

Foglight® for Office 365™ 6.0.0
User Guide



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Legend

- **WARNING:** A WARNING icon indicates a potential for property damage, personal injury, or death.

- ⚠ **CAUTION:** A CAUTION icon indicates potential damage to hardware or loss of data if instructions are not followed.

- ⓘ **IMPORTANT NOTE, NOTE, TIP, MOBILE, or VIDEO:** An information icon indicates supporting information.

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Getting started with Foglight for Office 365

Microsoft® Exchange Online (SaaS) offers many different reports that can help you determine the overall status and health of your organization. It also offers tools to help Exchange Online administrators troubleshoot specific events (such as a message not arriving to its intended recipients), and audit reports to aid with compliance requirements.

Foglight™ for Office 365™ is designed to show performance and availability metrics provided by Microsoft® Exchange online (SaaS). This information is presented in the Office 365 Environment dashboard.

This guide is designed to familiarize you with the key features of Foglight for Office 365. It describes the dashboards and views included with Foglight for Office 365, and provides information about administering the Foglight for Office 365 and the ADFS (Active Directory® Federation Services) agents.

This section introduces the Foglight for Office 365 environment and provides essential foundational information.

For more information, review the following topics:

- [Installation requirements](#)
- [Data collection](#)
- [Dashboard location](#)

Installation requirements

Foglight for Office 365 is part of the Foglight for Exchange release package, and is automatically installed when deploying the Foglight for Exchange agent package.

For information about system requirements, version compatibility, and installation instructions, see the *Foglight for Exchange Release Notes*.

Data collection

Before starting using Foglight for Office 365 to collect data, ensure you have an administrative account with Microsoft® Office 365™. For example, go to this web page to create an Office 365™ Business Premium Trial account: https://portal.office.com/Signup?OfferId=467eab54-127b-42d3-b046-3844b860bebf&d=O365_BUSINESS_PREMIUM&culture=en-US&country=US&ali=1&wa=wsignin1.0&alo=1

The **Office 365 Environment** dashboard automatically displays the Microsoft® Exchange Online (SaaS) virtual machine hosts that Foglight for Office 365 monitors.

Dashboard location

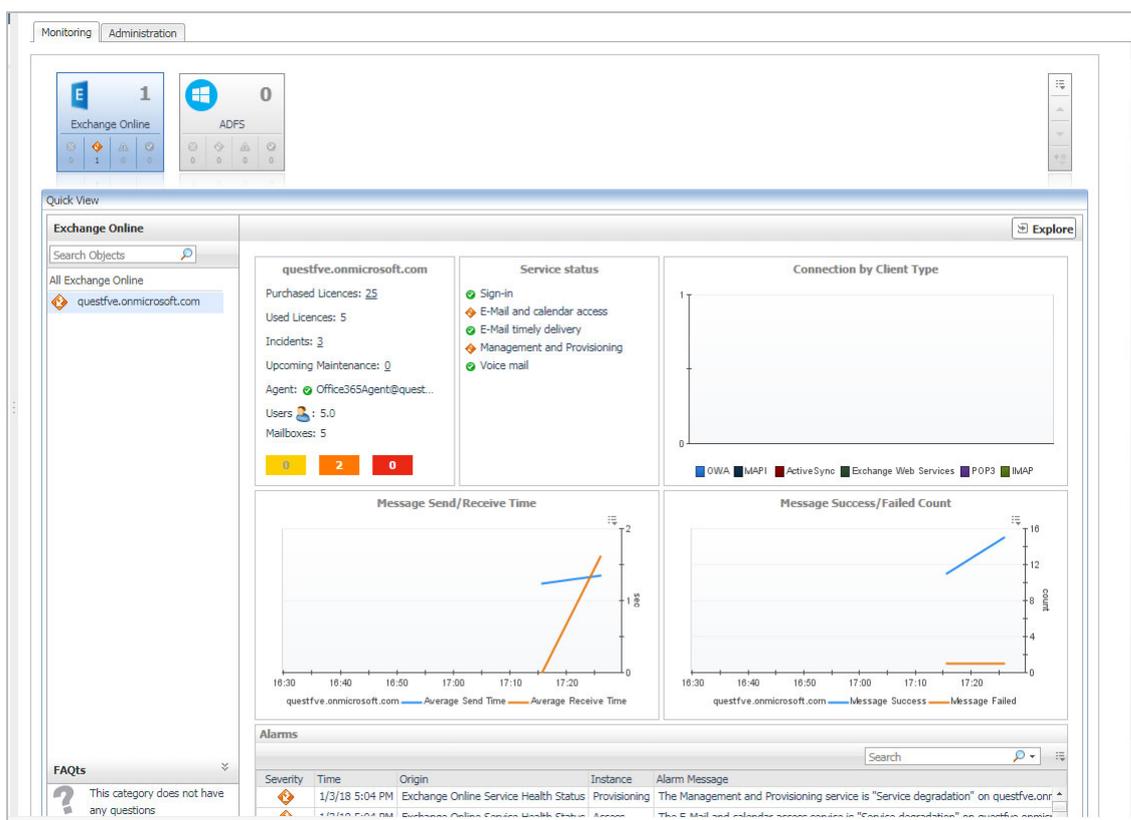
To access the dashboard:

- On the navigation panel, under Dashboards, click the **Office 365 > Office 365 Environment**.

The Office 365 Environment dashboard is displayed. It includes the following tabs:

- **Administration.** Allows you to perform administrative tasks. For details, see [Administering monitoring agents and collected data](#).
- **Monitoring.** Displays a summary of the Exchange Online services being monitored and their current state. For details, see [Monitoring your environment](#).

Figure 1. Office 365 Environment dashboard location



Administering monitoring agents and collected data

The **Administration** tab of the **Office 365 Environment** dashboard allows you to perform administrative tasks, including:

- Deploy the Foglight for Office 365 agent package
- Create, edit, activate, deactivate, and delete Foglight for Office 365 agents and ADFS (Active Directory® Federation Services) agents
- Start and stop collecting data
- Configure domain credentials and set up permissions necessary to use the Office 365™ APIs

This section includes the following topics:

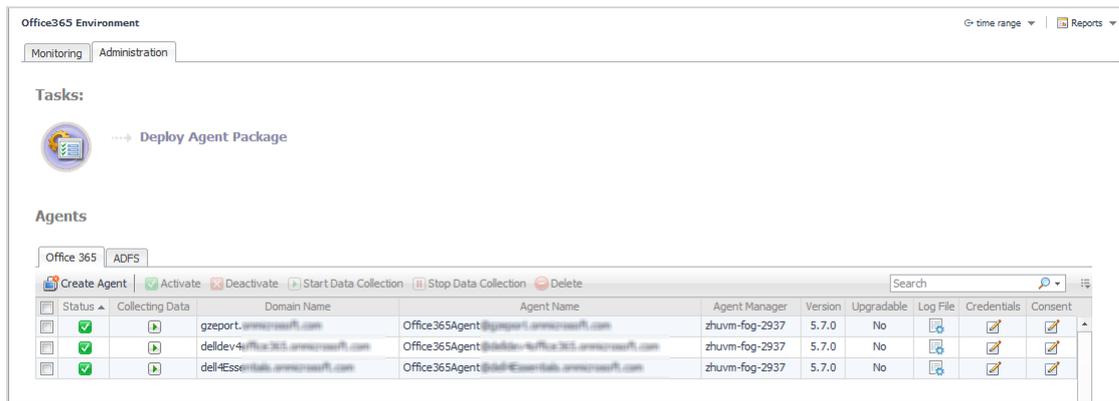
- [Accessing the Administration tab](#)
- [Deploy the Foglight for Office 365 agent package](#)
- [Managing Foglight for Office 365 agents](#)
- [Configuring Foglight for Office 365 agent properties](#)
- [Managing ADFS agents](#)
- [Configuring ADFS agent properties](#)
- [Managing certificates](#)

Accessing the Administration tab

To access the Administration tab:

- 1 On the navigation panel, under Dashboards, click **Office 365 > Office 365 Environment**.
The Office 365 Environment dashboard is displayed.
- 2 Click the **Administration** tab.

Figure 2. Office 365 Environment > Administration tab



The Administration tab includes the following components, and allows you to perform administrative tasks, as follows:

- Tasks list:
 - **Deploy Agent Package:** Deploy the Foglight for Office 365 agent package, create agent instances on one or more servers at a time, activate or deactivate the agents, and start and stop collecting data. For more information, see [Deploy the Foglight for Office 365 agent package](#).
- Agents view:
 - **Office 365 tab:** Add and configure Foglight for Office 365 agents on one or more servers. For additional information, see [Managing Foglight for Office 365 agents](#) and [Configuring Foglight for Office 365 agent properties](#).
 - **ADFS tab:** Add and configure ADFS agents on one or more servers. For additional information, see [Managing ADFS agents](#) and [Configuring ADFS agent properties](#).

Each tab in the Agents view includes the [Agents management table](#) and the [Agents management toolbar](#).

Agents management table

The Office 365 tab and ADFS tab contain the following information for each configured agent instance.

Table 1. Agents management table

Column	Office 365 tab - Description	ADFS tab - Description
	Use the selection check boxes to select agent instances for activation/deactivation, starting/stopping data collection, editing properties, or removal.	
Status	Indicates whether the agent instance is activated. A green check mark in this check box indicates that the agent is active.	
Collecting Data	Indicates whether the agent instance is currently collecting data. A green check mark in this check box indicates that the agent is collecting data.	
Domain Name	Displays the domain name of the Foglight for Office 365 agent instance.	N/A
Host Name	N/A	The fully qualified domain name (<i>myServer.myDomain.com</i>) of the target server from which data is to be collected.
Agent Name	Displays the name of the Foglight for Office 365 agent instance.	Displays the name of the ADFS agent instance.
Agent Manager	Displays the name of the Foglight Agent Manager Host assigned to the Foglight for Office 365 agent instance.	Displays the name of the Foglight Agent Manager Host assigned to the ADFS agent instance.

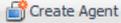
Table 1. Agents management table

Version	Displays the agent version.	
Upgradable	Indicates whether the agent is up to date or can be upgraded.	
Log File	Click the Log File icon in this column to download the agent log.	
Credentials	Click the Edit icon in this column to update the domain credentials.	N/A
Consent	Click the Edit icon in this column to update the agent permissions to use Foglight for Office 365 APIs.	N/A
Edit	N/A	Click the Edit icon in this column to update the ADFS agent properties and credentials.

Agents management toolbar

Use the buttons at the top of the [Agents management table](#) to manage your Foglight for Office 365 and ADFS agent instances, as described in the following table.

Table 2. Agents management toolbar

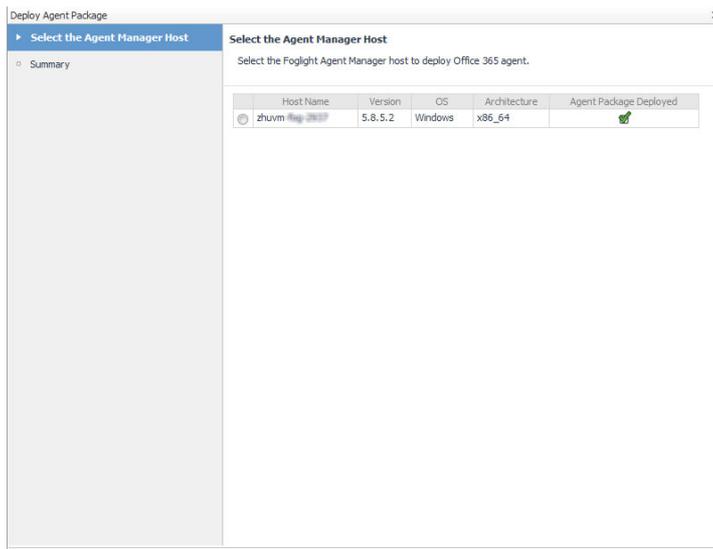
Button	Office 365 tab - Description	ADFS tab - Description
	Create and assign credentials for Foglight for Office 365 agents.	Create and assign credentials for ADFS agents.
	Select to activate the selected agent instance(s).	
	Select to deactivate the selected agent instance(s).	
	Select to start collecting data on the selected agent instance(s).	
	Select to stop collecting data on the selected agent instance(s).	
	Select to delete the selected agent instance(s).	
	Search for a Foglight for Office 365 agent using the Search filter.	Search for an ADFS agent using the Search filter.

For more information, see [Managing Foglight for Office 365 agents](#) and [Managing ADFS agents](#).

Deploy the Foglight for Office 365 agent package

To deploy the Foglight for Office 365 agent package:

- 1 Click **Deploy Agent Package** in the Administration tab > Tasks list.
The Deploy Agent Package wizard appears.



- 2 Select the Foglight Agent Manager Host to which the Foglight for Office 365 agent package is to be deployed, and click **Next**.
- 3 Review the information on the Summary page, then click **Finish**.
- 4 Once successfully deployed, a confirmation dialog appears. Click **OK** to close this dialog.

Managing Foglight for Office 365 agents

Foglight for Office 365 agents collect data from the Exchange Online environment, which is then used to populate the performance metrics presented in the Office 365 Environment dashboard and views.

This section describes how to:

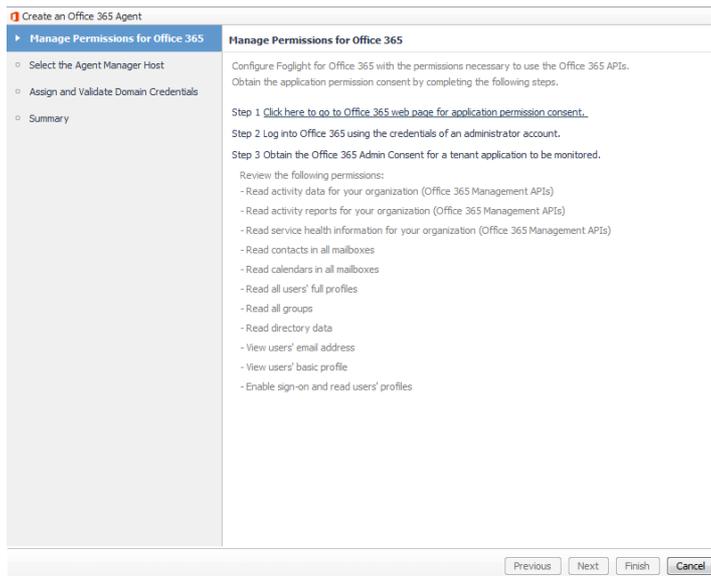
- [Add and configure Foglight for Office 365 agents](#)
- [Activate, deactivate, and delete agents](#)
- [Start and stop data collection](#)
- [Configure domain credentials](#)
- [Set up permissions to use the Office 365 APIs](#)

Add and configure Foglight for Office 365 agents

i | **IMPORTANT:** Foglight for Office 365 uses the `CATALYST_URL` registry variable to redirect you to the Foglight login page after completing the permission consent process. Ensure that this registry variable is correctly configured before proceeding with the agent creation wizard.

To add and configure a Foglight for Office 365 agent:

- 1 Click **Create Agent** on the Agents management toolbar.
The Create an Office 365 Agent wizard appears.



- 2 On the **Manage Permissions for Office 365** page, carefully read the instructions about the steps that you need to take before proceeding with the wizard, then click the link **Click here to go to Office 365 web page for application permission consent**.

You are redirected to the Foglight for Office 365 login page.

- 3 Log in using the credentials of an administrator account.
- 4 Obtain the Office 365 Admin Consent for a tenant application to be monitored. Review the following permissions:
 - Read activity data for your organization (Office 365 Management APIs)
 - Read service health information for your organization (Office 365 Management APIs)
 - Read contacts in all mailboxes
 - Read calendars in all mailboxes
 - Read all users' full profiles
 - Read all groups
 - Read directory data
 - View users' email address
 - View users' basic profile
 - Enable sign-on and read user's profiles

Click **Accept** to complete the permission consent and be redirected to the Foglight login page.

- 5 Log into the Foglight browser interface using your user credentials.

The **Create an Office 365 Agent** wizard appears, with the **Manage Permissions for Office 365** page displayed.
- 6 Click **Next**.
- 7 On the **Select Agent Manager Host** page, select the Foglight Agent Manager host to be used for the new Office 365 agent instances.

The table displays the following Foglight Agent Manager information:

- Host Name
- Version
- OS

- Architecture
- The **Office 365 Package Deployed** column indicates whether the Office 365 agent package is already deployed to the Agent Manager host(s). A green check in this column indicates that the agent package has been deployed.

i | **NOTE:** This value is not aware of a package's version. Therefore, if you have upgraded the cartridge, you must deploy the new agent package even if this column indicates that the FglAM host already has an agent package.

Click **Next**.

- 8 On the **Assign and Validate Domain Credentials** page, review the available credentials, and edit them, as necessary.
 - To create a new credential, click **Add domain to a new credential**.
 - In the **Create New Credential and Assign** dialog box, create a credential that you want to use to access the monitored resource. Type a new credential name, user name, password, and lockbox, and click **Submit**.
 - To select an existing credential, click **Add domain to an existing credential**.
 - In the **Select Existing Credential** dialog box, select an existing credential, and click **Submit**.

Click **Next**.

- 9 On the **Summary** page, review the configuration settings chosen for the new agent, and click **Finish**. The **Agent Setup** wizard closes. A confirmation dialog appears when the operation is complete.
- 10 Click **OK** to close the dialog box.

The Foglight for Office 365 agent is now added and configured, and appears in the **Office 365 Environment** dashboard > **Administration** tab.

Activate, deactivate, and delete agents

To activate a Foglight for Office 365 agent or a ADFS agent:

- 1 Select the agent instance in the Agents management table.
- 2 Click **Activate**.

Once successfully activated, the Status column for that agent is changed to display the **Active** icon.

To deactivate a Foglight for Office 365 agent or a ADFS agent:

- 1 Select a the agent instance in the Agents management table.
- 2 Click **Deactivate**.

Once successfully deactivated, the Status column for that agent is changed to display the **Deactivated** icon.

To delete a Foglight for Office 365 agent or a ADFS agent:

- 1 Select the agent instance in the Agents management table.
- 2 Click **Delete**.

A confirmation dialog appears.
- 3 Click **Delete** to confirm the operation.

The agent is deleted and removed from the Agents management table.

Start and stop data collection

To start data collection for a Foglight for Office 365 agent or a ADFS agent:

- 1 Select the agent instance in the Agents management table.
- 2 Click **Start Data Collection**.

If the operation is successful, the Collecting Data column for that agent is changed to display the **Collecting Data** icon.

If the operation is not successful, a dialog box opens recommending to review the agent log files for details. Click **OK** to close this dialog box.

i | **NOTE:** To download or open the agent log file, click the **Download Log File** icon in the **Log File** column for a select agent.

To stop data collection for a Foglight for Office 365 agent or a ADFS agent:

- 1 Select the agent instance in the Agents management table.
- 2 Click **Stop Data Collection**.

If the operation is successful, the Collecting Data column for that agent is changed to display the **Not Collecting Data** icon.

Configure domain credentials

To configure the credentials for a Foglight for Office 365 agent:

- 1 Select a Foglight for Office 365 agent instance in the Agents management table.
- 2 Click the **Edit** icon on the Credentials column.

The **Edit Domain Credentials** dialog box appears.

- 3 On the **Assign and Validate Domain Credentials** page, review the available credentials, and edit them, as necessary.
 - To create a new credential, click **Add domain to a new credential**.
 - a In the **Create New Credential and Assign** dialog box, create a credential that you want to use to access the monitored resource. Type a new credential name.
 - b Type in a user name, password, and select a lockbox to contain the credential.
 - c Click **Submit**.
 - To select an existing credential, click **Add domain to an existing credential**.
 - In the **Select Existing Credential** dialog box, select an existing credential, and click **Submit**.
- 4 Click **Finish**.

The Foglight for Office 365 agent credentials are now updated.

Set up permissions to use the Office 365 APIs

To update the consent to use Office 365™ APIs:

- 1 Select an Foglight for Office 365 agent instance in the Agents management table.
- 2 Click the **Edit** icon on the **Consent** column.

The **Update Agent Permissions** wizard appears.

- 3 On the **Update Permissions for Office 365** page, carefully read the instructions about the steps that you need to take before proceeding with the wizard, then click the link **Click here to go to Office 365 web page for application permission consent**.

You are redirected to the Office 365™ login page.

- 4 Log into Office 365 using the credentials of an administrator account.
- 5 Obtain the Office 365 Admin Consent for a tenant application to be monitored. Review the following permissions:
 - Read activity data for your organization (Office 365 Management APIs)
 - Read service health information for your organization (Office 365 Management APIs)
 - Read contacts in all mailboxes
 - Read calendars in all mailboxes
 - Read all users' full profiles
 - Read all groups
 - Read directory data
 - View users' email address
 - View users' basic profile
 - Enable sign-on and read user's profiles

Click **Accept** to complete the permission consent and be redirected to the Foglight login page, back to the **Update Permissions for Office 365** wizard.

- 6 Click **Finish**.

Configuring Foglight for Office 365 agent properties

The properties of a Foglight for Office 365 agent are required to connect to Exchange Online environment from which data is to be collected. These properties are either specified when the agent instance is configured or have a default value.

To display an agent's properties page:

- 1 From the navigation panel, navigate to **Dashboards > Administration > Agents > Agent Status**.
- 2 On the Agent Status dashboard, select an *Office365Monitoring* agent from the list and click **Edit > Edit Properties**.

The Agent Status dashboard refreshes, showing the current properties for the selected agent instance.

Figure 3. Office 365 agent properties

specify the authcode and tenantid	
Domain Name	questfive.onmicrosoft.com
Network Connection TimeOut	51000
Max Process Email Count	100

Data Collection Scheduler	
Collector Config	defaultSchedule
<input type="button" value="Edit"/> <input type="button" value="Clone"/> <input type="button" value="Delete"/>	
Changing Secondary Property lists have global implications	

The following tables describe the properties that can be modified for either an individual Foglight for Office 365 agent instance or for all agent instances, by clicking **Modify the private properties for this agent** or **Modify the properties of all Office365Agent agents** links, respectively.

i | **NOTE:** Configure the global agent properties for all agent instances first, then modify the private properties for any instances that require further configuration.

Use the **specify the authcode and tenantid** section to define the connection settings.

Table 3. Office365Monitoring agent properties - “specify the authcode and tenantid” section

Property	Default	Description
Domain Name	N/A	The fully qualified domain name (<i>myServer.myDomain.com</i>) of the Exchange Online environment from which data is to be collected.
Network Connection Timeout	51000	Specifies how long (milliseconds) the system waits for a response from the remote server before it times out. That is, the time in milliseconds that a data collection query will run before it is presumed to have failed and the network connection is terminated.
Max Process Email Count	100	Specifies the maximum amount of emails to be processed when populating the following metrics: <i>Message Send/Receive Time</i> and <i>Message Success/Failed Count</i> . For more information, refer to Environment Summary - Exchange Online (Selected Object) view on page 29.

The selection made in the **Data Collection Scheduler** section defines the data collection schedule to be used to collect performance metrics.

i | **NOTE:** The settings in this section are global and apply to all agents of type *Office365AgentMonitoring*.

The following table lists the collectors being used by the cartridge and the default collection interval for each (as defined in the *defaultSchedule*).

Table 4. Office365Monitoring agent properties - Data Collection Scheduler section

Collector Name	Default Collection Interval
servicesHealth	4 minutes
exchangeOnline	1 hour
licenseInfo	30 minutes
userInfo	30 minutes

Managing ADFS agents

ADFS (Active Directory® Federation Services) agents collect data from the Exchange Online environment, which is then used to populate the performance metrics presented in the Office 365 Environment dashboard and views.

This section describes how to:

- [Add and configure ADFS agents](#)
- [Activate, deactivate, and delete agents](#)
- [Start and stop data collection](#)
- [Edit ADFS agents properties](#)

Add and configure ADFS agents

To add and configure an ADFS agent:

- 1 Click **Create Agent** on the Agents management toolbar.

The Create an ADFS Agent wizard appears.

The screenshot shows a wizard window titled 'Create an ADFS Agent'. The current step is 'Configure Agent Properties'. On the left, there is a navigation pane with three steps: 'Select the Agent Manager Host', 'Assign and Validate Domain Credentials', and 'Summary'. The main area contains the following fields: 'Host Name' (text input), 'Communication Protocol' (dropdown menu set to 'WinRM through HTTP'), and 'WinRM Port' (text input set to '5985'). At the bottom, there are four buttons: 'Previous', 'Next', 'Finish', and 'Cancel'.

- 2 On the **Configure Agent Properties** page, configure the properties for the ADFS agents.
 - **Host Name.** The fully qualified domain name (*myServer.myDomain.com*) of the target server from which data is to be collected.
 - **Communication Protocol.** Selects to run the WMI query through DCOM or WinRM.
 - **WinRM Port.** The WinRM port number on the monitored server. This property only appears if the Communication Protocol is set to WinRM through HTTP or WinRM through HTTPS.



NOTE:

1. When selecting **Enable SSL For LDAP**, import the root certificate of the monitoring domain into both FglAM and Foglight keystore.

2. Ensure that the Subject Alternative Name of the certificate used by LDAP service includes both server FQDN and Domain name.

For detailed information on how to import certificate into both FMS and FglAM keystore in FIPS-compliant mode, refer to [Managing certificates for FglAM](#) on page 19 and [Managing certificates for FMS in FIPS-compliant mode](#) on page 22.

For detailed information on how to import certificate into both FMS and FglAM keystore in non-FIPS mode, refer to [Managing certificates for FglAM](#) on page 19 and [Managing certificates for FMS in non-FIPS mode](#) on page 21.

Click **Next**.

- 3 On the **Select the Agent Manager Host** page, select the Foglight Agent Manager host to be used for the new ADFS agent instances.

The table displays the following Foglight Agent Manager information (the same information is displayed on the Administration > Agents > Agent Hosts dashboard):

- Host Name
- Agent Manager Version

- OS Type
- OS Architecture
- The Agent Package Deployed column indicates whether the Foglight for Office 365 agent package is already deployed to the Agent Manager host(s). A green check in this column indicates that the agent package has been deployed.

Click **Next**.

- 4 On the **Assign and Validate Domain Credentials** page, review the available credentials, and edit them, as necessary.
 - To create a new credential, click **Add domain to a new credential**.
 - In the **Create New Credential and Assign** dialog box, create a credential that you want to use to access the monitored resource. Type a new credential name, domain, user name, password, and lockbox, and click **Submit**.
 - To select an existing credential, click **Add domain to an existing credential**.
 - In the **Select Existing Credential** dialog box, select an existing credential, and click **Submit**.

Click **Next**.

- 5 On the **Summary** page, review the configuration settings chosen for the new agent, and click **Finish**.
The Agent Setup wizard closes. The ADFS agent is now added and configured, and appears in the Agents management view.

Edit ADFS agents properties

The Agent Edit wizard guides you through the process of editing the ADFS agent properties.

To edit the ADFS agent properties:

- 1 In the Agents management table, click the **Edit** icon in the **Edit** column for the agent whose properties you want to edit.

The **Agent Edit** wizard appears.

- 2 On the **Configure Agent Properties** page, configure the properties for the selected agent.
 - **Communication Protocol**. Selects to run the WMI query through DCOM or WinRM.
 - **WinRM Port**. The WinRM port number on the monitored server. This property only appears if the Communication Protocol is set to WinRM through HTTP or WinRM through HTTPS.

Click **Next**.

- 3 On the **Assign and Validate Domain Credentials** page, review the available credentials, and edit them, as necessary.
 - To create a new credential, click **Add domain to a new credential**.
 - In the **Create New Credential and Assign** dialog box, create a credential that you want to use to access the monitored resource. Type a new credential name, domain, user name, password, and lockbox, and click **Submit**.
 - To select an existing credential, click **Add domain to an existing credential**.
 - In the **Select Existing Credential** dialog box, select an existing credential, and click **Submit**.

Click **Next**.

- 4 On the **Summary** page, review the configuration settings chosen for the new agent, and click **Finish**.
The **Agent Edit** wizard closes. The ADFS agent properties are now updated.

Configuring ADFS agent properties

The properties of an ADFS agent are required to connect to Exchange Online environment from which data is to be collected. These properties are either specified when the agent instance is configured or have a default value.

To display an agent's properties page:

- 1 From the navigation panel, navigate to **Dashboards > Administration > Agents > Agent Status**.
- 2 On the Agent Status dashboard, select an *ADFSAgent* agent from the list and click **Edit > Edit Properties**.

The Agent Status dashboard refreshes, showing the current properties for the selected agent instance.

Figure 4. ADFS Agent properties

The following tables describe the properties that can be modified for either an individual ADFS agent instance or for all agent instances, by clicking **Modify the private properties for this agent** or **Modify the properties of all ADFSagent agents** links, respectively.

NOTE: Configure the global agent properties for all agent instances first, then modify the private properties for any instances that require further configuration.

Use the **specify the hostname** section to specify the target server from which data is to be collected.

Table 5. ADFSagent properties - “specify the host name” section

Property	Default	Description
Host Name	N/A	The fully qualified domain name (<i>myServer.myDomain.com</i>) of the target server from which data is to be collected.
Network Connection Timeout	60000	Specifies how long (milliseconds) the system waits for a response from the remote server before it times out. That is, the time in milliseconds that a data collection query will run before it is presumed to have failed and the network connection is terminated.
Communication Protocol	WinRM Through HTTP	Selects to run the WMI query through DCOM, WinRM Through HTTP, or WinRM Through HTTPS .
WinRM Port	5985	Determines the WinRM port number in the monitored server.

The selection made in the **Monitored Services** section defines the services that are to be monitored by the selected agent(s). The services monitored by default are listed in the following table.

Table 6. ADFSagent properties - “Monitored Services” section

Service Name	Display Name
adfsrv	Active Directory Federation Services
MSSQL\$MICROSOFT##WID	Windows Internal Database
MSSQL\$MICROSOFT##SSEE	Windows Internal Database (MICROSOFT##SSEE)

The selection made in the **Data Collection Scheduler** section defines the data collection schedule to be used to collect performance metrics.

i | **NOTE:** The settings in this section are global and apply to all agents of type *ADFSAgent*.

The following table lists the collectors being used by the cartridge and the default collection interval for each (as defined in the *defaultSchedule*).

Table 7. ADFSAgent properties - Data Collection Scheduler section

Collector Name	Default Collection Interval
Service Collection	5 minutes
Performance Counter Collection	5 minutes
Diagnostic Test	1 hours

Managing certificates

Syntax Conventions

In order to successfully make use of the Foglight commands in your monitoring environment, review the syntax conventions before getting started. The syntax conventions are as follows:

- Generic examples follow the UNIX path structure that uses forward slashes '/' to separate directories.
- Platform-specific examples follow standard platform conventions. For example, UNIX-specific examples use forward slashes '/' as directory delimiters, while Windows examples use backslashes '\
- *<foglight_home>* is a placeholder that represents the path to the Foglight Management Server installation.
- *<foglight_agent_mgr_home>* is a placeholder that represents the path to the Foglight Agent Manager installation. This can be the location of the Foglight Agent Manager installation on a monitored host, or the home directory of the Foglight Agent Manager that comes embedded with the Foglight Management Server. For example:

Path to the Foglight Agent Manager installation on a monitored host (Windows):

C:\Quest\Foglight_Agent_Manager

Path to the embedded Foglight Agent Manager installation (Windows):

C:\Quest\Foglight\fglam

- Unless otherwise specified, Foglight commands are case-sensitive.

Managing certificates for FglAM

Foglight Evolve agents use Foglight Agent Manager (FglAM) to manage certificates for SSL encryption connection.

Prerequisite

All the certificate-related command line options require that FglAM be **up and running**.

Add a certificate

```
bin/fglam --add-certificate "user alias 1"=/path/to/certificate/file
```

- Validate the certificate and ensure the following:
 - It is not expired.
 - It is an X.509 format.
 - FglAM requires the Base64 format. To verify if the certificate file is encoded with Base64, open the certificate with a notepad and the certificate should be similar to the following example:

```
-----BEGIN CERTIFICATE-----  
XXXXXXXXXX=  
-----END CERTIFICATE-----
```

- **NOTE:** If the certificate is not Base64 format, use openssl command to convert the certificate file into a Base64 file. Use either of the following commands depending on the source form:
openssl x509 -inform DER -in xxx.cer -out xxx.crt
or
openssl x509 -inform PEM -in xxx.cer -out xxx.crt

- The `alias` is required and is used in the list and delete operations to refer to the certificate. It can be anything.

List installed certificates

```
bin/fglam --list-certificates
```

Print out a list of certificates and the aliases that refer to them.

Refer to the example output below:

```
List of installed certificates:  
  
Alias                Certificate Info  
-----  
user alias 1        XXXX
```

Delete a certificate

Remove a certificate referred to by an alias.

```
bin/fglam --delete-certificate "user alias 1"
```

A full example for managing certificate for FglAM

- Add an example certificate into FglAM certificate store

```
C:\Quest\Foglight\fglam\bin>fglam.exe --add-certificate "Evolve-test"="D:/Evolve-test.crt"
```

...

```
2020-02-27 16:31:01.000 INFO [native] Certificate added: Certificate from  
D:\Evolve-test.crt added as Evolve-test
```

- List the example certificate in the FglAM certificate store

```
C:\Quest\Foglight\fglam\bin>fglam.exe --list-certificate
```

...

```
Alias                Certificate
```

```
-----
Evolve-test
Issuer:
CN: XXX
```

- Delete the example certificate from the FglAM certificate store

```
C:\Quest\Foglight\fglam\bin>fglam.exe --delete-certificate "Evolve-test"
```

...

```
2020-02-27 16:28:21.000 INFO [native] Certificate deleted: Certificate
Evolve-test deleted
```

Managing certificates for FMS

Use the keytool utility shipped with Foglight to create, import, or export certificates. This utility can be found at: `<foglight_home>\jre\bin\keytool`.

There are two FMS running modes:

- None-FIPS (Federal Information Processing Standards) mode
- FIPS-compliant mode

Managing certificates for FMS in non-FIPS mode

The KeyStore Foglight used under non-FIPS mode is located at: `<foglight_home>\jre\lib\security\cacerts` (default password: `changeit`)

Add a certificate

Use the keytool command in FMS JRE located in `<foglight>\jre\bin`

```
keytool -import -trustcacerts -alias "<alias>" -file "<certificate path>" -keystore
<foglight_home>\jre\lib\security\cacerts -storepass changeit
```

- Validate the certificate and ensure the following:
 - It is not expired.
 - It is an X.509 format.
- Change the following before executing the command:
 - `<alias>`: The alias is required and is used in the list and delete operations to refer to the certificate. It can be anything.
 - `<foglight_home>`: The folder path where the Foglight is installed.
 - `<certificate path>`: Your custom certificate path.

List installed certificates

```
keytool -list -keystore <foglight_home>\jre\lib\security\cacerts -storepass changeit
```

Delete a certificate

Remove a certificate referred to by an alias.

```
keytool -delete -alias <alias> -keystore <foglight_home>\jre\lib\security\cacerts -
storepass changeit
```

A full example for managing certificate for FMS in non-FIPS mode

Add example certificate into FMS Certificate Store in non-FIPS mode

```
C:\Quest\Foglight\jre\bin> .\keytool.exe -import -trustcacerts -alias fveqaca -
file "C:\caca.cer" -keystore C:\Quest\Foglight\jre\lib\security\cacerts -
storepass changeit

Owner: CN=CA, DC=ca, DC=local
Issuer: CN=CA, DC=ca, DC=local
Serial number: xxxxxxxxxxxx

Valid from: Mon Jun 15 10:56:05 CST 2015 until: Mon Sep 23 14:58:03 CST 2047

Certificate fingerprints:

    MD5:  xxxx
        SHA1:  xxxx
        SHA256:  xxxx

.....

Trust this certificate? [no]:  yes
Certificate was added to keystore
```

Managing certificates for FMS in FIPS-compliant mode

The KeyStore Foglight used in FIPS-compliant mode is located at:
<foglight_home>/config/security/trust.fips.keystore (default password: nitrogen)

Add a certificate in FIPS-compliant mode

Use the keytool command in FMS JRE located in <foglight>/jre/bin.

```
keytool -import -trustcacerts -alias "<alias>" -file "<certificate path>" -keystore
"<Foglight_home>/config/security/trust.fips.keystore" -deststoretype BCFKS -
provider org.bouncycastle.jcajce.provider.BouncyCastleFipsProvider -providerpath
"<Foglight_home>/server/core/bc-fips.jar" -storepass nitrogen
```

- Validate the certificate and ensure the following:
 - It is not expired.
 - It is an X.509 format.
- Change the following before executing the command
 - <alias>: The alias is required and is used in the list and delete operations to refer to the certificate. It can be anything.
 - <Foglight_home>: The folder path where Foglight is installed.
 - <certificate path>: Your custom certificate path.

List installed certificates

```
keytool -list -keystore "<Foglight_home>/config/security/trust.fips.keystore" -
deststoretype BCFKS -provider
org.bouncycastle.jcajce.provider.BouncyCastleFipsProvider -providerpath
"<Foglight_home>/server/core/bc-fips.jar" -storepass nitrogen
```

Prints out a list of certificates and the aliases that refer to them.

Refer to the example output below:

```
Keystore type: BCFKS
Keystore provider: BCFIPS
Your keystore contains 151 entries
camerfirmachambersignca [jdk], Dec 18, 2019, trustedCertEntry,
Certificate fingerprint (SHA1):
4A:BD:EE:EC:95:0D:35:9C:89:AE:C7:52:A1:2C:5B:29:F6:D6:AA:0C
entrust2048ca [jdk], Dec 18, 2019, trustedCertEntry
...
```

Delete a certificate

Remove a certificate referred to by an alias.

```
keytool -delete -alias <alias> -keystore
"<Foglight_home>/config/security/trust.fips.keystore" -deststoretype BCFKS -
provider org.bouncycastle.jcajce.provider.BouncyCastleFipsProvider -providerpath
"<Foglight_home>/server/core/bc-fips.jar" -storepass nitrogen
```

A full example for managing certificate for FMS in FIPS-compliant mode

Add example certificate into FMS certificate store in FIPS-compliant mode

```
C:\Quest\Foglight\jre\bin>keytool -import -trustcacerts -alias "Evolve-Test" -file
"D:/Evolve-test.crt" -keystore
"C:/Quest/Foglight/config/security/trust.fips.keystore" -deststoretype BCFKS -
provider org.bouncycastle.jcajce.provider.BouncyCastleFipsProvider -providerpath
"C:/Quest/Foglight/server/core/bc-fips.jar" -storepass nitrogen

Owner: CN=CA, DC=ca, DC=local
Issuer: CN=CA, DC=ca, DC=local
Serial number: xxxx
Valid from: Sun Jan 06 23:07:06 CST 2019 until: Wed Apr 06 23:07:06 CST 2022
Certificate fingerprints:
...

Extensions:
...
Trust this certificate? [no]: yes
Certificate was added to keystore
```

Monitoring your environment

The **Monitoring** tab of the **Office 365 Environment** dashboard displays a summary of the Exchange Online services and the ADFS services (Active Directory® Federation Services) being monitored and their current state. It shows performance and availability metrics provided by the Microsoft® Exchange online (SaaS).

This section includes the following topic:

- [Accessing the Monitoring tab](#)

Accessing the Monitoring tab

To access the Monitoring tab:

- 1 On the navigation panel, under Dashboards, click **Office 365 > Office 365 Environment**.
The Office 365 Environment dashboard is displayed.
- 2 Click the **Monitoring** tab.

The Monitoring tab provides a summary of the Foglight for Office 365 services and the ADFS services in your Exchange environment. This tab consists of the following views:

- [Foglight for Office 365 Environment Overview](#)
- [Foglight for Office 365 Environment Quick View](#)

Foglight for Office 365 Environment Overview

The Foglight for Office 365 Environment Overview is located across the top of the Office 365 Environment dashboard. It provides an overview of your Exchange Online environment.

Figure 5. Foglight for Office 365 Environment Overview



The overview contains a tile for the following object types in your Exchange environment: Exchange Online services and ADFS services. It shows the number of objects in the environment and a count of objects in each of the alarm states (fatal, critical, warning, and normal).

Clicking the tile displays summary information for that object in the Quick View. Clicking an alarm state (for example, warning) on the tile displays summary information in the Quick View for the objects that are in the selected alarm state.

Foglight for Office 365 Environment Quick View

The Foglight for Office 365 Environment Quick View is located across the middle of the Office 365 Environment dashboard.

The following illustration is an example of the Exchange Online Quick View, displayed when the Exchange Online tile is selected in the Foglight for Office 365 Environment Overview.

Figure 6. Foglight for Office 365 Environment Quick View



Purpose

The Foglight for Office 365 Environment Quick View displays summary information pertaining to the component selected from the Foglight for Office 365 Environment Overview and Object Tree view. For example:

- Select an object tile in the Foglight for Office 365 Environment Overview to view summary information for all objects of the selected type.
- Select an alarm indicator in an object tile in the Foglight for Office 365 Environment Overview to view summary information for the objects of that type in the selected alarm state.
- Select an object item from the Object Tree view (as described below) to view summary information for that individual object.

Description of embedded views

The Foglight for Office 365 Environment Quick View consists of the following embedded views:

- [Object Tree view](#)
- [Object Summary view](#)
- [FAQts view](#)
- [Alarms view](#)

Object Tree view

The Object Tree view is located at the left of the Foglight for Office 365 Environment Quick View and displays objects based on the tile selected in the Foglight for Office 365 Environment Overview. Use the Object Tree view to select a single object or a group of objects of a particular type for display in the Object Summary view.

Object Summary view

The Object Summary view is located to the right of the Object Tree view and displays summary information for a single object or a group of objects, depending on what is selected in the Object Tree view. It provides a quick and easy view into the items that make up the selected object and the alarm states of these items.

In addition, in the top right corner of the Object Summary view there is an **Explore** button. Click this button to navigate to the Foglight for Office 365 Explorer dashboards, for more detailed metrics about the selected object or group of objects.

The following table lists the information displayed on the Object Summary view when different objects are selected.

Table 8. Object Summary view information

Item Selected in Overview	Item Selected in Object Tree	Views Displayed in Object Summary View
Exchange Online Tile	All Exchange Online	A view for all Exchange Online objects defined in your Exchange environment (see Environment Summary - Exchange Online (All Objects) view).
Exchange Online Tile - Alarm Indicator	All Exchange Online	A view for all Exchange Online objects in the selected state (see Environment Summary - Exchange Online (All Objects) view).
Exchange Online Tile or Alarm Indicator	Exchange Online Item	Several embedded views are displayed for the selected Exchange Online object (see Environment Summary - Exchange Online (Selected Object) view).
ADFS Tile	All ADFS	A view for all ADFS objects defined in your Exchange environment (see Environment Summary - ADFS (All Objects) view).
ADFS Tile - Alarm Indicator	All ADFS	A view for all ADFS objects in the selected state (see Environment Summary - ADFS (All Objects) view).
ADFS Tile or Alarm Indicator	ADFS Item	Several embedded views are displayed for the selected ADFS object (see Environment Summary - ADFS (Selected Object) view).

FAQts view

This functionality in this view will be available in a future release.

Alarms view

The Alarms view that appears at the bottom of the Foglight for Office 365 Environment Quick View displays a sortable list of all the outstanding alarms for the item selected in the Object Tree view.

Table 9. Alarms view

Description	Displays the following information for the selected Exchange Online object.
Data displayed	Severity. The icon in this column indicates the severity of the alarm.
	Time. Indicates the date and time when the alarm occurred.
	Origin. Indicated the cause of the alarm.
	Instance. Displays the topology object instance name that triggered the alarm.

Table 9. Alarms view

	Alarm Message. Displays the alarm message.
Where to go next	Clicking an alarm's severity icon, object icon, alarm message, or time displays a popup where you can acknowledge or clear the alarm. This popup provides pertinent information about the selected alarm, such as the rule of origin of the alarm, the history of the alarm, and all of the notes attached to the alarm. For more information about managing alarms, see the <i>Foglight User Guide</i> or online help.

Foglight for Office 365 views

This section provides a description of the metrics displayed in the lower-level views on the Foglight for Office 365 dashboards.

This section includes the following topics:

- [Exchange Online views](#)
- [ADFS views](#)

Exchange Online views

The following views are available to monitor the health and performance of the servers hosting these Exchange Online services:

- [Environment Summary - Exchange Online \(All Objects\) view](#)
- [Environment Summary - Exchange Online \(Selected Object\) view](#)
- [Explorer Summary - Exchange Online \(Selected Object\) view](#)

Environment Summary - Exchange Online (All Objects) view

The Environment Summary - Exchange Online (All Objects) view displays a summary of all Exchange Online services available on your Exchange environment.

The following table lists the features displayed in the Environment Summary - Exchange Online (All Objects) view.

Table 10. Environment Summary - Exchange Online (All Objects) view

Description	Displays the following metrics for all Exchange Online objects in your environment, or for all Exchange Online objects in the selected state.
Data displayed	<p>Domains. Displays all the domains available in your Exchange Online environment.</p> <p>E-Mail and Calendar Access. Indicates if the email and calendar service is operational.</p> <p>Sign-in. Indicates if the sign-in service is operational.</p> <p>E-Mail Timely Delivery. Indicates if the email delivery service is operational.</p> <p>Management and Provisioning. Indicates if the management and provisioning service is operational.</p> <p>Voice Mail. Indicates if the voice mail service is operational.</p>
Where to go next	N/A

Environment Summary - Exchange Online (Selected Object) view

The following table lists the features displayed on the Object Summary view for a selected Exchange Online object.

Table 11. Environment Summary - Exchange Online (Selected Object) view

Description	Displays the following metrics for the selected Exchange Online object.
Data displayed	<p>Exchange Online details. Displays the following information:</p> <ul style="list-style-type: none">• Domain name• Number of Purchased Licenses• Number of Used Licenses• Number of Incidents• Upcoming Maintenance events• Agent name• Number of Users• Number of Mailboxes• Alarm indicators <p>Service status. Indicates if the following services are operational:</p> <ul style="list-style-type: none">• Sign-in• E-Mail and calendar access• E-Mail timely delivery• Management and Provisioning• Voice mail <p>Connection by Client Type. This graph displays the number of mailbox connection established on the specified date.</p> <p>Message Send/Receive Time. The average cost time of all sent/received emails.</p> <p>Message Total/Failed Count. The amount of all emails or failed emails. This value might be greater than <i>Max Process Email Count</i>.</p>
Where to go next	Clicking a counter or a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.

Explorer Summary - Exchange Online (Selected Object) view

The Explorer Summary - Exchange Online (Selected Object) view provides detailed metrics for the Exchange Online object selected in the Foglight for Office 365 Environment Quick View. It includes the following tabs:

- Mail Traffic
- Mailbox Usage
- Data Loss Prevention

The following table lists the embedded views displayed in the Mail Traffic tab.

Table 12. Mail Traffic tab

Description	Displays the following metrics for a selected Exchange Online object in your environment.
Data displayed	New and deleted mailboxes. This graph displays the number of new mailboxes and the number of deleted mailboxes on a specified date.
	New and deleted groups. This graph displays the number of new groups and the number of deleted groups on the specified date.
	Top senders. This table displays the details about the users that reported the highest number of email messages sent.
	Top recipients. This table displays details about the users that reported the highest number of email messages received.
	Top sent transport rule matches. This table displays details about the number of transport rule matches sent.
	Top received transport rule matches. This table displays details about the number of transport rule matches received.
Where to go next	N/A

The following table lists the embedded views displayed in the Mailbox Usage tab.

Table 13. Mailbox Usage tab

Description	Displays the following metrics for a selected Exchange Online object in your environment.
Data displayed	Mailbox usage. This graph displays the following details about the mailbox usage on the specified date: <ul style="list-style-type: none"> • Total • Users < 25% storage limit • Exceeds storage limit
	Active and inactive mailboxes. This graph displays the following details about the mailbox status on the specified date: <ul style="list-style-type: none"> • Total • Inactive Mailboxes • Active Mailboxes
	Top Mailbox Consumers. This table displays details about the user mailboxes reported to consume the highest amount of space.
Where to go next	N/A

The following table lists the embedded views displayed in the Data Loss Prevention tab.

Table 14. Data Loss Prevention tab

Description	Displays the following metrics for a selected Exchange Online object in your environment.
Data displayed	Top sent DLP policy matches. This table displays details about the top number of policy matches sent.
	Top received DLP policy matches. This table displays details about the top number of policy matches received.
	Top sent DLP rules matches. This table displays details about the top number of transport rule matches sent.
	Top received DLP rules matches. This table displays details about the top number of transport rule matches received.
Where to go next	N/A

ADFS views

The following views are available to monitor the health and performance of the servers hosting these ADFS services:

- [Environment Summary - ADFS \(All Objects\) view](#)
- [Environment Summary - ADFS \(Selected Object\) view](#)

Environment Summary - ADFS (All Objects) view

The Environment Summary - ADFS (All Objects) view displays a summary of all ADFS services available on your Exchange environment.

The following table lists the features displayed in the Environment Summary - ADFS (All Objects) view.

Table 15. Environment Summary - ADFS (All Objects) view

Description	Displays the following metrics for all ADFS objects in your environment, or for all ADFS objects in the selected state.
Data displayed	State. State indicator showing the current state of the most severe alarm on the server hosting the service.
	Host Name. Name of the server hosting that service.
	Version. ADFS version running on the server hosting that service.
	Role. Role installed on the ADFS server: <ul style="list-style-type: none">• Federation server proxy• Primary federation server (SQL)• Primary federation server (WID)• Secondary federation server (WID)
Where to go next	N/A

Environment Summary - ADFS (Selected Object) view

The contents of this view depend on the role installed on the selected ADFS server. The following tables lists the features displayed on the Object Summary view for a selected ADFS object, for various cases.

Table 16. Environment Summary - ADFS (Federation server proxy) view

Description	Displays the following metrics for the selected ADFS object with the “Federation server proxy” role.
Data displayed	ADFS details. Displays the following information: <ul style="list-style-type: none">• ADFS service name• ADFS version• ADFS role• STS Reachable (status indicator)• Alarm indicators

Table 16. Environment Summary - ADFS (Federation server proxy) view

	<p>Host Info. Displays the following information:</p> <ul style="list-style-type: none"> • IP address • Host monitored (name and status indicator) • Agent (name and status indicator)
	<p>Service status. Indicates if the following services are operational:</p> <ul style="list-style-type: none"> • AD FS 2.0 Windows Service (for ADFS 2.0) • AD FS Windows Service (for ADFS 2.1) • Active Directory Federation Services (for ADFS 3.0)
	<p>CPU. Displays the current CPU load.</p>
	<p>Memory. Displays what percent of memory is currently being used. It can be used to determine whether you have memory problems.</p>
	<p>Network. Displays the state of the network utilization for the selected server.</p>
	<p>Storage. Displays the state of disk performance.</p>
	<p>Used Space. Displays the amount of storage already in use.</p>
	<p>For ADFS 2.0:</p> <p>Proxy Requests/sec. This graph displays the number of incoming requests per second that are sent to the federation server proxy.</p> <p>Proxy Requests. This graph displays the number of incoming requests sent to the federation server proxy.</p> <p>Proxy MEX Requests/sec. This graph displays the number of incoming MEX requests per second that are sent to the federation server proxy.</p> <p>Proxy MEX Requests. This graph displays the number of incoming WS-Metadata Exchange (MEX) requests that are sent to the federation server proxy.</p>
	<p>For ADFS 2.1 and ADFS 3.0:</p> <p>Requests/sec > Outstanding Requests. This graph displays the number of outstanding requests per second that are sent to the federation server proxy.</p> <p>Requests > Rejected Requests/sec. This graph displays the number of requests per second rejected by the federation server proxy.</p> <p>Request Latency. This graph displays the request latency for the federation server proxy.</p> <p>Rejected Requests. This graph displays the number of requests rejected by the federation server proxy.</p>
Where to go next	<p>Clicking a counter or a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.</p>

Table 17. Environment Summary - ADFS (Primary federation server) view

Description	<p>Displays the following metrics for the selected ADFS object with the “Primary federation server” role. Users can choose WID or SQL to store configuration data:</p> <ul style="list-style-type: none"> • Primary federation server (SQL) • Primary federation server (WID)
Data displayed	<p>ADFS details. Displays the following information:</p> <ul style="list-style-type: none"> • ADFS service name • ADFS version • ADFS role • Federation Metadata Ping (status indicator) • Alarm indicators

Table 17. Environment Summary - ADFS (Primary federation server) view

	<p>Host Info. Displays the following information:</p> <ul style="list-style-type: none"> • IP address • Host monitored (name and status indicator) • Agent (name and status indicator)
	<p>Service status. Indicates if the following services are operational:</p> <ul style="list-style-type: none"> • AD FS 2.0 Windows Service (for ADFS 2.0) • AD FS Windows Service (for ADFS 2.1) • Active Directory Federation Services (for ADFS 3.0) • Windows Internal Database (for ADFS 2.0 and ADFS 3.0), if WID is used to configure data
	<p>CPU. Displays the current CPU load.</p>
	<p>Memory. Displays what percent of memory is currently being used. It can be used to determine whether you have memory problems.</p>
	<p>Network. Displays the state of the network utilization for the selected server.</p>
	<p>Storage. Displays the state of disk performance.</p>
	<p>Used Space. Displays the amount of storage already in use.</p>
	<p>For ADFS 2.0, 2.1, and 3.0:</p> <p>Token Requests/sec. This graph displays the number of token requests per second sent to the federation server, including SSOAuth token requests per second.</p> <p>Token Requests. This graph displays the number of token requests sent to the federation server, including SSOAuth token requests.</p> <p>Federation Metadata Requests/sec. This graph displays the number of incoming federation metadata requests per second that are sent to the federation server.</p> <p>Federation Metadata Requests. This graph displays the number of incoming federation metadata requests that are sent to the federation server.</p>
Where to go next	<p>Clicking a counter or a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.</p>

Table 18. Environment Summary - ADFS (Secondary federation server) view

Description	<p>Displays the following metrics for the selected ADFS object with the “Secondary federation server” role:</p> <ul style="list-style-type: none"> • Secondary federation server (WID)
Data displayed	<p>ADFS details. Displays the following information:</p> <ul style="list-style-type: none"> • Primary Federation Server name • ADFS version • ADFS role • Federation Metadata Ping (status indicator) • Last Sync Status • Last Sync date and time • Alarm indicators <p>Host Info. Displays the following information:</p> <ul style="list-style-type: none"> • IP address • Host monitored (name and status indicator) • Agent (name and status indicator)

Table 18. Environment Summary - ADFS (Secondary federation server) view

	<p>Service status. Indicates if the following services are operational:</p> <ul style="list-style-type: none">• AD FS 2.0 Windows Service (for ADFS 2.0)• AD FS Windows Service (for ADFS 2.1)• Active Directory Federation Services (for ADFS 3.0)• Windows Internal Database (for ADFS 2.0 and ADFS 3.0), if WID is used to configure data
	<p>CPU. Displays the current CPU load.</p>
	<p>Memory. Displays what percent of memory is currently being used. It can be used to determine whether you have memory problems.</p>
	<p>Network. Displays the state of the network utilization for the selected server.</p>
	<p>Storage. Displays the state of disk performance.</p>
	<p>Used Space. Displays the amount of storage already in use.</p>
	<p>For ADFS 2.0, 2.1, and 3.0:</p> <p>Token Requests/sec. This graph displays the number of token requests per second sent to the federation server, including SSOAuth token requests per second.</p> <p>Token Requests. This graph displays the number of token requests sent to the federation server, including SSOAuth token requests.</p> <p>Federation Metadata Requests/sec. This graph displays the number of incoming federation metadata requests per second that are sent to the federation server.</p> <p>Federation Metadata Requests. This graph displays the number of incoming federation metadata requests that are sent to the federation server.</p>
Where to go next	<p>Clicking a counter or a graph in this view displays a metrics popup that describes the counters, provides more detailed data points, and lists current alarms for the selected metric.</p>

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