the Application Control label to devices.

**Asset Management**

Support for complex license compliance reporting, building on the framework of data collected through the appliance Inventory process. Asset Management also enables you to track additional data about managed devices, including purchase dates, support contracts, asset tags, and so on. See About the Asset Management component.

**assets, Asset Types, and Asset Subtypes used in the Asset Management component**

Assets and Asset Types used in the Asset Management component include physical and logical items, such as devices, applications, printers, licenses, departments, locations, and vendors. The Asset Management component enables you to build relationships between assets, track inventory data, view records of changes, and report on changes to assets. Assets are based on Asset Types. You can modify default Asset Types, create custom Asset Types, and import asset information as needed. See About Asset Types. Asset Subtypes are subcategories of assets that you can add to any Asset Type, including custom Asset Types. This enables you to identify and manage subtypes of assets, such as Device assets that are computers, printers, or routers, and Software assets that run on Windows, Mac, or Linux systems in the appliance inventory. See About Asset Subtypes, custom fields, and device detail preferences.

**Assets that count toward your appliance license limit**

Your appliance license agreement entitles you to manage a specified number of devices that are categorized as Assets, and these Assets differ from assets used in the Asset Management component. Assets that count toward your are license limit include devices that 1) have been added to the appliance inventory but do not meet the definition of Managed Computers or Monitored Servers and 2) were not added to inventory manually, through the WSAPI, or through mobile management. Examples of Assets include printers, projectors, network gear, and storage devices.

**NOTE:** The assets you create and manage using the Asset Management component do not count toward the license limit.

See View product licensing information.

**AUP**

See Acceptable Use Policy .

**automatic labels**

Labels that are applied automatically, such as Smart Labels. See Setting up and using labels to manage groups of items.

# B

**blocking**

See Application Control .

**benchmark**

A SCAP benchmark is a security configuration checklist that contains a series of rules for evaluating the vulnerabilities of a device in a particular operational environment. The NIST (National Institute of Standards and Technology) maintains the National Checklist Repository that contains a variety of security configuration checklists for specific IT products and categories of IT products. See About benchmarks.

# C

**Cataloged applications**

Cataloged applications are executables that are in the official Software Catalog database. This includes both applications that appear in the appliance inventory (Discovered applications) and applications that do not appear in appliance inventory (Not Discovered applications). See About cataloged applications.

**catalog request**

See add to catalog request .

**category**

See software category .

**change management**

The ability to track changes made to items in the Administrator Console, such as scripts, reports, assets, and settings. See Configuring history settings.

**Charlie Root**

The email address used for communication from the appliance.

**NOTE:** Notifications and daily reports come from the default address, Charlie Root, (`root@<appliance_hostname>`) and you cannot modify this address.

**Classic Metering**

Classic Metering is the metering system that was available on the appliance prior to version 5.5. If you upgraded to version 5.5 from version 5.4 or lower, and you enabled metering prior to the upgrade, you can continue to access Classic Metering in the appliance 5.5 release. However, the Software Catalog metering system, which provides more detailed information than Classic Metering, replaced Classic Metering in the 6.0 release. Classic Metering is no longer available in version 6.0 and higher. See metering .

**Classic Reports**

The reporting feature available on the appliance version 5.2 and lower. Classic Reports are no longer available in version 5.5 and higher.

**Client Drop location**

The Client Drop location is a file share used for uploading large files, such as application installers and appliance backup files, to the appliance. Uploading files to the Client Drop location is an alternative to uploading files through the Administrator Console using the default HTTP mechanism, which can result in browser timeouts for large files. See Copy files to the appliance Client Drop location.

**clients**

See devices .

**Command Line Console**

The Command Line Console is a terminal window interface to the appliance. The interface is designed primarily to configure the appliance and enforce policies if the Administrator Console is not accessible. See Power-on the appliance and log in to the Administrator Console.

**Computers**

Computers is a category of devices that can be managed by the appliance. Examples of Computers include personal computers, servers, laptops, tablets, and smart phones. Your appliance license agreement entitles you to manage a specified number of Computers. See Managed Computers .

**Credentials Management**

Credentials Management enables you to organize the usernames and passwords required for logging in to other systems, such as managed computers and servers, and the information required for Google or SNMP authentication. This streamlines the process of entering and managing credentials and authentication information. See Managing credentials.

# D

**data retention**

The options for saving data for metering, device uptime, uncataloged applications, and backups on the appliance. See Configure Admin-level or organization-specific General Settings and Set the daily backup schedule and the number of backups to retain.

**data sharing**

The options for sharing appliance information with Quest KACE. See Configure data sharing preferences.

**Dell Command | Monitor**

Dell Command | Monitor is the monitoring tool of the Dell Command Suite. It enables remote management applications, such as the appliance, to access management information, monitor status, and change the state of enterprise client systems. If Dell Command | Monitor is detected on a managed device, the appliance uses the WMI (Windows Management Instrumentation) interface to collect detailed hardware inventory and health status. See About Dell Command | Monitor.

**Device Actions**

A feature that enables you to run commands on managed devices from the *Devices* list. For information about setting up Device Actions, see Configure appliance General Settings without the Organization component.

**devices**

Devices are machines, or endpoints, that are managed by the appliance. Your product license agreement entitles you to manage a specified number of devices, which are classified as Managed Computers, Assets, and Monitored Servers. Managed devices report data, such as software, hardware, and networking information, to the appliance. See View product licensing information.

**Discovered applications**

Discovered applications are executables in the appliance inventory that match the definitions of applications in the Software Catalog. You can enable metering for Discovered applications and suites, mark them as Not Allowed, and add license information for them. In addition, the Discovered software list can be exported in CSV format. You can export the Discovered software list, the Uncataloged list, and the Locally Cataloged list; you cannot export the entire Software Catalog.

Compare to Not Discovered applications . See Discovered applications.

**Discovery**

Discovery is the process of identifying devices that are connected to the network and retrieving information about those devices. Devices that can be discovered include laptops, desktops, servers, mobile devices, virtual devices, printers, network devices, wireless access points, routers, switches and more. These devices can be scanned and identified even if they do not have the KACE Agent installed on them. You can run Discovery scans on-demand or schedule scans to run at specific times. See About Device Discovery and device management.

# E

# F

**fast switching for organizations and linked appliances**

Fast switching makes it possible to switch from one organization to another using a drop-down list in the top-right corner of the Administrator Console instead of logging in to each organization separately. Also, it makes it possible to switch between linked K-Series appliances without logging in to each appliance separately. See Enable fast switching for organizations and linked appliances.

**File Synchronizations**

File Synchronizations enable you to distribute files to managed devices. Unlike Managed Installations, however, File Synchronizations do not install files; they simply distribute files. Use File Synchronizations to copy files of any type to managed devices. See Create and use File Synchronizations.

**filters**

See labels and organization filters .

# I

**Inventory**

Inventory includes information about the devices, applications, processes, startup programs, and services on managed devices on your network. Inventory is collected by the KACE Agent, which is installed on managed devices, uploaded using the inventory API, or obtained through connections to Agentless devices. You can view detailed data about individual managed devices, as well as aggregated data collected across all managed devices. In addition, you can use inventory information in reports, and in decisions about upgrades, troubleshooting, purchasing, policies, and so on. See Provisioning the KACE Agent.

**IP Scans**

See Discovery .

**ITNinja**

Sponsored by Quest KACE, ITNinja.com (formerly AppDeploy.com) is a product-agnostic IT-focused community website. It is the Internet's leading destination for IT professionals to share information and ask questions about system management related topics. The website provides a question and answer section and a blogging platform. If you choose to share anonymous usage data with ITNinja, the ITNinja feed appears on pages such as the software, Managed Installation, and File Synchronization detail pages in the Administrator Console. The feed is not available on *Software Catalog* detail page. See Enable the ITNinja feed.

Quest publishes a base set of Windows Reliability and Performance Monitor (PerfMon) templates and non-Windows open-source Perl scripts on ITNinja, so that users can extend their server monitoring capability and identify system and application performance issues. These unmanaged templates and scripts are available for download so that users do not have to create them from scratch.

# K

**KACE GO**

KACE GO is an app that enables administrators to access Service Desk tickets, inventory information, monitoring alerts, and application deployment features from their smart phones or tablets. The app also allows non-admin users to submit Service Desk tickets, view the status of submitted tickets, and read Knowledge Base articles from their mobile devices. You can download KACE GO from the Apple App Store for iOS devices, or from the Google Play Store for Android devices. See Configuring Mobile Device Access.

**KACE SDA series appliances**

The K2000 series includes system deployment appliances designed to fully automate the deployment of operating systems (OS). For more information about the KACE SDA series, go to the Quest website, https://quest.com/products/kace-systems-deployment-appliance/.

**appliance series appliances**

The appliance series includes system management appliances designed to fully automate system management tasks such as system management, application deployment, and asset management. For more information about the appliance series, go to the Quest website, https://quest.com/products/kace-systems-management-appliance/.

**Knowledge Base**

Quest has a Knowledge Base of articles about the appliance, which you can access at https://support.quest.com/kace-systems-management-appliance/kb. The Knowledge Base is continually updated with solutions to real-world issues that administrators encounter.

**Konductor**

Konductor is an internal appliance component that regulates communications between the appliance and managed devices to keep the system running smoothly. The number of tasks Konductor is running appears on the *Tasks in Progress* widget. In addition, task throughput information appears in the General Settings (on appliances with the Organization component enabled) or in the Agent Settings (on appliances without the Organization component enabled).

See:

- About Dashboard widgets
- Configuring System-level and Admin-level General Settings

**KScripts**

See Offline KScripts , and Online KScripts .

# L

**labels**

Labels are containers that organize and categorize items, such as devices, so that you can manage them as a group. For example, you can use labels to identify devices that have the same operating system or that are in the same geographic location. You can then initiate actions, such as distributing software or deploying patches, on all of the devices that in that label. Labels can either be manually assigned to specific items or automatically assigned to items when they are associated with criteria, such as SQL or LDAP queries. See Setting up and using labels to manage groups of items.

**label groups**

Label groups enable you to organize labels so you can manage them as a group. Label groups share their types with the labels they contain. Not only can a label group include multiple labels, but a label can be associated with more than one label group. See Add, view, or edit label groups.

**LDAP Browser**

The LDAP Browser is a wizard that enables you to browse and search data located on an LDAP server, such as an Active Directory server. See Use the LDAP Browser.

**LDAP Labels**

LDAP labels are labels that interact with the Active Directory or LDAP (Lightweight Directory Access Protocol) server. You can use LDAP Labels to automatically label device records and user records based on LDAP or Active Directory queries or search filters. LDAP Labels are applied to devices that match the search criteria. See Managing LDAP Labels.

**linking**

See appliance linking .

**Localization component**

A appliance component that enables you to choose the language to use for the Command Line Console, Administrator Console, and User Console. See Configuring locale settings.

**Locally Cataloged applications**

Applications that are not in the official version of the Software Catalog, but that have been added to the local version on the appliance, are referred to as Locally Cataloged applications. Locally Cataloged applications can be metered, marked as Not Allowed, and associated with License assets. See About Locally Cataloged applications.

**Log Enablement Package**

Log Enablement Packages (LEPs) enable performance threshold monitoring and monitoring for applications such as Exchange, Internet Information Services (IIS), and so on, for servers. In the *Log Enablement Packages* list page, Quest publishes a base set of Windows Reliability and Performance Monitor (PerfMon) templates and non-Windows open-source Perl scripts, so that users can extend their monitoring capability and identify system and application performance issues. Monitoring on the appliance works without these additional templates and scripts, but the profiles that are created from the templates and scripts are helpful if users want to do performance threshold monitoring. See Configuring application and threshold monitoring with Log Enablement Packages.

**logs**

See Search the scripting logs.

# M

**machines**

See devices .

**Mac profiles**

Mac profiles are files that are used to configure user-level and system-level policies on Mac devices. You can use the appliance to distribute Mac profiles to Agent-managed devices running Mac OS X. See Managing Mac profiles.

**Managed Computers**

Your product license agreement entitles you to manage a specified number of devices that are categorized as Managed Computers. Managed Computers are devices in appliance inventory that: 1) have Windows, Mac, Linux, or UNIX operating systems, 2) are categorized as PCs or servers, and 3) were not added to inventory manually, through the WSAPI, or through mobile device management. See View product licensing information.

**Managed Installations**

Managed Installations (MI) are the primary mechanism for deploying or removing applications from appliance managed devices. Each Managed Installation describes a specific application title and version to be installed or removed, including installation commands, installation files, and target devices (by label). Managed Installations always take place at the same time that managed devices upload inventory data to the appliance. In this way, the appliance confirms that the installation is actually needed before it performs the installation. Installation packages can be configured to run silently or with user interaction. Managed Installations can include installation, uninstallation, and command-line parameters. See Using Managed Installations.

**manual labels**

See labels .

**metering**

Software metering enables you to collect information about how applications are installed and used on the Windows and Mac devices that you manage. This includes Windows Store applications, such as Bing Travel. Metering is not available for applications installed other operating systems, such as Linux. In the Software Catalog, metering can be enabled for applications that are listed as Discovered and Not Discovered and for applications that are Locally Cataloged. Metering cannot be enabled for operating system software, applications installed on unsupported operating systems, such as Linux, or for applications that are listed as Uncataloged in the Software Catalog. See About software metering.

**MIA**

Missing in action. Devices that are being managed by the appliance, but that have not been inventoried on schedule are referred to as MIA devices. See Managing MIA devices.

**Mobile Device Access**

Mobile Device Access enables you to interact with the appliance using KACE GO.

KACE GO is an app that enables administrators to access Service Desk tickets, inventory information, and application deployment features from their smart phones or tablets. The app also allows non-admin users to submit Service Desk tickets, view the status of submitted tickets, and read Knowledge Base articles from their mobile devices. You can download KACE GO from the Apple App Store for iOS devices, or from the Google Play Store for Android devices.

See Configuring Mobile Device Access.

**Monitored Servers**

Your product license agreement entitles you to manage a specified number of devices that are categorized as Monitored Servers. Monitored Servers are servers that 1) meet the requirements for Managed Computers and 2) have Monitoring enabled. You can monitor 5 servers with your appliance license. If you want to be able to monitor up to 200 servers, you must obtain a license for the Monitoring Module. See View product licensing information and Managing monitoring for devices.

**MSI Installer template**

This template enables you to create a script that sets the basic command line arguments for running MSI-based installers. For command-line options, go to the Microsoft MSI Command-Line documentation at http://msdn.microsoft.com. See Add MSI Installer scripts.

# N

**nodes**

See devices .

**non-computer devices**

Non-computer devices are assets such as printers, routers, network gear, and other devices that do not meet the definition of Computers. Administrators can create Asset Subtypes to track information related to specific non-computer devices. See About Asset Subtypes, custom fields, and device detail preferences.

**Not Allowed applications**

Not Allowed applications are applications that have been marked as Not Allowed on the *Software Catalog* page. Windows and Mac applications can be marked as Not Allowed only if they are classified as Discovered, Not Discovered, or Locally Cataloged applications. Applications that are Uncataloged cannot be marked as Not Allowed until they are added to the Software Catalog. Applications that are marked as Not Allowed can be blocked from running on managed devices if those devices have an Application Control-enabled label applied to them. See Using Application Control.

**Not Discovered applications**

Applications that do not exist in the inventory, but that do exist in the Quest KACE Software Catalog, are referred to as Not Discovered applications. You can enable metering for Not Discovered applications, mark them as Not Allowed, and add license information for them. However, because the applications have not been found in the local appliance inventory, the Not Discovered software list cannot be exported in CSV format. Compare to Discovered applications . See Not Discovered applications.

**notifications**

Notifications are email messages the appliance sends to administrators when devices, scan results, and assets meet specified criteria. For example, if you want to notify administrators when devices approach disk space limits, you can set up alerts based on disk usage. Notifications are sent when devices meet the specified criteria.

The appliance checks inventory against the criteria in the notification schedules at the specified frequency. When an item meets the criteria, the appliance sends email to the specified recipients.

Messages that are sent through email based on selected criteria and at scheduled intervals. See Scheduling notifications.

# O

**Offline KScripts**

Scripts that run at a scheduled time, based on the target device's clock. Offline KScripts can run even when target devices are not connected to the appliance, such as when devices start up or when users log in. You can create these scripts using the scripting templates. See Adding and editing scripts.

**Online KScripts**

Scripts that run only when a target device is connected to the appliance. Online KScripts run at scheduled times based on the appliance clock. You can create these scripts using the scripting templates. See Adding and editing scripts.

**Online shell scripts**

Scripts that run at scheduled times based on the appliance clock, but that run only when the target device is connected to the appliance. Online shell scripts are created using simple text-based scripts, such as Bash, Perl, batch, and so on, that are supported by the target device's operating system. Batch files are supported on Windows, along with the different shell script formats supported by the specific operating system of the target devices. See Adding and editing scripts.

**Organization component**

An appliance component that enables you to create and manage organizations within the appliance. This makes it possible to assign devices to separate organizations and to create User Roles within each organization to control administrator and user access. For example, you can configure organizations so that administrators can only view and perform actions on devices in their organization; they cannot view devices that belong to other organizations.

See Creating and managing organizations.

**organization filters**

Organization filters are similar to labels, but they serve a specific purpose: Organization filters automatically assign devices to organizations when devices are inventoried.

There are two types of organization filters:

- **Data Filter**: Assigns devices to organizations automatically, based on search criteria. When devices are inventoried, they are assigned to the organization if they meet the criteria. This filter is similar to Smart Labels in that it assigns devices to organizations automatically if they match specified criteria.
- **LDAP Filter**: Assigns devices to organizations automatically based on LDAP or Active Directory interaction. When devices are inventoried, the query runs against the LDAP server. If devices meet the criteria, they are automatically assigned to the organization.

  See Managing organization filters.

**organizations**

Organizations are logical instances of an appliance that run on a single appliance. You can create organizations if the Organization component is enabled on your appliance, each organization is supported by its own database, and you manage each organization's inventory and other components separately. See Creating and managing organizations.

**OVAL**

OVAL (Open Vulnerability and Assessment Language) is an internationally recognized standard for detecting security vulnerabilities and configuration issues on Windows devices. OVAL security checks determine assets that are out of compliance and let you customize security policies to enforce rules, schedule tests to run automatically, and run reports based on the results.

OVAL is compatible with the Common Vulnerabilities and Exposures (CVE) list. CVE content is determined by the CVE Editorial Board, which is composed of experts from the international information security community. New information about security vulnerabilities discussed on the Community Forum is sent to the CVE Initiative for possible addition to the list. For more information about CVE, MITRE Corporation, or the OVAL Board, go to http://cve.mitre.org.

The ability to describe vulnerabilities and exposures in a common language makes it easier to share security data with other CVE-compatible databases and tools.

See Understanding OVAL tests and definitions.

# P

**patching**

Patching is a mechanism for deploying security-related and other important patches from Microsoft, Apple, and other third-party vendors such as Adobe. This includes patches for operating systems as well as applications. When deploying patches in a production environment, you can select which operating systems you want to patch and define schedules for patching by using labels. See About patch management.

**provisioning schedules**

Provisioning schedules specify how and when to install the KACE Agent on devices you want to manage using Agent software. See Managing provisioning schedules.

**provisioning**

The process of installing the KACE Agent on managed devices. See Provisioning the KACE Agent.

# R

**Replication Shares**

Replication Shares are devices that keep copies of files for distribution, and they are especially useful if your managed devices are deployed across multiple geographic locations. For example, using a Replication Share, a device in New York could download files from another device at the same office, rather than downloading those files from an appliance in Los Angeles. A Replication Share is a full replication of all digital assets and is managed automatically by the appliance. Whenever a Replication Share is specified for a label, devices in that label go to the Replication Share to get files. See Using Replication Shares.

**reporting**

The ability to gather information about hardware, software, and license compliance on a per-device basis. You can run standard reports, or create custom reports using a step-by-step report wizard. In addition, you can schedule reports to run and be delivered through email. Advanced users can also write reports against the appliance database using any ODBC (Open DataBase Connectivity) -compliant reporting engine. See Using reports and scheduling notifications.

**resources**

Items such as scripts, reports, Managed Installations, and software that can be imported or exported among organizations and appliances. See Importing and exporting appliance resources.

**role**

The permissions related to user accounts and organizations. See:

- Managing System-level user accounts
- Managing organization user accounts
- Managing Organization Roles and User Roles
- Create and assign monitoring-specific roles

# S

**SAM**

SAM is short for Software Asset Management, a method of managing applications in inventory. See Managing Software Catalog inventory.

**Samba share**

The built-in file sharing system on the appliance. See Enable file sharing at the System level.

**SCAP**

SCAP (Secure Content Automation Protocol), is a set of open standards that enumerate software flaws, monitor security-related configurations and product names, and examine systems to determine the presence of vulnerabilities and rank (score) the impact of the discovered security issues on Windows devices. SCAP is maintained by the National Institute of Standards and Technology (NIST), and its use is mandated by government agencies such as the US OMB (United States Office of Management and Budget).

SCAP uses the US government's National Vulnerability Database (NVD), which is a standards-based vulnerability management data repository. NVD includes databases of security checklists, security-related software flaws, misconfigurations, product names, and impact metrics. For more information on SCAP and NVD, go to the NIST websites at http://scap.nist.gov/index.html and http://nvd.nist.gov/.

See About SCAP.

**scripting**

The ability to create and run a set of actions on managed devices. Scripts can be designed to do many different things, from installing or removing applications to verifying and changing settings, such as firewall settings, on managed devices. Scripts are deployed and run based on labels and schedules that you define, operating independently of the inventory process that is central to Managed Installations. See Adding and editing scripts.

**scripts**

See Offline KScripts , Online KScripts , and Online shell scripts .

**Server monitoring**

The appliance offers a module with which to perform basic performance monitoring for servers in inventory. The monitoring feature targets server-class operating systems, and provides default monitoring profiles that define criteria for performance alerts for each operating system. You can define additional, custom profiles that point to alternative event logs or OS level logs, with similar or different criteria.

**Service Desk**

Service Desk is the default name for the end-user trouble-ticket tracking system that is part of the appliance User Console. The Service Desk enables end users to submit trouble tickets through email or through the User Console, `http://<appliance_hostname>/user`, where `<appliance_hostname>` is the hostname of your appliance. Your help desk team manages these tickets through email, the Administrator Console, `http://<appliance_hostname>/admin`, or the KACE GO app. You can customize the categories and fields associated with tickets as needed. See About Service Desk.

**Share With Quest**

The options for sharing appliance information with Quest. See Configure data sharing preferences.

**single sign on for appliances**

See appliance linking .

**single sign on for the Administrator Console and User Console**

Single sign on enables users who are logged on to the domain to access the appliance Administrator Console and User Console without having to re-enter their credentials on the appliance login page. See About single sign on (SSO).

**Smart Labels**

Smart Labels are labels that are applied and removed automatically based on criteria you specify. For example, to track laptops in a specific office, you could create a label called "San Francisco Office," and create a Smart Label based on the IP address range or subnet for devices located in the San Francisco

office. Whenever a device that falls within the IP address range is inventoried, the Smart Label “San Francisco” is automatically applied. When the device leaves the IP address range, and is inventoried again, the label is automatically removed.

Smart Labels are applied to and removed from managed devices when the appliance processes device inventory. So if you create a Smart Label that enables metering on devices, it might take time for the Smart Label to be applied to devices and for devices to report metering information. Metering is enabled for devices that match the Smart Label criteria only after devices are inventoried and the Smart Label is applied.

See Managing Smart Labels.

**Software Catalog**

The Software Catalog is a database that contains standardized information about more than 57,000 Windows and Mac applications and software suites. Information in the catalog includes the name, version, publisher, and category of each application or suite as well as the operating system on which the application or suite runs. See Managing Software Catalog inventory.

**software category**

Software categories classify software as belonging to a specified group, such as software drivers or security applications. For applications listed on the Software page, categories are assigned manually. For applications listed on the Software Catalog page, software categories are assigned to applications automatically. See Using software threat levels and categories.

# T

**tether**

The connection to Quest Support. The tether enables Quest representatives to connect to your system for troubleshooting. See Enable a tether to Quest KACE Support.

**task throughput**

The task load on the appliance. See Konductor .

**third-party applications**

Applications created by third-parties and licensed for use in Quest KACE products.

**threat levels**

Threat levels can be used to indicate the relative safety of items and the number of devices on which those items are located. This information is for tracking purposes only. The appliance does not enforce policies based on threat levels. See Using software threat levels and categories.

# U

**Uncataloged applications**

Uncataloged applications are executables that are in the inventory but that do not appear in the Software Catalog. You can view applications that are listed as Uncataloged on the *Software Catalog* page. However, you cannot enable metering for Uncataloged applications, mark them as Not Allowed, or add license information for them. Uncataloged applications must be added to the local or public Software Catalog before they can be metered, marked as Not Allowed, or associated with license information. See Uncataloged applications.

**User Console**

The User Console is the web-based interface that makes software, scripts, and other downloadable items available to users on a self-service basis. It also enables users to access Knowledge Base articles and to file Service Desk support tickets to request help or report issues. To access the User Console, go to `http://<appliance_hostname>/user` where `<appliance_hostname>` is the hostname of your appliance. See About Service Desk.

**User Downloads**

User Downloads are software installation packages, such as printer drivers and other applications, that are distributed to users through the User Console. See Managing User Downloads.

# V

**virtual appliance**

See appliance or virtual appliance .

**Vulnerability Testing**

Vulnerability testing is the process of scanning, and establishing schedules to scan, Windows devices for known vulnerabilities using the Open Vulnerability Assessment Language (OVAL) battery of tests. Vulnerability testing is a useful complement to patching and other forms of security hardening to verify whether those measures are addressing known issues. See About OVAL security checks.

# W

**Wake-on-LAN**

Wake-on-LAN enables you to power-on devices remotely from the appliance regardless of whether the devices have the KACE Agent installed. See Using Wake-on-LAN.

# About us

Quest creates software solutions that make the benefits of new technology real in an increasingly complex IT landscape. From database and systems management, to Active Directory and Office 365 management, and cyber security resilience, Quest helps customers solve their next IT challenge now. Around the globe, more than 130,000 companies and 95% of the Fortune 500 count on Quest to deliver proactive management and monitoring for the next enterprise initiative, find the next solution for complex Microsoft challenges and stay ahead of the next threat. Quest Software. Where next meets now. For more information, visit www.quest.com.

# Technical support resources

Technical support is available to Quest customers with a valid maintenance contract and customers who have trial versions. You can access the Quest Support Portal at https://support.quest.com.

The Support Portal provides self-help tools you can use to solve problems quickly and independently, 24 hours a day, 365 days a year. The Support Portal enables you to:

- Submit and manage a Service Request
- View Knowledge Base articles
- Sign up for product notifications
- Download software and technical documentation
- View how-to-videos
- Engage in community discussions
- Chat with support engineers online
- View services to assist you with your product.

# Legal notices



If you have any questions regarding your potential use of this material, contact:

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Refer to our Web site (https://www.quest.com) for regional and international office information.

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**Legend**

**CAUTION: A CAUTION icon indicates potential damage to hardware or loss of data if instructions are not followed.**

**IMPORTANT, NOTE, TIP, MOBILE, or VIDEO:** An information icon indicates supporting information.

KACE Service Desk Administrator Guide

Updated - October 2022

Software Version - 13.0

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