



One Identity Authentication Services 4.1

## Evaluation Guide

## Copyright 2017 Quest Software Inc. ALL RIGHTS RESERVED.

This guide contains proprietary information protected by copyright. The software described in this guide is furnished under a software license or nondisclosure agreement. This software may be used or copied only in accordance with the terms of the applicable agreement. No part of this guide may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording for any purpose other than the purchaser's personal use without the written permission of Quest Software Inc.

The information in this document is provided in connection with Quest Software products. No license, express or implied, by estoppel or otherwise, to any intellectual property right is granted by this document or in connection with the sale of Quest Software products. EXCEPT AS SET FORTH IN THE TERMS AND CONDITIONS AS SPECIFIED IN THE LICENSE AGREEMENT FOR THIS PRODUCT, QUEST SOFTWARE ASSUMES NO LIABILITY WHATSOEVER AND DISCLAIMS ANY EXPRESS, IMPLIED OR STATUTORY WARRANTY RELATING TO ITS PRODUCTS INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. IN NO EVENT SHALL QUEST SOFTWARE BE LIABLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL, PUNITIVE, SPECIAL OR INCIDENTAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF PROFITS, BUSINESS INTERRUPTION OR LOSS OF INFORMATION) ARISING OUT OF THE USE OR INABILITY TO USE THIS DOCUMENT, EVEN IF QUEST SOFTWARE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Quest Software makes no representations or warranties with respect to the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and product descriptions at any time without notice. Quest Software does not make any commitment to update the information contained in this document.

If you have any questions regarding your potential use of this material, contact:

Quest Software Inc.

Attn: LEGAL Dept

4 Polaris Way

Aliso Viejo, CA 92656

Refer to our Web site ([www.quest.com](http://www.quest.com)) for regional and international office information.




### Patents

Quest Software is proud of our advanced technology. Patents and pending patents may apply to this product. For the most current information about applicable patents for this product, please visit our website at [www.quest.com/legal](http://www.quest.com/legal).

### Trademarks

Quest, One Identity, and the One Identity logo are trademarks and registered trademarks of Quest Software Inc. and/or its affiliates in the U.S.A. and other countries. For a complete list of Quest Software trademarks, please visit our website at [www.quest.com/legal](http://www.quest.com/legal). All other trademarks, servicemarks, registered trademarks, and registered servicemarks are the property of their respective owners.

### 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, TIP, MOBILE, or VIDEO:** An information icon indicates supporting information.

Authentication Services Evaluation Guide

Updated - April 2017

Version - 4.1

# Contents

<b>Privileged Access Suite for Unix</b> .....	<b>6</b>
About This Guide .....	7
<b>Introducing One Identity Authentication Services</b> .....	<b>9</b>
Licensing Authentication Services .....	9
System Requirements .....	9
Windows Management Tools Requirements .....	10
Authentication Services Windows Components .....	11
Windows Permissions .....	11
Unix Agent Requirements .....	12
Authentication Services Unix Components .....	13
Authentication Services Permissions Matrix .....	14
Authentication Services Encryption Types .....	18
Management Console for Unix Requirements .....	18
Network Requirements .....	20
<b>Installing and Configuring Authentication Services</b> .....	<b>22</b>
Install the Management Console .....	22
Installing and Configuring the Management Console .....	23
Install Authentication Services Windows Components .....	24
Installing Authentication Services Windows Components .....	24
Configure Active Directory for Authentication Services .....	25
Configuring Active Directory for Authentication Services .....	25
About Active Directory Configuration .....	27
Join the Host to AD Without the Authentication Services Application Configuration .....	28
Configure Unix Agent Components .....	29
Setup Management Console for Unix .....	29
Configure the Console for Active Directory Logon .....	30
Setup Console Access by Role .....	30
Identify Console .....	31
Set Supervisor Password Dialog .....	31
Summary Dialog .....	32

Management Console for Unix Log On Page .....	32
Prepare Unix Hosts .....	33
Add Host(s) to the Management Console .....	33
Profile Host(s) .....	34
Check Readiness .....	39
Install Software on Host(s) .....	39
Join Host(s) to Active Directory .....	41
<b>Getting Started with Authentication Services .....</b>	<b>43</b>
Getting Acquainted with the Control Center .....	43
Management Console .....	44
Group Policy .....	45
Filter Options .....	45
Edit GPO .....	45
Settings Report .....	45
Show Files .....	46
Launch GPMC .....	46
Tools .....	46
Preferences .....	47
Licensing .....	47
Display Specifiers .....	48
Global Unix Options .....	50
Logging Options .....	52
Custom Unix Attributes .....	52
Learning the Basics .....	55
Add a Local Group .....	55
Add Local User Account .....	56
Add an Active Directory Group Account .....	57
Add an Active Directory User Account .....	57
Change the Default Unix Attributes .....	58
Active Directory Account Administration .....	58
Enable Local User for AD Authentication .....	58
Test the Mapped User Login .....	59
Unix-Enable an Active Directory Group .....	60
Unix-Enable an Active Directory User .....	60
Test the Active Directory User Login .....	61

Run Reports .....	62
Reports .....	63
Use Authentication Services PowerShell .....	74
Unix-Enable a User and User Group .....	75
PowerShell Cmdlets .....	76
Change Auditor for Authentication Services .....	78
Install Change Auditor for Authentication Services .....	79
One Identity Defender .....	79
Install One Identity Defender .....	79
<b>About us .....</b>	<b>81</b>
Contacting us .....	81
Technical support resources .....	81
<b>Index .....</b>	<b>82</b>

---

# Privileged Access Suite for Unix

## Unix Security Simplified

Privileged Access Suite for Unix solves the inherent security and administration issues of Unix-based systems (including Linux® and Mac OS X®) while making satisfying compliance requirements a breeze. It unifies and consolidates identities, assigns individual accountability and enables centralized reporting for user and administrator access to Unix. The Privileged Access Suite for Unix is a one-stop shop for Unix security that combines an Active Directory bridge and root delegation solutions under a unified console that grants organizations centralized visibility and streamlined administration of identities and access rights across their entire Unix environment.

## Active Directory Bridge

Achieve unified access control, authentication, authorization and identity administration for Unix, Linux®, and Mac OS X® systems by extending them into Active Directory (AD) and taking advantage of AD's inherent benefits. Patented technology allows non-Windows® resources to become part of the AD trusted realm, and extends AD's security, compliance and Kerberos-based authentication capabilities to Unix, Linux®, and Mac OS X®. (See <https://www.quest.com/products/authentication-services/> for more information about the Active Directory Bridge product.)

## Root Delegation

The Privileged Access Suite for Unix offers two different approaches to delegating the Unix root account. The suite either *enhances* or *replaces* sudo, depending on your needs.

- By choosing to enhance sudo, you will keep everything you know and love about sudo while enhancing it with features like a central sudo policy server, centralized keystroke logs, a sudo event log, and compliance reports for who can do what with Sudo.

(See <https://www.quest.com/products/privilege-manager-for-sudo/> for more information about enhancing sudo.)

- By choosing to replace sudo, you will still be able to delegate the Unix root privilege based on centralized policy reporting on access rights, but with a more granular permission and the ability to log keystrokes on all activities from the time a user logs

in, not just the commands that are prefixed with "sudo". In addition, this option implements several additional security features like restricted shells, remote host command execution, and hardened binaries that remove the ability to escape out of commands and gain undetected elevated access.

(See <https://www.quest.com/products/privilege-manager-for-unix/> for more information about replacing sudo.)

## Privileged Access Suite for Unix

Privileged Access Suite for Unix offers two editions - *Standard* edition and *Advanced* edition. Both editions include: **Management Console for Unix®**, a common management console that provides a consolidated view and centralized point of management for local Unix users and groups; and, **Authentication Services**, patented technology that enables organizations to extend the security and compliance of Active Directory to Unix, Linux®, and Mac OS X® platforms and enterprise applications. In addition

- The *Standard* edition licenses you for Privilege Manager for Sudo.
- The *Advanced* edition licenses you for Privilege Manager for Unix®.

Quest recommends that you follow these steps:

1. Install Authentication Services on one machine, so you can set up your Active Directory Forest.
2. Install Management Console for Unix®, so you can perform all the other installation steps from the management console.
3. Add and profile host(s) using the management console.
4. Configure the console to use Active Directory.
5. Deploy client software to remote hosts.

Depending on which Privileged Access Suite for Unix edition you have purchased, deploy either:

- **Privilege Manager for Unix®** software (that is, Privilege Manager Agent packages)
- OR-
- **Privilege Manager for Sudo** software (that is, Sudo Plugin packages)

## About This Guide

Welcome to the *Authentication Services Evaluation Guide*.

This is a self-directed, hands-on evaluation of Authentication Services. The content includes a product overview, installation instructions, and a "Getting Started" section that will help you get acquainted with the Control Center, and how to use Authentication Services to accomplish basic system administration tasks.

The guide is divided into three sections:

- [Introducing One Identity Authentication Services on page 9](#)
- [Installing and Configuring Authentication Services on page 22](#)
- [Getting Started with Authentication Services on page 43](#)

**NOTE:** The term "Unix" is used informally throughout the Authentication Services documentation to denote any operating system that closely resembles the trademarked system, UNIX®.



## Introducing One Identity Authentication Services

One Identity Authentication Services is patented technology that enables organizations to extend the security and compliance of Active Directory to Unix, Linux<sup>®</sup>, and Mac OS X<sup>®</sup> platforms and enterprise applications. It addresses the compliance need for cross-platform access control, the operational need for centralized authentication and single sign-on, and enables the unification of identities and directories for simplified identity and access management.

### Licensing Authentication Services

Authentication Services must be licensed in order for Active Directory users to authenticate on Unix and Mac OS X<sup>®</sup> hosts.

- NOTE: While you can install and configure Authentication Services on Windows<sup>®</sup> and use the included management tools to Unix-enable users and groups in Active Directory without installing a license, you must have the Authentication Services license installed for full functionality.

Contact your account representative for a license.

### System Requirements

Prior to installing Authentication Services, ensure your system meets the minimum hardware and software requirements for your platform. Authentication Services consists of Windows<sup>®</sup> management tools and Unix client agent components.

# Windows Management Tools Requirements

The following are the minimum requirements for installing Authentication Services in your Windows® environment:

**Table 1: Authentication Services Windows requirements**

## System Requirements:

Supported Windows® Platforms	<p>You can install Authentication Services on 32-bit or 64-bit editions of the following configurations:</p> <ul style="list-style-type: none"><li>• Windows® XP SP2 (or later)</li><li>• Windows® Vista</li><li>• Windows® 7</li><li>• Windows® 8</li><li>• Windows® Server 2003 SP1 (or later)</li><li>• Windows® Server 2008</li><li>• Windows® Server 2008 R2</li><li>• Windows® Server 2012</li></ul> <p><b>i</b> <b>NOTE:</b> Due to tightened security, when running Authentication Services Control Center on Windows® 2008 R2 (or higher) operating system, functioning as a domain controller, the process must be elevated or you must add authenticated users to the Distributed COM Users group on the computer. As a best practice, Quest does not recommend that you install or run the Authentication Services Windows® components on Active Directory domain controllers. The recommended configuration is to install the Authentication Services Windows® components on an administrative workstation.</p>
Prerequisite Windows® Software	<p>You can download all of the following prerequisite software free from the Microsoft website:</p> <ul style="list-style-type: none"><li>• Windows® Installer 3.1 (<a href="http://support.microsoft.com/kb/893803">http://support.microsoft.com/kb/893803</a>)</li><li>• Microsoft .NET Framework 3.5 SP1 or higher</li><li>• Windows® PowerShell 1.0 or higher (<a href="http://support.microsoft.com/kb/968929">http://support.microsoft.com/kb/968929</a>)</li></ul> <p>If any of the prerequisites are missing, the Authentication Services installer suspends the installation process to allow you to download the required component; it then continues the install.</p>

# Authentication Services Windows Components

Authentication Services includes the following Windows® components:

**Table 2: Windows components**

Windows® Component	Description
Authentication Services Control Center	A single console for access to all of the tools and configuration settings for Authentication Services.
Active Directory Users and Computers MMC Snapin Extensions	Unix management extensions for Active Directory users and groups.
Group Policy Management Editor MMC Snapin Extensions	Group Policy extensions for management of Unix, Linux® and Mac OS X®.
RFC2307 NIS Map Editor MMC Snapin	Provides the ability to manage NIS data in Active Directory.
NIS Map Import Wizard	Imports NIS data into Active Directory.
Unix Account Import Wizard	Imports Unix identity data into Active Directory.
Authentication Services PowerShell cmdlets	Provides the ability to script Unix management tasks.
Documentation	Full product documentation and online help.

## Windows Permissions

To install Authentication Services on Windows®, you must have:

- Local administrator rights
- Rights to create and delete all child objects in the container where you will install the configuration settings (first-time only)

Authenticated Users must have rights to read *cn*, *displayName*, *description*, and *whenCreated* attributes for container objects in the application configuration location. To change Active Directory configuration settings, Administrators must have rights to Create Child Object (container) and Write Attribute for *cn*, *displayName*, *description*, *showInAdvancedViewOnly* in the application configuration location.

**Table 3: Required Windows permissions**

Rights Required	For User	Object Class	Attributes
Create	Authentication Services	Container	

<b>Rights Required</b>	<b>For User</b>	<b>Object Class</b>	<b>Attributes</b>
Child Object	Administrators Only		
Delete Child Object	Authentication Services Administrators Only	Container	
Delete Child Object	Authentication Services Administrators Only	Container	
Write Attribute	Authentication Services Administrators Only	Container	cn, displayName, description, showInAdvancedViewOnly
Read Attribute	Authenticated Users	Container	cn, displayName, description, whenCreated

## Unix Agent Requirements

**NOTE:** To install Authentication Services on Unix, Linux®, or Mac OS X®, you must have root access rights.

Click <https://www.quest.com/products/authentication-services/#specifications> to view a list of supported Unix and Linux® platforms for Authentication Services 4.1.

With Authentication Services 4.1, Linux® platforms require glibc 2.4 or greater.

For maximum security and performance, before you begin the installation, make sure that you have the latest patches for your operating system version.

**Table 4: Patch level requirements**

<b>Platform</b>	<b>Patch Level</b>
Solaris® 8 SPARC®	108993-55 or greater
Solaris® 8 X86	108994-01 or greater
Solaris® 9 SPARC®	112874-37 or greater 112960-14 or greater 113319-22 or greater
Solaris® 9 X86	114432-37 or greater
Solaris® 10 SPARC®	127127-11 or greater
Solaris® 10 x86	127128-11 or greater
AIX® 5.3	OS level 5300-05 or greater

Platform	Patch Level
AIX 6.1	OS level 5300-05 or greater
AIX 7.1	OS level 5300-05 or greater
HPUX 11.11	GOLDQPK11i - GOLDBASE11i GOLDAPPS11i quality packs BUNDLE11i - Patch bundle linker tools cumulative patch (PHSS_30970 or greater)
HPUX 11.23	MAINTPACK E0306 or greater

**NOTE:** Quest recommends that you run the Preflight utility to check for supported operating system and correct operating system patches.  
(For more information, see [Running Preflight](#) in the *Authentication Services Installation Guide*.)

## Authentication Services Unix Components

Authentication Services includes the following Unix components:

**Table 5: Authentication Services Unix components**

Unix Component	Description
vasd	The Authentication Services agent background process that manages the persistent cache of Active Directory information used by the other Authentication Services components. vasd is installed as a system service. You can start and stop vasd using the standard service start/stop mechanism for your platform. vasd is installed by the <b>vasclnt</b> package.
vastool	The Authentication Services command line administration utility that allows you to join a Unix host to an Active Directory Domain; access and modify information about users, groups and computers in Active Directory; and configure the Authentication Services components. vastool is installed at /opt/quest/bin/vastool. vastool is installed by the <b>vasclnt</b> package.
vgptool	A command line utility that allows you to manage the application of Group Policy settings to Authentication Services clients. vgptool is installed at /opt/quest/bin/vgptool. vgptool is installed by the <b>vasgp</b> package.
oat (Ownership Alignment Tool)	A command line utility that allows you to modify file ownership on local Unix hosts to match user accounts in Active Directory. oat is installed at /opt/quest/libexec/oat/oat. oat is installed by the <b>vasclnt</b> package.
LDAP proxy	A background process that secures the authentication channel for

Unix Component	Description
	applications using LDAP bind to authenticate users without introducing the overhead of configuring secure LDAP (LDAPS). The LDAP proxy is installed by the <b>vasproxy</b> package.
NIS proxy	A background process that acts as a NIS server which can provide backwards compatibility with existing NIS infrastructure. The NIS proxy is installed by the <b>vasyp</b> package.
SDK package	The <b>vasdev</b> package, the Authentication Services programming API.

## Authentication Services Permissions Matrix

The following table details the permissions required for full Authentication Services functionality.

**Table 6: Authentication Services: Required permissions**

Function	Active Directory Permissions	Local Client Permissions
Authentication Services Application Configuration: creation	Location in Active Directory with Create Container Object rights	NA
Authentication Services Application Configuration: changes <ul style="list-style-type: none"> <li>• Unix Global Settings</li> <li>• Licensing</li> <li>• Custom Unix Attributes</li> </ul>	Update permission to the containers created above (no particular permissions if you are the one who created it)	NA
Schema optimization	Schema Administrator rights	NA
Display Specifier Registration	Enterprise Administrator rights	NA
Editing Users	Administrator rights	NA
Create any group policy objects	Group Policy Creator Owners rights	NA

Function	Active Directory Permissions	Local Client Permissions
RFC 2307 NIS Import Map Wizard	Location in Active Directory with Create Container Object rights (you create containers for each NIS map)	NA
Unix Account Import Wizard	Administrator rights (you are creating new accounts)	NA
Logging Options	Write permissions to the file system folder where you want to create the logs	NA
vasd daemon	The client computer object is expected to have read access to user and group attributes, which is the default.  In order for Authentication Services to update the host object operating system attributes automatically, set the following rights for "SELF" on the client computer object: <b>Write Operating System, Write operatingSystemHotfix</b> , and <b>Write operatingSystemServicePack</b> .	vasd must run as root
QAS/VAS PAM module	NA (updated by means of vasd)	Any local user
QAS/VAS NSS module vastool nss	NA (updated by means of vasd)	Any local user
vastool command-line tool	Depends on which vastool command is run	Any local user for most commands
vastool join vastool unjoin	computer creation or deletion permissions in the desired container	root
vastool configure vastool unconfigure	NA	root
vastool search vastool attrs	read permission for the desired objects (regular Active Directory user)	Any local user
vastool setattrs	write permissions for the desired object	Any local user
vastool cache	NA	Run as root if you want all tables including

Function	Active Directory Permissions	Local Client Permissions
		authcache
vastool create	permissions to create new users, groups, and computers as specified	Any local user; root needed to create a new local computer
vastool delete	permissions to delete existing users, groups, or computers as specified; permissions to remove the keytab entry for the host object created (root or write permissions in the directory and the file)	Any local user
vastool flush	The client computer object is expected to have read access to user and group attributes, which should be the default	root
vastool group add vastool group del	permission to modify group membership	Any local user
vastool group hasmember	read permission for the desired objects (regular Active Directory user)	Any local user
vastool info { site   domain   domain -n   forest-root   forest-root -dn   server   acl }	NA	Any local user
vastool info { id   domains   domains -dn   adsecurity   toconf }	read permission for the desired objects (regular Active Directory user)	Any local user
vastool isvas vastool inspect vastool license	NA	Any local user
vastool kinit vastool klist vastool kdestroy	local client needs permissions to modify the keytab specified, default is the computer object which is root.	Any local user
vastool ktutil	NA	root if you are using the default



Function	Active Directory Permissions	Local Client Permissions
		host.keytab file
vastool list (with -l option)	read permission for the desired objects (regular Active Directory user)	Any local user
vastool load	permissions to create users and groups in the desired container	Any local user
vastool merge	NA	root
vastool unmerge		
vastool passwd	Regular Active Directory user	Any local user
vastool passwd <AD user>	Active Directory user with password reset permission	Any local user
vastool schema list	Regular Active Directory user	Any local user
vastool schema detect		
vastool schema cache	Regular Active Directory user	root (to modify the local cache file)
vastool service list	Regular Active Directory user	Any local user
vastool service { create   delete }	Active Directory user with permission to create/delete service principals in desired container	NA
vastool smartcard	NA	root
vastool status	NA	root
vastool timesync	NA	root, if you only query the time from AD, you can run as any local user
vastool user { enable   disable }	modify permissions on the AD Object	Any local user
vastool user { checkaccess	NA	Any local user

Function	Active Directory Permissions	Local Client Permissions
checkconflict }		
vastool user checklogin	Access to Active Directory users password	Any local user

## Authentication Services Encryption Types

The following table details the encryption types used in Authentication Services.

**Table 7: Authentication Services: Encryption types**

Encryption Types	Specification	Active Directory Version	Authentication Services Version
<b>KERB_ENCTYPE_DES_CBC_CRC</b>			
CRC32	RFC 3961	All	All
<b>KERB_ENCTYPE_DES_CBC_MD5</b>			
RSA-MD5	RFC 3961	All	All
<b>KERB_ENCTYPE_RC4_HMAC_MD5</b>			
RC4-HMAC-MD5	RFC 4757	All	All
<b>KERB_ENCTYPE_AES128_CTS_HMAC_SHA1_96</b>			
HMAC-SHA1-96-AES128	RFC 3961	Windows® Server 2008 +	3.3.2+
<b>KERB_ENCTYPE_AES256_CTS_HMAC_SHA1_96</b>			
HMAC-SHA1-96-AES256	RFC 3961	Windows® Server 2008 +	3.3.2+

## Management Console for Unix Requirements

Quest recommends that you install One Identity Management Console for Unix®, a separate Quest product which provides a management console that is a powerful and easy-to-use tool that dramatically simplifies deployment of Authentication Services agents to your clients. The management console streamlines the overall management of your Unix, Linux®, and Mac OS X® hosts by enabling centralized management of local Unix users and groups and providing granular reports on key data and attributes.

Prior to installing Management Console for Unix®, ensure your system meets the minimum hardware and software requirements for your platform.

**Table 8: Management Console for Unix: Hardware and software requirements**

<b>Component</b>	<b>Requirements</b>
Supported Windows® Platforms	<p>Can be installed on 32-bit or 64-bit editions of the following configurations:</p> <ul style="list-style-type: none"><li>• Windows® XP SP2 (or later)</li><li>• Windows® Vista</li><li>• Windows® 7</li><li>• Windows® 8</li><li>• Windows® Server 2003 SP1 (or later)</li><li>• Windows® Server 2008</li><li>• Windows® Server 2008 R2</li><li>• Windows® Server 2012</li></ul> <p><b>i</b> <b>NOTE:</b> When running Management Console for Unix® on Windows® Server 2008 R2, functioning as a domain controller, the process must be elevated. As a best practice, Quest does not recommend that you install or run the Windows® components on Active Directory domain controllers. The recommended configuration is to install them on an administrative workstation.</p> <p><b>i</b> <b>NOTE:</b> The performance of some Active Directory searches may be better on:</p> <ul style="list-style-type: none"><li>• 64bit: Windows® Server 2003 64-bit and above</li><li>• 32bit: Windows® Server 2003 SP1 + hotfix* or Windows® 2003 SP2 (and above)</li></ul> <p>(*Click <a href="#">Microsoft Support</a> to read a Microsoft article entitled, "A hotfix is available that improves the performance of programs that query Active Directory for group memberships in Windows® Server 2003".</p> <p>To apply this hotfix, you must have Windows® Server 2003 Service Pack 1 (SP1) installed. <b>Note:</b> The x64-based versions of Windows® Server 2003 already include the fixes and features that are included in Windows® Server 2003 SP1. If the computer is running an x64-based version of Windows® Server 2003, you do not have to install SP1.</p>
Server Requirements	<p>You can install Management Console for Unix® on any platform that has 32-bit Sun® JRE (Java® Runtime Environment) 1.6.</p> <p><b>i</b> <b>NOTE:</b> Management Console for Unix® is not supported on AIX®.</p>

Component	Requirements
Managed Host Requirements	<p>Click <a href="#">here</a> to view a list of supported Unix, Linux®, and Mac OS X® platforms that the server can manage; that is, hosts you can add and profile from the management console.</p> <p><b>i</b> <b>NOTE:</b> To use Authentication Services with the management console on a Solaris® 10 Sparc, you must have Authentication Services 4.0.3.152 or greater.</p> <p><b>i</b> <b>NOTE:</b> To enable the Management Console for Unix® server to interact with the host, you must install both an SSH server (that is, sshd) and an SSH client on each managed host. Both OpenSSH 2.5 (and higher) and Tectia SSH 5.0 (and higher) are supported.</p>
Default memory requirement:	<p>1024 MB</p> <p><b>i</b> <b>NOTE:</b> See <i>Tune JVM Memory</i> in online help for information about changing the default memory allocation setting in the configuration file.</p>
Supported Web Browsers	<p>The management console officially supports the following web browsers:</p> <ul style="list-style-type: none"> <li>• Microsoft Internet Explorer 7, 8, 9, and 10</li> <li>• Mozilla Firefox 3 and greater</li> <li>• Apple Safari 4 (Mac OS X® only; Windows® not supported)</li> </ul> <p><b>i</b> <b>NOTE:</b> To use specific features such as the <b>SSH to Host</b> feature or the Policy Editors, you must install the Sun® JRE (Java® Runtime Environment) 1.6 browser plugin.</p> <p><b>i</b> <b>NOTE:</b> Quest recommends that you do not open two sessions of the management console in the same browser.</p> <p><b>i</b> <b>NOTE:</b> Quest recommends that set your screen resolution to a minimum of 1024 x 768 for the best results.</p>

## Network Requirements

Authentication Services must be able to communicate with Active Directory including domain controllers, global catalogs and DNS servers using Kerberos, LDAP and DNS protocols. The following table summarizes the network ports that must be open and their function.

**Table 9: Network ports**

<b>Port</b>	<b>Function</b>
389	Used for LDAP searches against Active Directory Domain Controllers. TCP is normally used, but UDP is used when detecting the Active Directory site membership.
3268	Used for LDAP searches against Active Directory Global Catalogs. TCP is always used when searching against the Global Catalog.
88	Used for Kerberos authentication and Kerberos service ticket requests against Active Directory Domain Controllers. TCP is used by default.
464	Used for changing and setting passwords against Active Directory using the Kerberos change password protocol. Authentication Services always uses TCP for password operations.
53	Used for DNS. Since Authentication Services uses DNS to locate domain controllers, DNS servers used by the Unix hosts must serve Active Directory DNS SRV records. Both UDP and TCP are used.
123	UDP only. Used for time-synchronization with Active Directory.
445	CIFS port used to enable the client to retrieve configured group policy.

**NOTE:** Authentication Services, by default, operates as a client, initiating connections. It does not require any firewall exceptions for incoming traffic.

## Installing and Configuring Authentication Services

To extend the authentication, authorization, and administration infrastructure of Active Directory to the rest of your enterprise, allowing Unix, Linux®, and Mac OS X® systems to act as full citizens within Active Directory, you must install and configure Authentication Services.

This section explains the steps you must take in detail:

1. Install Management Console for Unix®.
2. Install Authentication Services Windows® components.
3. Configure Active Directory for Authentication Services (one time, only).
4. Configure Unix Agent Components
  - a. Configure the management console for Active Directory.
  - b. Prepare the Unix hosts for Active Directory user access:
    - Add and profile a host.
    - Check the host for readiness to join Active Directory.
    - Install Authentication Services agent software packages on the host to allow Active Directory user access.
      - **NOTE:** For users to authenticate on Unix, Linux®, and Mac OS X® hosts with Active Directory credentials, your Unix hosts must have the Authentication Services agent installed.
  - c. Join the host to Active Directory.

### Install the Management Console

In preparing for your Authentication Services installation, Quest recommends that you install Management Console for Unix®. This provides a management console that is a powerful and easy-to-use tool that dramatically simplifies deployment, enables management of local Unix users and groups, provides granular reports on key data and

attributes, and streamlines the overall management of your Unix, Linux®, and Mac OS X® hosts.

You can install the management console on Windows®, Unix, or Mac OS X® computers. Each hosting platform prompts for similar information.

The following install files are located on the Authentication Services distribution media under `mcu | server`:

- `ManagementConsoleForUnix_unix_2_n_n.sh` - for Unix
- `ManagementConsoleForUnix_windows_2_n_n.exe` - for Windows®
- `ManagementConsoleForUnix_macos_2_n_n.dmg` - for Mac OS X®

where "n.n" indicates the product version number.

The *Management Console for Unix® Administrator's Guide* contains detailed instructions for installing the management console on all of these platforms. Use the following procedure to install the console on a supported Windows® platform from the Authentication Services 4.1 distribution media.

Of course, you can install Authentication Services without using Management Console for Unix®. You can find those instructions in the *Installing and Joining from the Unix Command Line* section of the *Authentication Services Installation Guide*, located in Control Center **Tools** view or in the docs directory of the installation media. However, for the purposes of the examples in this guide, it is assumed that you will install and configure Authentication Services Unix agent components by means of Management Console for Unix®.

## Installing and Configuring the Management Console

The easiest way to install and configure Authentication Services Unix agent components is by means of Management Console for Unix®.

- NOTE:** The procedures in this topic assume you do not have Management Console for Unix® already installed.

### **To install the management console on a supported Windows® platform**

1. Mount the Authentication Services 4.1 distribution media.

Autorun starts automatically.

- NOTE:** To start the Autorun installation wizard, you can also navigate to the root of the distribution media and double-click **autorun** Application file.

2. From the Authentication Services Autorun *Home* page, click the **Setup** tab.
3. From the *Setup* tab, click **Management Console for Unix®**.

The install wizard guides you through the rest of the setup dialogs:

- *Management Console for Unix® License Agreement*
  - *Configure TCP/IP Port*
  - *Completing the Management Console for Unix® installation*
4. On the *Complete* dialog, deselect the *Launch the Management Console* option and click **Finish** to exit the install wizard and return to the Authentication Services Autorun *Setup* tab.

Once you have installed Management Console for Unix®, you are ready to install or upgrade the Authentication Services Windows® components.

## Install Authentication Services Windows Components

Quest recommends that you install the Windows® components and configure Active Directory before you install the Unix components.

### Installing Authentication Services Windows Components

Install Authentication Services on each Windows® Workstation you plan to use to administer Unix data in Active Directory.

#### ***To install the Authentication Services Windows components***

1. From the Autorun *Setup* tab, click **Authentication Services** to launch the setup wizard.
2. At the *Software License Agreement* dialog, accept the terms of the End User License Agreement and click **Install**.

The Authentication Services Setup wizard installs all Authentication Services components by default.

To only install specific components, click the **Customize installation options** link. (For more information, see *Customize Installation Options* in the *Authentication Services Installation Guide*.)

3. Once the installation completes successfully, click **Finish** or **Launch Control Center**.



# Configure Active Directory for Authentication Services

To utilize full Active Directory functionality, when you install Authentication Services in your environment, Quest recommends that you prepare Active Directory to store the configuration settings that it uses. Authentication Services adds the Unix properties of Active Directory users and groups to Active Directory and allows you to map a Unix user to an Active Directory user. This is a one-time process that creates the Authentication Services application configuration in your forest.

- 1 **NOTE:** To use the *Authentication Services Active Directory Configuration Wizard*, you must have rights to create and delete all child objects in the Active Directory container.

If you do not configure Active Directory for Authentication Services, you can run your Authentication Services client agent in "Version 3 Compatibility Mode" which allows you to join a host to an Active Directory domain.

(For more information, see *Version 3 Compatibility Mode* in the *Authentication Services Installation Guide*.)

When running Authentication Services client agent in "Version 3 Compatibility Mode", you have the option in One Identity Management Console for Unix® to set the schema configuration to use Windows® 2003 R2. (See *Configure Windows® 2003 R2 Schema* in the management console online Help for details.) The Windows® 2003 R2 schema option extends the schema to support the direct look up of Unix identities in Active Directory domain servers.

You can also create the Authentication Services application configuration from the Unix command line, if you prefer. For more information, see *Creating the Application Configuration from the Unix Command Line* in the *Authentication Services Installation Guide*.

## Configuring Active Directory for Authentication Services

The first time you install Authentication Services in your environment, Quest recommends that you perform this one-time Active Directory configuration step to utilize full Authentication Services 4.1 functionality.

- 1 **NOTE:** If you do not configure Active Directory for Authentication Services, you can run your Authentication Services client agent in "Version 3 Compatibility Mode" which allows you to join a host to an Active Directory domain.

(For more information, see *Version 3 Compatibility Mode* in the *Authentication Services Installation Guide*.)

## To configure Active Directory for Authentication Services

1. At the Authentication Services Active Directory Configuration Wizard *Welcome* dialog, click **Next**.
2. At the *Connect to Active Directory* dialog:
  - a. Provide Active Directory login credentials for the wizard to use for this task:
    - Select **Use my current AD logon credentials** if you are a user with permission to create a container in Active Directory.
    - Select **Use different AD logon credentials** to specify the Active Directory credentials of another user, enter the User name and Password.
  - i** **NOTE:** The wizard does not save these credentials; it only uses them for this setup task.
  - b. Indicate how you want to connect to Active Directory:

Select whether to connect to an Active Directory Domain Controller or Quest Active Roles Server.
  - i** **NOTE:** If you have not installed the Quest Active Roles Server MMC Console on your computer, the *ActiveRoles Server* option is not available.
  - c. Optionally enter the Domain or domain controller and click **Next**.
3. At the *License Authentication Services* dialog, browse to select your license file and click **Next**.

Refer to [Licensing Authentication Services on page 9](#) for more information about licensing requirements.

- i** **NOTE:** You can add additional licenses later from the Authentication Services Control Center **Preferences Licensing** dialog.
4. At the *Configure Settings in Active Directory* dialog, accept the default location in which to store the configuration or browse to select the Active Directory location where you want to create the container and click **Setup**.
- i** **NOTE:** You must have rights to create and delete all child objects in the selected location. For more information on the structure and rights required see [Windows Permissions on page 11](#).
5. Once you have configured Active Directory for Authentication Services, click **Close**.

The Control Center opens. You are now ready to configure your Unix Agent Components.

(Refer to *Configure Unix Agent Components* in the Installation Guide for more information.)

# About Active Directory Configuration

The first time you install or upgrade the Authentication Services 4.1 Windows® components in your environment, Quest recommends that you configure Active Directory for Authentication Services to utilize full functionality. This is a one-time Active Directory configuration step that creates the application configuration in your forest. Authentication Services uses the information found in the application configuration to maintain consistency across the enterprise. Without the application configuration, store UNIX® attributes in the RFC2307 standard attributes to achieve the most functionality.

- ① **NOTE:** If you do not configure Active Directory for Authentication Services, you can run your client agent in "Version 3 Compatibility Mode" which allows you to join a host to an Active Directory domain.

(See *Version 3 Compatibility Mode* in the *Authentication Services Installation Guide* for details.)

The Authentication Services application configuration stores the following information in Active Directory:

- Application Licenses
- Settings controlling default values and behavior for Unix-enabled users and groups
- Schema configuration

The Unix agents use the Active Directory configuration to validate license information and determine schema mappings. Windows® management tools read this information to determine the schema mappings and the default values it uses when Unix-enabling new users and groups.

The Authentication Services application configuration information is stored inside a container object with the specific naming of: `cn={786E0064-A470-46B9-83FB-C7539C9FA27C}`. The default location for this container is `cn=Program Data,cn=Quest Software,cn=Authentication Services,dc=<your domain>`. This location is configurable.

There can only be one Active Directory configuration per forest. If Authentication Services finds multiple configurations, it uses the one created first as determined by reading the `whenCreated` attribute. The only time this would be a problem is if different groups are using different schema mappings for Unix attributes in Active Directory. In that case, standardize on one schema and use local override files to resolve conflicts. You can use the `Set-QasUnixUser` and `Set-QasUnixGroup` PowerShell commands to migrate Unix attributes from one schema configuration to another. Refer to the PowerShell help for more information.

The first time you run the Control Center, the *Authentication Services Active Directory Configuration Wizard* walks you through the setup.

- ① **NOTE:** You can also create the Authentication Services application configuration from the Unix command line, if you prefer.

(For more information, see *Creating the Application Configuration from the Unix Command Line* in the *Authentication Services Installation Guide*.)

You can modify the settings using the Authentication Services Control Center **Preferences**. To change Active Directory configuration settings, you must have rights to Create Child Object (container) and Write Attribute for *cn*, *displayName*, *description*, *showInAdvancedViewOnly* for the Active Directory configuration root container and all child objects.

In order for Unix clients to read the configuration, authenticated users must have rights to read *cn*, *displayName*, *description*, and *whenCreated* attributes for container objects in the application configuration. For most Active Directory configurations, this does not require any change.

This table summarizes the required rights:

**Table 10: Authentication Services: Required rights**

<b>Rights Required</b>	<b>For User</b>	<b>Object Class</b>	<b>Attributes</b>
Create Child Object	Authentication Services Administrators Only	Container	cn, displayName, description, showInAdvancedViewOnly
Write Attribute	Authentication Services Administrators Only	Container	
Read Attribute	Authenticated Users	Container	cn, displayName, description, whenCreated

At any time you can completely remove the Authentication Services application configuration using the `Remove-QasConfiguration` cmdlet. However, without the application configuration Authentication Services Active Directory-based management tools do not function.

## Join the Host to AD Without the Authentication Services Application Configuration

You can install the Authentication Services Agent on a Unix system and join it to Active Directory without installing Authentication Services on Windows® and setting up the Authentication Services Application Configuration.

The Authentication Services 4.x client-side agent required detection of a directory-based Application Configuration data object within the Active Directory forest in order to join the host computer to the Active Directory Domain. Authentication Services 4.0.2 removed this requirement for environments where directory-based User and/or Group identity information is not needed on the host Unix computer. These environments include full Mapped-User environments, GSS-API based authentication-only environments, or configurations where the Authentication Services agent will auto-generate posix attributes for Active Directory Users and Groups objects.

# Configure Unix Agent Components

The Control Center gives you access to the tools you need to perform Unix identity management tasks.

- 1 **NOTE:** If the Control Center is not currently open, you can either double-click the desktop icon or access it by means of the **Start** menu.

Follow the steps outlined on the Control Center *Home* page to get your Unix agents ready.

- 1 **NOTE:** Of course, you can install Authentication Services without using Management Console for Unix®. You can find those instructions in the *Installing and Joining from the Unix Command Line* section of the *Authentication Services Installation Guide*, located in Control Center **Tools** view or in the *docs* directory of the installation media. However, for the purposes of the examples in this guide, it is assumed that you will install and configure the Authentication Services Unix agent components by means of Management Console for Unix®.

## To start the mangement console

1. From the Control Center, click the **Management Console** link in the left-navigation pane.

## Setup Management Console for Unix

The first time you launch the mangement console, the *Setup Management Console for Unix®* wizard leads you through some post-installation configuration steps. Choose one of these options:

- **Skip the Active Directory configuration, I'll do that later from the console**

This option allows you to use the core features of the console and limits access to the console to the default *supervisor* account only.

- **Walk me through the configuration steps for using AD user accounts for logon to the console**

When you configure the console for Active Directory, you unlock additional Active Directory features.

- 1 **NOTE:** To use the mangement console with Authentication Services, or to use roles to allow access to the console using Active Directory, you must configure the console for Active Directory log on.

Choose an option and click **Next**.

- 1 **NOTE:** If you choose the "Skip" option, the *Identify Console* dialog displays. (For more information, see [Identify Console on page 31.](#))

If you choose the "Walk" option, it allows you to configure the console for Active Directory log on. (See *Configure the Console for Active Directory* on the management console online Help for details.)

- 1 **NOTE:** If you can not configure the console for Active Directory during your initial installation of Management Console for Unix®, choose the "Skip" option. After the installation, log into the console as **supervisor** and configure the console for Active Directory from *System Settings*. (See *Active Directory Configuration* in the management console online Help for more information.)

## Configure the Console for Active Directory Logon

The *Setup Management Console for Unix®* wizard opens the *Configure Console for Active Directory Logon* dialog when you choose the *Walk me through the configuration steps for using AD user accounts for logon to the console* option.

### To configure the management console for Active Directory logon

1. On the *Configure console for Active Directory Logon* dialog, enter a valid Active Directory domain in the forest, in the form **example.com**.
2. Enter the credentials for an Active Directory account that has log-on rights.  
Enter a sAMAccountName, which uses the default domain or a User Principal Name, as in **username@domain**. The wizard uses these credentials to configure the management console for use with Active Directory.
  - 1 **NOTE:** This is a read-only operation; no changes are made to Active Directory.
3. Click **Connect to Active Directory**.
4. When you see the message that indicates the console connected to Active Directory successfully, click **Next**.

The *Set up console access by role* dialog opens.

## Setup Console Access by Role

After you *Configure Console for Active Directory Logon*, the setup wizard displays the *Set up console access by role* dialog.

### To add Active Directory users or groups to the console access list

1. On the *Set up console access by role* dialog, click **Add...** to specify the Active Directory users and groups that you want to have access to the features available in Management Console for Unix®.

2. On the *Select Users and Groups* dialog, use the search controls to find and select Active Directory user(s) or group(s). Select one or more objects from the list and click **OK**.

The management console adds the selected object(s) to the list on the *Set up console access by role* dialog.

By default the management console assigns users to *All Roles*, which gives those accounts permissions to access and perform all tasks within the console. (See *Console Roles and Permissions System Settings* in the management console online Help for details.)

3. Click in the *Roles* cell to activate a drop-down menu from which you can choose a role for the user account.

**NOTE:** During the initial set up, you can only assign one role per user. Add additional roles to a user in *System Settings*. (See *Add (or Remove) Role Members* in the management console online Help for details.)

4. Click **Next** to save your selections.

The *Identify Console* dialog opens.

## Identify Console

The setup wizard displays the *Identify Console* dialog during the post-installation configuration steps. The Control Center uses this information to identify this management console. Hosts configured for automatic profiling and/or automatic QAS Agent Status also use this information to contact the management console server.

### To identify the management console

1. On the *Identify Console* dialog, modify the information about this management console, if necessary, and click **Next** to open the *Set supervisor password* dialog.

**NOTE:** You can modify these settings from **Settings | System settings | General | Console Information**. (See *Console Information Settings* in the consoles online Help for details.)

## Set Supervisor Password Dialog

The **supervisor** account is the default account for accessing all features of the management console. The **supervisor** is a member of all roles and no permissions can be removed from **supervisor**. However, the **supervisor** does not have Active Directory credentials and therefore is blocked from performing *Active Directory* tasks.

### **To set the supervisor password**

1. On the *Set supervisor password* dialog, enter a password for the **supervisor** account and click **Next**.

The *Summary* dialog displays.

2. To log on using the console supervisor account, use "**supervisor**" as the user name.

**NOTE:** The **supervisor** is the only account that has rights to change the **supervisor** account password in *System Settings*. (See *Reset the Supervisor Password* in the management console online Help for details.)

## Summary Dialog

### **To complete the Management Console for Unix® Setup wizard**

1. On the *Summary* dialog, click **Finish**.

The Management Console for Unix® log-in screen opens.

## Management Console for Unix Log On Page

Whenever you launch the management console, you must enter an authorized account to proceed. The Management Console for Unix® features that are available depend on the account with which you log in.

To use the core version to manage local Unix users and groups and to access the management console system settings, you must use the **supervisor** account (that is, you must log on with the **supervisor** user name). However, to use the Active Directory features of Management Console for Unix®, you must log on with an Active Directory account that has been granted access to the management console. That is, defined during the post-installation configuration. (See *Setup Console Access by Role* in online Help for details.) To add additional accounts to this access list, see *Add (or Remove) Role Members* in online Help for details.

### **To log on to the management console**

1. Enter the user name and password and click **Sign In**.

Enter:

- the **supervisor** account name
- a sAMAccountName, which uses the default domain
- a User Principal Name in the form, **username@domain**

The management console opens and displays the user name you specified in the upper right-hand corner of the screen.

2. To log on using a different account, click the authenticated user's login name and



click **Sign Out**. Then sign back on using a different account.

The Log-on page redisplay, allowing you to enter a different account.

## Prepare Unix Hosts

The management console provides a central management and reporting console for local Unix users and groups.

Using Management Console for Unix® with Authentication Services not only allows you to centrally manage your hosts, but it allows you to do these additional features for managing Unix systems with Active Directory:

- Ability to remotely install Authentication Services agents, join systems to Active Directory, and implement AD-based authentication for Unix, Linux®, and Mac OS X® systems.
- Ability to manage access control on a single host system or across multiple hosts.
- Ability to create reports about Unix-enabled users and groups in Active Directory.
- Ability to create access control reports that show which user is permitted to log into which Unix host.

Whether you have the core version or are using the management console with Authentication Services, once you have successfully installed Management Console for Unix®, you must first add your hosts to the console, and then profile them to gather system information. Once a host is added and profiled you can then manage users and groups on the hosts and run reports.

## Add Host(s) to the Management Console

In order to manage a Unix host from the management console, you must first add the host. Go to the *Hosts* tab of the management console to either manually enter hosts or import them from a file.

### **To add host(s) to the management console**

1. Click the **Add Hosts** tool bar button to display the *Add Hosts* dialog.
2. To manually add one or more hosts, enter the FQDN, IP address, or short name of a host you want to add to the management console and either click the **Add** button or press **Enter**.

Once added, the *Host* column displays the value you enter. The management console uses that value to connect to the host. You can rename the host if it has not been profiled using the **Rename Host** command on the *Host* panel of the tool bar. After a host is profiled the only way to change what is displayed in the *Host* column is to remove the host from the console and re-add it. For example, if you add a host by its IP address, the IP address displays in the *Host* column (as well as in the *IP Address* column); to change what is displayed in the *Host* column, you must use the **Remove**

**from console** tool bar button to remove the host from the console; then use the **Add Hosts** button to re-add the client by its host name. If you had profiled the host before removing it, you will have to re-profile it after re-adding it.

3. To add hosts from a *known\_hosts* file, click the **Import** button.
  - a. On the *Import hosts from file* dialog, browse to select a .txt file containing a list of hosts to import.

Once imported, the host addresses display in the *Add Host* dialog list.

**NOTE:** The valid format for an import file is:

- .txt file - contains the *IP address* or *DNS name*, one per line
- *known\_hosts* file - contains *address algorithm hostKey* (separated by a space), one entry per line

(See *Known\_hosts File Format* in the online help for more information about the supported *known\_hosts* file format.)

4. Once you have a list of one or more hosts to add, if you do not wish to profile the host(s) at this time, clear the **Profile hosts after adding** option.

**NOTE:** If you add more hosts to the list than selected in the *Rows to show* dropdown menu in the *View* panel of the tool bar, this option is disabled.

5. If you do not clear the **Profile hosts after adding** option on the *Add Hosts* dialog, when you click **OK**, the *Profile Host* dialog prompts you to enter the user credentials to access the host(s). (Refer to [Profile Host\(s\) on page 34](#) which walks you through the host profile steps.)
6. If you clear the **Profile hosts after adding** option on the *Add Hosts* dialog, when you click **OK**, the *Add Hosts* dialog closes and control returns to the management console.

The management console lists hosts that were successfully added on the *All Hosts* view by the FQDN, IP address, or short name of the hosts you entered on the *Add Hosts* dialog.

## Profile Host(s)

Profiling imports information about the host, including local users and groups, into the management console. It is a read-only operation and no changes are made to the host during the profiling operation. Profiling does not require elevated privileges.

### To profile host(s)

1. Select one or more hosts on the *All Hosts* view and click **Profile** from the *Prepare* panel of the tool bar, or open the **Profile** menu and choose **Profile**.
2. In the *Profile Host* dialog, enter user credentials to access the host(s).

If you selected multiple hosts, you are asked if you want to use the same credentials for all the hosts (default) or enter different credentials for each host.

3. If you selected multiple hosts and the **Use the same credentials for all selected hosts** option, enter the following information:

- a. Enter the user name and password to log onto the selected host(s).
- b. Optionally enter the SSH port to use. It uses port 22 by default.
- c. To save the credentials entered for the host, select the **Save my credentials on the server** option.

Once saved, the management console uses these credentials to access the host during this and subsequent sessions.

**NOTE:** If you do not save a password to the server, the user name and password fields will be blank the first time the management console needs credentials to complete a task on the host during a log on session. Once entered, the management console caches the user name and password and reuses these credentials during the current session, and pre-populates the user name and password fields in subsequent tasks during the current log on session.

If you choose to save a host's credentials to the server, the management console encrypts the credentials and saves them in the Java® keystore. Saved user names and passwords persist across log on sessions, and when needed, the management console pre-populates the user name and password fields each subsequent time it needs them to perform a task. (For more information, see *Caching Unix Host Credentials* in the online Help.)

4. If you selected multiple hosts and the **Enter different credentials for each selected host** option, a grid displays allowing you to enter different credentials and specify different settings for each host.

- a. To enter different credentials, place your cursor in the **Username** and **Password** columns to the right of the *Host* column and enter the credentials to use.
- b. To change the SSH port for a host, place your cursor in the **SSH Port** column and enter the new SSH port number.
- c. To save the credentials entered for a host, select the check box in the **Save** column.

5. If you want the management console to prompt you to review and accept new SSH keys for the selected hosts (that do not have previously cached SSH keys), clear the **Automatically accept SSH keys** option before you click **OK**.

**NOTE:** When profiling one or more hosts, you must accept at least one key before continuing. The management console only profiles hosts with accepted keys.

By default the **Automatically accept SSH keys** option is checked. This enables the management console to automatically accept SSH key for all selected hosts that do not have a previously cached key. When it accepts the key, the console adds it to the accepted-keys cache on the Management Console for Unix® server. If you clear the *Automatically accept SSH keys* option, when the management console encounters a modified key, it opens the *Validate Host SSH Keys* dialog, allowing you to manually

accept keys that are encountered. Once you have manually verified the fingerprint, the console adds the SSH host key(s) to the accepted-keys cache.

**NOTE:** Once you profile a host, all future tasks that involve an SSH connection will verify the SSH host key against the accepted-keys cache. When profiling, if the console encounters a modified key, the profile task prompts you to accept new/changed key(s). When performing any other SSH action, other than profile, if the console encounters a different SSH key, the task will fail. To update the accepted-keys cache for the host, you can either profile/reprofile the host, accept the new key, and try the task again. Or, you can import a new SSH host key from the host's properties or from the *All Hosts* view. (See *Import SSH Host Key* or *Managing SSH Host Keys* in the online help for more information.)

A progress bar displays in the *Task Progress* pane. The final status of the task displays, including any failures or advisories encountered.

## Profile Automatically


To keep the Management Console for Unix® database up to date with accurate information about users, groups, and Quest products, you can configure the management console to profile hosts automatically.

**BEST PRACTICE:** Configure newly added hosts for auto-profiling before you perform any other actions so that the management console dynamically updates user and group information. (See *UID or GID Conflicts* in online Help.)

Configuring a host for auto-profiling sets up a cron job on the client that runs every five minutes. If it detects changes on the host, it triggers a profile operation.

The cron job detects changes to the following:

- local users, groups, or shells
- installed Authentication Services or Privilege Manager software
- Authentication Services access control lists
- Authentication Services mapped user information
- Privilege Manager configuration
- Authentication Services configuration
- Privilege Manager licenses

The cron job also sends a heartbeat every day. This updates the *Last profiled* date displayed on the host properties. If the *Last profiled* date is more than 24 hours old, the host icon changes to  to indicate no heartbeat.

### To configure automatic profiling

1. Select one or more hosts on the *All Hosts* view, open the **Profile** menu from the *Prepare* panel of the tool bar, and choose **Profile Automatically...**

**NOTE:** The **Profile Automatically** option is only available for multiple hosts if all hosts are in the same 'Auto-profile' state; that is, they all have 'Auto-profile' turned on, or they all have 'Auto-profile' turned off.

2. In the *Profile Automatically* dialog, select the **Profile the host automatically** option.

3. Choose the user account you want to use for profiling, either:

- **Create a user service account on the host**

When you choose to create the user service account on the host, if it does not already exist, the management console, does the following:

- Creates "questusr", the user service account, and a corresponding "questgrp" group on the host that the management console uses for automatic profiling.
- Adds *questusr* as an implicit member of *questgrp*.

-OR-

- **Use an existing user account (user must exist on all selected hosts)**

(Click **Select** to browse for a user.)

4. Click **OK** on the *Profile Automatically* dialog.

Whether you choose to create the user service account or use an existing user account, the management console,

- Adds the user account (the "questusr" or your existing user account) to the cron.allow file, if necessary. For example, the console takes no action if the cron.allow file does not already exist, but there is a cron.deny file:

cron.allow	cron.deny	Console's action	Resultant User Access
NO	NO	Creates cron.allow and adds root and <i>questusr</i> to it	Both root and <i>questusr</i> have access.
NO	YES	No action	All users have access except those in cron.deny; <i>questusr</i> has access unless explicitly denied.
YES	NO	Adds <i>questusr</i> to cron.allow	Users in cron.allow have access.
YES	YES	Adds <i>questusr</i> to cron.allow	Users in cron.allow have access unless in cron.deny.

- Adds the auto-profile SSH key to *questusr*'s `authorized_keys`, `/var/opt/quest/home/questusr/.ssh/authorized_keys`.
- Verifies the service account user can login to the host.

**NOTE:** If you receive an error message saying you could not log in with the user service account, please refer to *Service Account Login Fails* in online Help to troubleshooting this issue.

The *questusr* account is a non-privileged account that does not require root-level permissions. This account is used by the console to gather information about existing user and groups in a read-only fashion, however, the management console does not use *questusr* account to make changes to any configuration files.

If *questusr* is inadvertently deleted from the console, the console turns 'Auto-profiling' off.

#### **To recreate the "questusr" account**

- Re-profile the host.
  - Reconfigure the host for automatic profiling.
- On the *Log on to Host* dialog, enter the user credentials to access the selected host(s) and click **OK**.

**NOTE:** This task requires elevated credentials.

If you select multiple hosts, you are asked if you want to use the same credentials for all the hosts (default) or enter different credentials for each host.

- If you selected multiple hosts and the **Use the same credentials for all selected hosts** option, enter your credentials to log on to access the selected host(s) and click **OK**.
- If you selected multiple hosts and the **Enter different credentials for each selected host** option, it displays a grid which allows you to enter different credentials for each host listed. Place your cursor in a cell in the grid to activate it and enter the data.

#### **To disable automatic profiling**

- Select one or more hosts on the *All Hosts* view and choose **Profile Automatically...**
- Clear the **Profile the host automatically** option and click **OK**.
- On the *Log on to Host* dialog, enter the user credentials to access the selected host(s) and click **OK**.

When you disable auto-profiling for a host, the management console,

- leaves the "questusr" and the corresponding "questgrp" accounts on the host, if they were previously created.
- leaves *questusr* as an implicit member of *questgrp*, if it exists.
- removes the user account (the "questusr" or your existing user account) from the

cron.allow file.

4. removes the auto-profile SSH key from that user's `authorized_keys` file.

## Check Readiness

Once you install the software on your remote hosts, the management console allows you to perform a series of tests to verify that a host meets the minimum requirements to join an Active Directory domain. Running the readiness checks does NOT require elevated privileges.

- NOTE:** This task is only available when you are logged on as **supervisor** or an Active Directory account in the *Manage Hosts* role. (See *Roles and Permissions System Settings* in the management console online Help for more information.)

### To check host(s) for Active Directory Readiness

1. Select one or more hosts on the *All Hosts* view of the *Hosts* tab, open the **Check** menu from the *Prepare* panel of the tool bar, and choose **Check for AD Readiness**.
2. In the *Check AD Readiness* view, enter the Active Directory domain to use for the readiness check.
3. Enter Active Directory user credentials, and click **OK**.
4. On the *Log on to Host* dialog, enter the user credentials to access the selected host(s) and click **OK**.

If you selected multiple hosts, it asks whether you want to use the same credentials for all the hosts (default) or enter different credentials for each host.

- a. If you selected multiple hosts and the **Use the same credentials for all selected hosts** option, enter your credentials to log on to access the selected host(s) and click **OK**.
- b. If you selected multiple hosts and the **Enter different credentials for each selected host** option, it displays a grid which allows you to enter different credentials for each host listed. Place your cursor in a cell in the grid to activate it and enter the data.

A progress bar displays in the *Task Progress* pane on the *All Hosts* page. The final status of the task displays, including any failures or advisories encountered. To see the AD Readiness check results, open the host's property page and select the **Readiness Check Results** tab.

## Install Software on Host(s)

Once you have successfully added and profiled one or more hosts, and checked them for AD Readiness, you can remotely deploy software products to them from the management console.

## To install Authentication Services software on host(s)

1. Select one or more profiled hosts on the *All Hosts* view and click the **Install Software** tool bar button.

**NOTE:** The **Install Software** tool bar menu is enabled when you select hosts that are profiled.

The tool bar button will not be active if

- You have not selected any hosts.
- You have selected multiple hosts with different states (added, profiled, or joined).

2. On the *Install Software* dialog, select the Authentication Services software products you want to install and click **OK**.
  - **Authentication Services Agent (Required)** - Select to allow Active Directory users access to selected host. Authentication Services provides centralized user and authentication management. It uses Kerberos and LDAP to provide secure data transport and an authentication framework that works with Microsoft Active Directory. Components include: `vasd`, `nss_vas`, `pam_vas`, and `vastool`.
  - **Authentication Services for Group Policy (Required)** - Select to install the Group Policy component which provides Active Directory Group Policy support for Unix, Linux®, and Mac OS X® platforms.
  - **Authentication Services for NIS** - Select to install the NIS Proxy component which provides the NIS compatibility features for Authentication Services. `vasyp` is a NIS daemon that acts as a `ypserv` replacement on each host.
  - **Authentication Services for LDAP** - Select to install the LDAP Proxy component which provides a way for applications that use LDAP bind to authenticate users to Active Directory without using secure LDAP (LDAPS). Instead of sending LDAP traffic directly to Active Directory domain controllers, you can configure applications to send plain text LDAP traffic to `vasldapd` by means of the loopback interface. `vasldapd` proxies these requests to Active Directory using Kerberos as the security mechanism.
  - **Dynamic DNS Updater** - Select to install the Dynamic DNS Updater component which provides a way to dynamically update host records in DNS and can be triggered by DHCP updates.
  - **Defender PAM Module** - Select to install the Defender authentication components for PAM based Unix/Linux® systems. Includes PAM module, documentation and utilities to appropriately configure the PAM subsystem for Active Directory/Defender OTP authentication.

**NOTE:** You must install the Authentication Services Agent and the Group Policy packages.



- 1 **NOTE:** If you do not see all of these software packages, verify the path to the software packages is correctly set in *System Settings*. (Refer to *Set the Authentication Services Client Software Location on the Server* in the management console online help for details.)
3. On the *Log on to Host* dialog, enter the user credentials to access the selected host(s) and click **OK**.

1 **NOTE:** This task requires elevated credentials.

If you selected multiple hosts, it asks whether you want to use the same credentials for all the hosts (default) or enter different credentials for each host.

- a. If you selected multiple hosts and the **Use the same credentials for all selected hosts** option, enter your credentials to log on to access the selected host(s) and click **OK**.
- b. If you selected multiple hosts and the **Enter different credentials for each selected host** option, it displays a grid which allows you to enter different credentials for each host listed. Place your cursor in a cell in the grid to activate it and enter the data.

## Join Host(s) to Active Directory

In order to manage access to a host using Authentication Services for Active Directory, you must join the host to an Active Directory domain. Joining a host to a domain creates a computer account for that host. Once you have deployed and installed the Authentication Services Agent software on a host, use the **Join to Active Directory** command on the *All Hosts* view's *Join* menu to join the host to an Active Directory domain.

### To join host(s) to Active Directory


1. Select one or more hosts from the list on the *All Hosts* view, open the *Join or Configure* menu tool bar button and choose **Join to Active Directory**.


1 **NOTE:** The **Join to Active Directory** tool bar menu is enabled when you select hosts that have the Authentication Services Agent installed and are not joined Active Directory.

The tool bar button will not be active if

  - You have not selected any hosts.
  - You have selected multiple hosts with different states (joined, not joined).
2. On the *Join Host to Active Directory* dialog, enter the following information to define how and where you want to join the host to Active Directory:
  - a. Select the Active Directory domain to use for the join operation or enter the FQDN of the Active Directory domain.

Use the same domain you entered when you performed the *Check for AD Readiness*.

- b. Optionally enter a name for the computer account for the host.  
Leave this field blank to generate a name based on the host's DNS name.
  - c. Click the  button to locate and select a container in which to create the host computer account.
  - d. Enter the optional join commands to use.  
See *Optional Join Commands* in the management console online Help for a list of commands available.
  - e. Enter the user name and password to log onto Active Directory.  
The user account you enter must have elevated privileges in Active Directory with rights to create a computer account for the host.
3. On the *Log on to Host* dialog, enter the user credentials to access the selected host(s) and click **OK**.

 **NOTE:** This task requires elevated credentials. The management console pre-populates this information.

The *Task Progress* pane on the *All Hosts* view displays a progress bar and the final status of the tasks, including any failures or advisories encountered.

## Getting Started with Authentication Services

Once you have successfully installed Authentication Services you will want to learn how to do some basic system administration tasks using the Control Center and Management Console for Unix®.

### Getting Acquainted with the Control Center

Authentication Services consists of plugins, extensions, security modules and utilities spread across nearly every operating system imaginable. The Control Center pulls those parts together and provides a single place for you to find the information and resources you need.

Control Center installs on Windows® and is a great starting place for new users to get comfortable with some of Authentication Services' capabilities.

You can launch the Control Center from the *Start* menu or by double-clicking the desktop icon, or by double-clicking the Control Center application file from %SystemDrive% : \Program Files (x86)\Quest Software\Authentication Services.

**Table 11: Control Center: Navigation links**

Control Center Section	Description
Home	The "Welcome" page provides information about how to use the Control Center tools and features.
Management Console	You can run the One Identity Management Console for Unix® management console within the Control Center or you can run it separately in a supported web browser. The management console is a separate install on Windows®, Unix, Linux®, or Mac OS X® that you can launch from the ISO.

Control Center Section	Description
	Typically you install one management console per environment to avoid redundancy. Quest does not advise managing a Unix host by more than one management console in order to avoid redundancy and inconsistencies in stored information. If you manage the same Unix host by more than one management console, you should always re-profile that host to minimize inconsistencies that may occur between instances of the management consoles.
Group Policy	The Control Center provides the ability to search on Active Directory Group Policy Objects that have Unix and Mac OS X <sup>®</sup> settings defined. Also provides links to edit these GPO's and run reports that show the detailed settings of the Group Policy Objects.
Tools	The Control Center provides links to additional tools and resources available with Authentication Services – a great starting place for anyone new to the product.
Preferences	The Control Center allows you to centrally manage the default values generated by the various Authentication Services management tools, including the ADUC snap-in, the PowerShell cmdlets, and the Unix command-Line tools.
Log into remote host	The Control Center provides a simple SSH client (built on PuTTY) for remote access to Unix systems – simplifies new installs from having to find and install a separate PuTTY client.

To run Control Center you must be logged in as a domain user. To make changes to global settings you must have rights in Active Directory to create, delete, and modify objects in the Authentication Services configuration area of Active Directory.

## Management Console

Management Console for Unix<sup>®</sup> allows you to centrally manage Authentication Services agents running on Unix, Linux<sup>®</sup> and Mac OS X<sup>®</sup> systems.

With the management console you can:

- Remotely deploy the Authentication Services agent software.
- Manage local user and group accounts.
- Configure account mappings from local users to Active Directory accounts.
- Report on a variety of security and host access related information.

You can install the management console on supported Unix, Linux<sup>®</sup>, and Mac OS X<sup>®</sup> platforms. Once installed, you can access it from a browser using default port of 9443 or from the Control Center.

# Group Policy

Microsoft Group Policy provides excellent policy-based configuration management tools for Windows®. Group Policy enables you to manage Unix resources in much the same way. Group Policy allows you to consolidate configuration management tasks by using the Group Policy functionality of Microsoft Windows® Server to manage Unix operating systems and Unix application settings.

To open Group Policy, click **Group Policy** on the left navigation panel of the Authentication Services Control Center.

## Filter Options

### *To filter the list of GPOs*

1. Expand the **Filter Options** section.
2. Enter all or part of a name to filter the list of GPOs.
3. Open the *Domain* drop down menu to choose a domain.
4. Select the **Unix Settings** or **Mac Settings** *List Only* options to further filter the GPO list.

If you select both options, only the GPOs configured for both Unix and Mac OS X® display.

## Edit GPO

### *To edit a group policy object*

1. From the Group Policy window, select a GPO in the list and click **Edit GPO...** from the *Actions* menu.

The *Group Policy Object Editor* opens for the selected GPO.

**NOTE:** For more information about the group policies, refer to the *Authentication Services Administrator Guide*, located in Control Center **Tools** view in the *Documentation* section, or in the docs directory of the installation media.

## Settings Report

A settings report displays all of the Authentication Services Group Policy object settings that apply to Unix or Mac OS X® systems.

### **To generate a Unix settings report**

1. From the Group Policy window, select a GPO Name and click **Settings Report...** from the *Actions* menu.

An HTML report of the currently configured Unix and Mac OS X<sup>®</sup> settings displays.

**NOTE:** You can select multiple GPOs to run several reports simultaneously.

## Show Files

### **To open the Windows Explorer**

1. From the Group Policy window, select a GPO in the list and click **Show Files...** from the *Actions* menu.

The Windows<sup>®</sup> Explorer opens and displays the Group Policy Templates for the selected GPO.

## Launch GPMC

**NOTE:** Microsoft does not support Group Policy Management Console (GPMC) on 64-bit platforms of Windows<sup>®</sup>; thus, Quest does not support managing group policies through the Control Center on Windows<sup>®</sup> 2003 64-bit and Windows<sup>®</sup> 2003 R2 64-bit, XP 64-bit platforms. (See [Group Policy Management Console with Service Pack 1](#) for more information.)

### **To launch the Group Policy Management Console**

1. From the Group Policy window, click **Launch GPMC...** from the *Actions* menu.

## Tools

The **Tools** link on the Control Center gives you access to:

- **Authentication Services**

Direct links to installed applications and tools related to Authentication Services.

- **Additional Quest Products**

Direct links to other Quest product plugins.

**NOTE:** The **Additional Quest Products** link is only available if you have installed other Quest products such as Defender, Authentication Services for Smart Cards, or Quest Active Roles Server.

- **Other Tools**

Direct links to tools related to Authentication Services.

**NOTE:** The **Other Tools** link is only available if you have installed the Group Policy Management Console.

- **Documentation**

Direct links to Authentication Services documentation.

## Preferences

Authentication Services stores certain preferences and settings in Active Directory. This information is used by Authentication Services clients and management tools so that behavior remains consistent across all platforms and tools. The *Preferences* window allows you to configure these settings and preferences.

## Licensing

The *Licensing* section of the *Preferences* window in the Control Center displays a list of installed license files. You can add and remove license files at any time. The license files are stored in Active Directory and Authentication Services Unix hosts automatically download and apply new license files from Active Directory.

(Refer to [Licensing Authentication Services on page 9](#) for more information about licensing requirements.)

## Add Licenses Using the Control Center

### *To add licenses using the Control Center*

1. Click the **Preferences** navigation button on the left panel of the Control Center.
2. Expand the **Licensing** section.

The list box displays all licenses currently installed in Active Directory.

3. Click **Add a license...** from the *Actions* menu.
4. Browse for the license file and click **Open**.

The license appears in the list box.

**NOTE:** Unix hosts check for new licenses when the host is joined to the domain or every 24 hours by default. This can be changed by modifying the `configuration-refresh-interval` setting in `vas.conf`.

5. To remove a license, select it and click **Remove license**.
6. To restore a removed license, click **Undo Remove**.

# Display Specifiers

Display specifiers are Active Directory objects which provide information about how other objects in the directory display in client applications.

## Register Display Specifiers

Because it is common to use the *Find* dialog in ADUC to manage users and groups, Quest recommends that you register display specifiers with Active Directory. Registering display specifiers provides the following benefits:

- Unix Account properties appear in *ADUC Find* dialog results.
- Unix Personality objects are displayed correctly in ADUC. This only applies if the Unix Personality schema has been installed.

**NOTE:** You must have Enterprise Administrator rights to register display specifiers.

You can inspect exactly what changes are made during the display specifier registration process by viewing the *DsReg.vbs* script found in the Authentication Services installation directory. You can use this script to unregister display specifiers at a later time.

### To register display specifiers with Active Directory

1. From a Windows® management workstation with Authentication Services installed, navigate to **Start | Quest Software | Authentication Services | Control Center**.
2. Click **Preferences** on the left navigation panel.
3. Expand the **Display Specifiers** section.

**NOTE:** The **Register Display Specifiers** link displays only when display specifiers are not already registered with Active Directory. If the display specifiers are registered, Control Center does not display the link.

4. Click the **Register Display Specifiers** link to register display specifiers with Active Directory.

While it is registering the display specifiers with Active Directory, Control Center displays a progress indicator. When the process is complete Control Center indicates that display specifiers are registered.

Alternatively, you can register display specifiers from the command line, as follows:

- a. Log in as a user with Enterprise Administrator rights.
- b. Open a command prompt, navigate to the Authentication Services installation directory, and run this command:

```
DsReg.vbs /add
```



- 1 **NOTE:** To register Quest Active Roles Server display specifiers with Quest Active Roles Server, navigate to the installed location for Authentication Services and run the following command:

```
DsReg.vbs /add /provider:EDMS
```

You must install the Quest Active Roles Server management package locally or DsReg.vbs returns an "Invalid Syntax" error.

To see all the DsReg.vbs options, run the following command:

```
DsReg.vbs /help
```

## Unregistering Display Specifiers

- 1 **NOTE:** You must have Enterprise Administrator rights to unregister display specifiers.

### **To unregister display specifiers in Active Directory**

1. Log in as a user with Enterprise Administrator rights.
2. Open a command prompt and navigate to the Authentication Services installation directory.
3. Run the DsReg.vbs script with the /remove option:

```
DsReg.vbs /remove
```

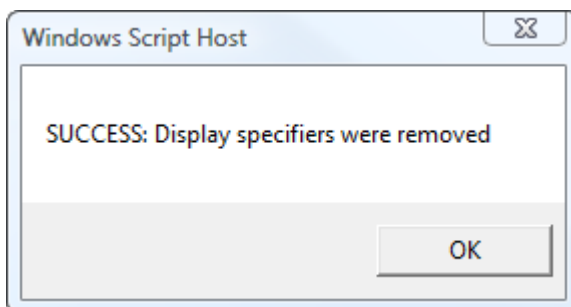
- 1 **NOTE:** To unregister display specifiers with Quest Active Roles Server, run the following command:

```
DsReg.vbs /remove /provider:EDMS
```

To see all the DsReg.vbs options, run the following command:

```
DsReg.vbs /help
```

A message similar to the following indicates that the display specifiers were removed successfully.



## Global Unix Options

The Global Unix Options section displays the currently configured options for Unix-enabling users and groups.

Click **Modify Global Unix Options...** to change these settings.

**NOTE:** Authentication Services uses the Global Unix Options when enabling users and groups for Unix log in.

**Table 12: Unix User Defaults**

Option	Description
Require unique user login names	Select to require a unique user login name attribute within the forest.
Require unique UID on users	Select to require a unique user's Unix ID (UID) number within the forest.
Minimum UID Number	Enter a minimum value for the Unix User ID (UID) number. Typically you set this to a value higher than the highest UID among local Unix users to avoid conflicts with users in Active Directory and local user accounts.
Maximum UID Number	Enter a maximum value for the Unix User ID (UID) number. Typically you would not change this value unless you have a legacy Unix platform that does not support the full 32-bit integer range for UID number.
Primary GID Number	Enter the default value for the Primary GID number when Unix-enabling a user.
Set primary GID to UID	Select to set the primary GID number to the User ID number.
Default Comments (GECOS)	Enter any text in this box.
Login Shell	Enter the default value for the login shell used when Unix-enabling a user.
Home Directory	Enter the default prefix used when generating the home directory attribute when Unix-enabling a user. The default value is <code>/home/</code> ; use a different value if your Unix user home directories are stored in another location on the file system. Authentication Services uses the user's effective Unix name when

Option	Description
	generating the full home directory path.
Use lowercase user name for home directory	Select to use a lower-case representation of the user's effective Unix name when generating the full home directory path as a user is Unix-enabled.

**Table 13: Unix Group Defaults**

Option	Description
Require unique Group Names	Select to require a unique Unix group name attribute within the forest.
Require unique GID Number	Select to require a unique Unix Group ID (GID) attribute within the forest.
Minimum GID Number	Enter the minimum value for the Unix Group ID (GID). Typically this is set to a value higher than the highest GID among local Unix groups to avoid conflicts with groups in Active Directory and local group accounts.
Maximum GID Number	Enter the maximum value for the Unix Group ID (GID). Typically you would not change this value unless you have a legacy Unix platform that does not support the full 32-bit integer range for GID.

These options control the algorithms used to generate unique user and group IDs.

**Table 14: Unique IDs**

Option	Description
Object GUID Hash	An ID generated from a hash of the user or group object GUID attribute. This is a fast way to generate an ID which is usually unique. If the generated value conflicts with an existing value, the ID is re-generated by searching the forest.
Samba Algorithm	An ID generated from the SID of the domain and the RID of the user or group object. This method works well when there are few domains in the forest. If the generated value conflicts with an existing value, the ID is re-generated by searching the forest.
Legacy Search Algorithm	An ID generated by searching for existing ID values in the forest. This method generates an ID that is not currently in use.

Modifications you make to these Global Unix Options take effect after you restart the Microsoft Management Console (MMC).

- 1 **BEST PRACTICE:** It is a best practice to either use the generated default IDs or set the ID manually. Mixing the two methods can lead to ID conflicts.

## Logging Options


The *Logging Options* section allows you to enable logging for all Authentication Services Windows® components. This setting only applies to the local computer. Logging can be helpful when trying to troubleshoot a particular problem. Because logging causes components to run slower and use more disk space, you should set the **Log Level** to *disabled* when you are finished troubleshooting.

### Enable Debug Logging on Windows

**To enable debug logging for all Authentication Services Windows components**

1. Open Control Center and click the **Preferences** navigation button on the left panel.
2. Expand the **Logging Options** section.
3. Open the *Log level* drop-down menu and set the log level to **Debug**.

Debug generates the most log output. Higher levels generate less output. You can set the **Log level** to *Disabled* to disable logging.

4. Click  to specify a folder location where you want to write the log files.

Authentication Services Windows® components log information into the specified log folder the next time they are loaded. Each component logs to a text file named after the DLL or EXE that generates the log message.

## Custom Unix Attributes

The Unix schema attributes are fully customizable in Authentication Services. The Custom Unix Attributes section allows you to see which LDAP attributes are mapped to Unix attributes. You can modify this mapping to enable Authentication Services to work with any schema configuration. To customize the mapping, you select a schema template or specify your own custom attributes. A schema template is a pre-defined set of common mappings which adhere to common schema extensions for storing Unix data in Active Directory. Authentication Services supports the following schema templates if the required schema is installed:

**Table 15: Unix schema attributes**

Schema Template	Description
Schemaless	A template that encodes Unix attribute data in an existing multi-valued attribute.
Windows® R2	A template that uses attributes from the Windows® 2003 R2 schema extension.
Services for Unix 2.0	A template that uses attributes from the SFU 2.0 schema extension.
Services for Unix 3.0	A template that uses attributes from the SFU 3.0 schema extension.

**1 BEST PRACTICE:** Use a schema designed for storing Unix data in Active Directory whenever possible. Schemas designed for storing Unix data in Active Directory include: Windows® 2003 R2, SFU 2, and SFU 3. Only use "schemaless" or custom mappings if it is impossible to make schema extensions in your environment.

**1 NOTE:** If you are running Authentication Services without an application configuration in your forest and your domain supports Windows® 2003 R2, you can enable Authentication Services to use the Windows® 2003 R2 schema. However, please note, some functionality provided by the Authentication Services application configuration will be unavailable. (For more information, see *Configure Windows 2003 R2 Schema* in the management console online Help.)

## Active Directory Schema Extensions

Authentication Services stores Unix identity and login information in Active Directory. Quest designed Authentication Services to provide support for the following standard Active Directory schema extensions:

**Table 16: Active Directory schema extensions**

Schema Extension	Description
Windows® 2003 R2 Schema	This schema extension is provided by Microsoft and adds support for the PosixAccount auxiliary class, used to store Unix attributes on user and group objects.
Services for Unix 2.0	Microsoft provides this schema extension with the Services for Unix 2.0 set of tools. It adds custom attributes to user and group objects, used to store Unix account information.
Services for Unix 3.0	Microsoft provides this schema extension with the Services for Unix 3.0 set of tools. It adds custom attributes to user and group objects, used to store Unix account information.

It is possible to customize the schema setup to work with any schema configuration with Authentication Services. No schema extensions are necessary with the new "schemaless" storage feature. When you configure Authentication Services for the first time, Authentication Services attempts to auto-detect the best schema configuration for your environment. The schema configuration is a global application setting that applies to all Authentication Services management tools and Unix agents. You can change the detected settings at any time using Control Center.

## Configure a Custom Schema Mapping

If you do not have a schema that supports Unix data storage in Active Directory, you can configure Authentication Services to use existing, unused attributes of users and groups to store Unix information in Active Directory.

### *To configure a custom schema mapping*

1. Open the Control Center and click the **Preferences** on the left navigation panel.
2. Expand the **Custom Unix Attributes** and click **Customize....**
3. Type the LDAP display names of the attributes that you want to use for Unix data. All attributes must be string-type attributes except **User ID Number**, **User Primary Group ID** and **Group ID Number** which may be integers. If an attribute does not exist or is of the wrong type, the border will turn red indicating that the LDAP attribute is invalid.

**NOTE:** When customizing the schema mapping, ensure that the attributes used for **User ID Number** and **Group ID Number** are indexed and replicated to the global catalog.

For more information, see [Active Directory Optimization on page 54](#).

4. Click **OK** to validate and save the specified mappings in Active Directory.

## Active Directory Optimization

Indexing certain attributes used by the Authentication Services Unix agent can have a dramatic effect on the performance and scalability of your Unix and Active Directory integration project. The **Custom Unix Attributes** panel in the **Preferences** section of Control Center displays a warning if the Active Directory configuration is not optimized according to best practices.

Quest recommends that you index the following attributes in Active Directory.

- User UID Number
- User Unix Name
- Group GID Number
- Group Unix Name

**NOTE:** LDAP display names vary depending on your Unix attribute mappings.

It is also a best practice to add all Unix identity attributes to the global catalog. This reduces the number of Active Directory lookups that need to be performed by Authentication Services Unix agents.

Click the **Optimize Schema** link to run a script that updates these attributes as necessary.

**NOTE:** The **Optimize Schema** option is only available if you have not optimized the Unix schema attributes defined for use in Active Directory.

This operation requires administrative rights in Active Directory. If you do not have the necessary rights to optimize your schema, it generates a schema optimization script. You can send the script to an Active Directory administrator who has rights to make the necessary changes.

All schema optimizations are reversible and no schema extensions are applied in the process.

## Learning the Basics

The topics in this section help you learn how to do some basic system administration tasks using the Control Center and Management Console for Unix®.

**NOTE:** The exercises in this section assume that you have successfully installed Authentication Services and Management Console for Unix® and have added a host to the console and joined it to Active Directory. (See [Prepare Unix Hosts on page 33.](#))

This section shows you how to create the following test user and group accounts used in various examples:

- A local group name called "**localgroup**"
- A local user object called "**localuser**"
- An Active Directory group object called "**UNIXusers**"
- An Active Directory user object called "**ADuser**"

Quest recommends that you work through the topics in this section in order as a self-directed "test drive" of some of the key product features. You will learn how easy it is to manage your users and groups from the management console.

## Add a Local Group

You can use the management console to remotely add a local group to the host.

**NOTE:** This topic instructs you to set up a local group by the name of "localgroup" referred to by other examples in this guide.

### To add a local group to the host

1. From the Management Console for Unix® *Host* tab's *All Hosts* view, double-click a host name to open its properties.
2. Select the **Groups** tab and click **Add Group**.
3. In the *Add New Group* dialog, enter **localgroup** as a local group name in the *Group Name* box and click **Add Group**.
4. In the *Log on to Host* dialog, enter your credentials and click **OK**.

**NOTE:** This task requires elevated credentials. Credential information is entered by default from the cache.

The new local group account is added to the system and management console.

## Add Local User Account

**NOTE:** This topic instructs you to set up a local user by the name of "localuser" referred to by other examples in this guide.

### To add a local user account

1. From the *All Hosts* view, double-click a host name to open its properties.
2. Select the **Users** tab from the host properties and click **Add User**.
3. In the *Add New User* dialog,
  - a. Enter **localuser** as a new local user name in the *Name* box.
  - b. Click **Select Group** browse button next to the *GID* box, to find and select the **local group** account you set up in [Add a Local Group on page 55](#).  
You can also use the navigation buttons at the bottom of the list to find and select a group.
  - c. Click the **Select Shell** browse button to find and select a local login shell.
  - d. Enter and re-enter a password of your choice and click **Add User** to add this new local user.
4. On the *Log on to Host* dialog, enter your credentials to log onto the host and click **OK**.

**NOTE:** This task requires elevated credentials. The management console enters this information by default from the cache.

The new local user account is added to the system and management console.

At this point the new local user is valid for local authentication with the password you just set.



# Add an Active Directory Group Account

Authentication Services provides additional tools to help you manage different aspects of migrating Unix hosts into an Active Directory environment. Links to these tools are available from **Tools** in the Control Center.

**NOTE:** This topic instructs you to set up an Active Directory group by the name of "UNIXusers" referred to by other examples in this guide.

## To create a new group in Active Directory

1. In the Control Center, navigate to **Tools** and click the link for **Authentication Services Extensions for Active Directory Users and Computers**.

The *Active Directory Users and Computers* Console opens.

**NOTE:**

- Windows® Vista/Windows® 7: You must have the Remote Server Administration Tools installed and enabled.
- Windows® 2003/Windows® XP: You must have the Windows® 2003 Server Administration Tools installed.

2. Expand the *domain* folder and select the **Users** folder.
3. Click the "New Group" icon button.  
The *New Object - Group* dialog opens.
4. Enter **UNIXusers** in the *Group name* box and click **OK**.

# Add an Active Directory User Account

**NOTE:** The following procedure instructs you to use ADUC (Active Directory Users and Computers) to set up an Active Directory user by the name of "ADuser" referred to by other examples in this guide.

## To create an Active Directory user account

1. In the *Active Directory Users and Computers* console, select the **Users** folder and click the "New User" icon button.

2. On the *New Object - User* dialog, enter information to define a new user named **ADuser** and click **Next**.

The *New Object - User* wizard guides you through the user setup process.

3. When you enter a password, deselect the *User must change password at next logon* option, before you click **Next**.
4. Click **Finish**.
5. Close *Active Directory Users and Computers* and return to the management console.

# Change the Default Unix Attributes

You can modify the Unix attributes that are generated by default when users are Unix-enabled. To change the Login Shell you must have rights to create and delete child objects in the Authentication Services application configuration in Active Directory.

## To change the default Unix attributes

1. Click the **Preferences** navigation button on the left panel of the Control Center.
2. Expand **Global Unix Options**.  
The window displays the current settings for Unix-enabling users, groups and the method used for creating unique IDs.
3. Click **Modify Global Unix Options...** on the right side of the window.  
The *Modify Global Options* dialog opens.
4. Change the *Login Shell* to **/bin/bash** and click **OK**.  
The defaults are saved to Active Directory.

**NOTE:** Now, when you Unix-enable a user from Active Directory Users and Computers, PowerShell, or the Unix command line, the login shell defaults to `/bin/bash`. You can customize the other Unix defaults similarly.

# Active Directory Account Administration

The topics that follow show you how to perform Active Directory account administration from Management Console for Unix® for hosts that are joined to Active Directory.


## Enable Local User for AD Authentication


This feature, also known as user mapping, allows you to associate an Active Directory user account with a local Unix user. Allowing a local user to log into a Unix host using Active Directory credentials enables that user to take advantage of the benefits of Active Directory security and access control.

### To enable a local user for Active Directory authentication

1. From the management console *Host* tab's *All Hosts* view, double-click a host to open its properties.
2. Select the **Users** tab and double-click the **localuser** account to open its properties.

**NOTE:** To set up this local user account, see [Add Local User Account on page 56](#).

3. On the *AD Logon* tab, select the **Require an AD Password to logon to Host** option, and click **Select**.
4. On the *Select AD User* dialog, click the  Search button to populate the list of Active Directory users, select the **ADuser** account, and click **OK**.



 **NOTE:** To set up this Active Directory user, see [Add an Active Directory User Account on page 57](#).


5. On the **localuser**'s properties, click **OK**.
6. On the *Log on to Host* dialog, verify your credentials to log onto the host and click **OK**.

You have now "mapped" a local user to an Active Directory user and the management console indicates that the local user account requires an Active Directory password to log onto the Host in the *AD User* column.

You can also map multiple Unix users to use a single Active Directory account using the *Require AD Logon* pane on the *All Local Users* tab.

### **To assign (or "map") a Unix user to an Active Directory user**

1. From the *All Local Users* tab, select one or more local Unix users.
2. In the *Require AD Logon* pane, click the  Search button to populate the list of Active Directory users.  
(Click the  Directory button to search in a specific folder.)
3. Select an Active Directory user and click the **Require AD Logon to Host** button at the bottom of the *Require AD Logon* pane.
4. On the *Log on to Host* dialog, verify your credentials to log onto the host and click **OK**.

 **NOTE:** This task requires elevated credentials.

The Active Directory user assigned to the selected local Unix user(s) displays in the *AD User* column of the *All Local Users* tab.

## **Test the Mapped User Login**

Once you have "mapped" a local user to an Active Directory user, you can log into the local Unix host using your local user name and the Active Directory password of the Active Directory user to whom you are "mapped".

### **To test the mapped user login**

1. From the Control Center, under "Login to remote host", enter:
  - the Unix host name in the *Host name* box
  - the local user name, **localuser**, in the *User name* boxand click **Login** to log onto the Unix host with your local user account.
2. If the *PuTTY Security Alert* dialog opens, click **Yes** to accept the new key.
3. Enter the password for *ADuser*, the Active Directory user account you mapped to *localuser*, when you selected the **Require an AD Password to logon to Host** option on the user's properties.
4. At the command line prompt, enter **id** to view the Unix account information.
5. Enter `/opt/quest/bin/vastool klist` to see the credentials of the Active Directory user account.
6. Enter **exit** to close the command shell.

You just learned how to manage local users and groups from Management Console for Unix® by mapping a local user account to an Active Directory user account. You tested this by logging into the Unix host with your local user name and the password for the Active Directory user account to whom you are "mapped".

## **Unix-Enable an Active Directory Group**

### **To Unix-enable an Active Directory group**

1. On the management console's *Active Directory* tab, open the *Find* box drop-down menu and choose **Groups**.
2. Enter a group name, such as **UNIX**, in the *Search by name* box and press **Enter**.
3. Double-click the group name, such as **UNIXusers**, to open its properties.


**NOTE:** To set up this Active Directory user account, see [Add an Active Directory Group Account on page 57](#).

4. On the *Unix Account* tab, select the **Unix-enabled** option and click **OK**.

## **Unix-Enable an Active Directory User**

### **To Unix-enable an Active Directory user**

1. On the management console's *Active Directory* tab, open the *Find* box drop-down menu and choose **Users**.

2. Click  to the *Search by name* box to search for all Active Directory users. Or, enter a portion of your *ADuser* log on name in the *Search by name* box and press **Enter**.
3. Double-click **ADuser**, the Active Directory user name, to open its properties.
4. On the *Unix Account* tab, select the **Unix-enabled** option.  
It populates the properties with default Unix attribute values.
5. Make other modifications to these settings, if necessary, and click **OK** to Unix-enable the user.

**NOTE:** There are additional settings that you can set using PowerShell which allows you to validate entries for the GECOS, Home Directory, and Login Shell attributes. Refer to [Use Authentication Services PowerShell on page 74](#) to learn more about that.

Once enabled for Unix, you can log on to the host with that Active Directory user's log on name and password.

## Test the Active Directory User Login

Now that you have Unix-enabled an Active Directory user, you can log into a local Unix host using your Active Directory user name and password.

### To test the Active Directory login

1. From the Control Center, under "Login to remote host", enter:
  - the Unix host name in the *Host name* box
  - the Active Directory user name, such as **ADuser**, in the *User name* boxand click **Login** to log onto the Unix host with your Active Directory user account.
2. Enter the password for the Active Directory user account.
3. At the command line prompt, enter **id** to view the Unix account information.
4. After a successful log in, verify that the user obtained a Kerberos ticket by entering:

```
/opt/quest/bin/vastool klist
```

The `vastool klist` command lists the Kerberos tickets stored in a user's credentials cache. This proves the local user is using the Active Directory user credentials.

5. Enter **exit** to close the command shell.

You just learned how to manage Active Directory users and groups from Management Console for Unix® by Unix-enabling an Active Directory group and user account. You tested this out by logging into the Unix host with your Active Directory user name and password. Optionally, you can expand on this tutorial by creating and Unix enabling additional Active Directory users and groups and by testing different Active Directory settings such as account disabled and password expired.

# Run Reports

You can run various reports that capture key information about the Unix hosts you manage from the management console and the Active Directory domains joined to these hosts from the *Reports* view on the *Reporting* tab.

**NOTE:** The Active Directory reports are only available when you are logged on as an Active Directory account in the *Manage Hosts* role.

## To run reports

1. Ensure the hosts for which you want to create reports have been recently profiled.

Reports only generate data gathered from the clients during a *Profile* procedure. Profiling imports information about the host, including local users and groups.

**NOTE:** You can configure the management console to profile hosts automatically. (For more information, see [Profile Automatically on page 36.](#))

2. From the management console, click the **Reporting** tab.
3. From the *Reports* view, expand the report group names to view the available reports, if necessary.

- **Host Reports**

Unix host information gathered during the profiling process

- **User Reports**

Local and Active Directory user information

- **Group Reports**


Local and Active Directory group information

- **Access & Privileges Reports**

User access information

- **License Usage Reports**

Product licensing information.

4. Use one of the following methods to select a report:
  - Double-click a report name in the list (such as the **Unix Host Profiles** report).
  - Right-click a report name and select **Run report**.
  - Click the report icon  next to a report.

The selected report name opens a new tab on the *Reports* view which describes the report and provides some report parameters you can select or clear to add or exclude details on the report.

5. Optionally clear parameters to exclude information from the report.

6. To create a report, either
  - Click **Preview** to see a sample of the report in a browser.
  - Open the **Export** drop-down menu and select the format you want to use for the report: **PDF** or **CSV** (if available).

**NOTE:** If the CSV report does not open, you may need to reset your internet options. (See *CSV or PDF Reports Do Not Open* in online help for details.)

By default, the management console creates reports in the application data directory:

- On Windows® XP/2003 Server:  

```
%SystemDrive%\Documents and Settings\All Users\Application Data\Quest Software\Management Console for Unix\reports
```
- On Windows® 2008 Server/Vista/7:  

```
%SystemDrive%\ProgramData\Quest Software\Management Console for Unix\reports
```
- On Unix/Mac OS X®:  

```
/var/opt/quest/mcu/reports
```

**NOTE:** You may need to reconfigure your browser preferences to allow you to save the report in a specific folder.

It launches a new browser or application page and displays the report in the selected format.

**NOTE:** When generating multiple reports simultaneously or generating a single report that contains a large amount of data, Quest recommends that you increase the JVM memory. (See *Tune JVM Memory* in the online help for details.)

## Reports

The management console provides comprehensive reporting which includes reports that can help you plan your deployment, consolidate Unix identity, secure your hosts and troubleshoot your identity infrastructure. The following tables list the reports that are available in Management Console for Unix®.

**NOTE:** Report availability depends on several factors:

- **User Log-on Credentials:** While some reports are available when you are logged in as *supervisor*, there are some reports that are only available when you are logged on as an Active Directory user. (See *Active Directory Configuration* in online Help for details.)
- **Roles and Permissions:** Reports are hidden if they are not applicable to the user's console role. (See *Console Roles and Permissions System Settings* in online Help for details.) For example, you must have an activated policy server to activate the sudo-related reports.

## Host Reports

Table 17: Host reports

Report	Description
Authentication Services Readiness	<p>Provides a snapshot of the readiness of each host to join Active Directory. This report is best used for planning and monitoring migration projects. The basic report includes the following information:</p> <ul style="list-style-type: none"><li>• Total number of hosts</li><li>• Total number, percentage and names of the hosts ready to join</li><li>• Total number, percentage and names of the hosts ready to join with advisories</li><li>• Total number, percentage and names of the hosts not ready to join</li><li>• Total number of hosts not checked for AD readiness</li></ul> <p>Use the following report parameters to define details to include in the report.</p> <ul style="list-style-type: none"><li>• Joined to AD</li><li>• Ready to Join AD</li><li>• Ready to Join AD with Warnings</li><li>• Not Ready to Join AD</li><li>• Not Checked for Readiness</li></ul> <p><b>NOTE:</b> This report is available when you are logged on as the <b>supervisor</b> or an Active Directory account in the <i>Manage Hosts</i> role.</p>
Privilege Manager Readiness	<p>Provides a snapshot of the readiness of each host to join a policy group. The basic report includes the following information:</p> <ul style="list-style-type: none"><li>• Total number of hosts</li><li>• Total number, percentage and names of the hosts ready to join</li><li>• Total number, percentage and names of the hosts not ready to join</li><li>• Total number of hosts not checked for readiness</li></ul> <p>Use the following report parameters to define details to include in the report.</p> <ul style="list-style-type: none"><li>• Joined to a policy group</li><li>• Ready to join a policy group</li><li>• Ready to join a policy group with warnings</li><li>• Not ready to join a policy group</li><li>• Not checked for readiness</li></ul>



Report	Description
	<p><b>NOTE:</b> This report is available when you are logged on as the <b>supervisor</b> or an Active Directory account in the <i>Manage Sudo Policy</i> role or the <i>Audit Sudo Policy</i> role.</p>
Unix Computers in AD	<p>Lists all Unix computers in Active Directory in the requested scope. By default, this report is created using the default domain as the base container. Browse to search Active Directory to locate and select a different base container to begin the search.</p> <p><b>NOTE:</b> This report is available when you are logged on as an Active Directory account in the <i>Manage Hosts</i> role.</p>
Unix Host Profiles	<p>Summarizes information gathered during the profiling process of each managed host. This report includes the following information:</p> <ul style="list-style-type: none"> <li>• Total number of hosts included in the report</li> <li>• Host Name, IP Address, OS, Hardware</li> <li>• Sudo version number</li> </ul> <p>Use the following report parameters to define details to include for each host.</p> <ul style="list-style-type: none"> <li>• Authentication Services Properties</li> <li>• Privilege Manager Properties</li> <li>• Local Users</li> <li>• Local Groups</li> <li>• Host SSH Keys</li> <li>• Installed Quest Software</li> </ul> <p><b>NOTE:</b> This report is available when you are logged on as the <b>supervisor</b> or an Active Directory account in the <i>Manage Hosts</i> role.</p>

## User Reports

**Table 18: User reports**

Report	Description
AD User Conflicts	<p>Returns all users with Unix User ID numbers (UID numbers) assigned to other Unix-enabled user accounts.</p> <p>By default, it creates this report using the default domain as the base container. Browse to search Active Directory to locate and select a different base container to begin the search.</p>

Report	Description
Local Unix User Conflicts	<p data-bbox="408 271 1347 338"><b>i</b> <b>NOTE:</b> This report is available when you are logged on as an Active Directory account in the <i>Manage Hosts</i> role.</p> <p data-bbox="389 371 1394 501">Identifies local user accounts that would conflict with a specified user name and UID on other hosts. You can use this report for planning user consolidation across your hosts. This report includes the following information:</p> <ul data-bbox="440 528 1385 640" style="list-style-type: none"> <li data-bbox="440 528 1353 562">• Host Name, DNS Name or IP Address where a conflict would occur</li> <li data-bbox="440 573 1385 640">• User Name, UID Number, Primary GID Number, Comment (GECOS), Home Directory and Login Shell for each host where conflicts exist</li> </ul> <p data-bbox="389 663 1315 730">Use the following report parameters to define the user name and UID number that would cause a conflict with existing local user accounts:</p> <ul data-bbox="440 752 667 831" style="list-style-type: none"> <li data-bbox="440 752 647 786">• User Name is</li> <li data-bbox="440 797 667 831">• UID Number is</li> </ul> <p data-bbox="408 853 1378 927"><b>i</b> <b>NOTE:</b> This report is available when you are logged on as the <b>supervisor</b> or an Active Directory account in the <i>Manage Hosts</i> role.</p>
Local Unix Users	<p data-bbox="389 965 1362 1021">Lists all users on all hosts or lists the hosts where a specific user account exists in <code>/etc/passwd</code>. This report includes the following information:</p> <ul data-bbox="440 1043 1385 1155" style="list-style-type: none"> <li data-bbox="440 1043 1262 1077">• Host Name, DNS Name or IP Address where the user exists</li> <li data-bbox="440 1088 1385 1155">• User Name, UID Number, Primary GID Number, Comment (GECOS), Home Directory, and Login Shell for each host where the user exists</li> </ul> <p data-bbox="389 1178 1305 1245">If you do not define a specific user, it includes all local users on each profiled host in the report.</p> <p data-bbox="389 1267 1219 1301">To locate a specific user, use the following report parameters:</p> <ul data-bbox="440 1323 842 1592" style="list-style-type: none"> <li data-bbox="440 1323 735 1357">• User Name contains</li> <li data-bbox="440 1368 667 1402">• UID Number is</li> <li data-bbox="440 1413 783 1447">• Primary GID Number is</li> <li data-bbox="440 1458 842 1491">• Comment (GECOS) contains</li> <li data-bbox="440 1503 799 1536">• Home Directory contains</li> <li data-bbox="440 1547 735 1592">• Login Shell contains</li> </ul> <p data-bbox="408 1615 1385 1715"><b>i</b> <b>NOTE:</b> When you specify multiple report parameters, it uses the AND expression; therefore, ALL of the selected parameters must be met in order to locate the user account.</p>

Report	Description
Local Unix Users with AD Logon	<p data-bbox="408 271 1382 338"><b>i</b> <b>NOTE:</b> This report is available when you are logged on as the <i>supervisor</i> or an Active Directory account in the <i>Manage Hosts</i> role.</p> <p data-bbox="389 371 1382 472">Identifies the local user accounts that are required to use Active Directory credentials to log onto the Unix hosts. This report includes the following information for hosts that are joined to an Active Directory domain:</p> <ul data-bbox="440 495 1382 719" style="list-style-type: none"> <li data-bbox="440 495 1382 562">• Host Name, DNS Name or IP Address of hosts where users exist that are required to log on using their AD credentials</li> <li data-bbox="440 573 1382 640">• User Name, UID Number, Primary GID Number and Comment (GECOS) of local user account</li> <li data-bbox="440 651 1382 719">• The SAM account Name of the Active Directory account that the local user account must use to log on</li> </ul> <p data-bbox="408 752 1382 819"><b>i</b> <b>NOTE:</b> This report only includes hosts joined to an Active Directory domain with a Authentication Services 4.x agent.</p> <p data-bbox="408 853 1382 987"><b>i</b> <b>NOTE:</b> This report is only available when the host has Authentication Services 4.x or later installed and is joined to Active Directory. You must be logged in with an Active Directory account in the <i>Manage Hosts</i> role.</p>
Master /etc/passwd List	<p data-bbox="389 1021 1382 1122">Provides a consolidated list of all user accounts from all hosts, excluding any local users marked as system users. This report includes the following information:</p> <ul data-bbox="440 1144 743 1458" style="list-style-type: none"> <li data-bbox="440 1144 608 1173">• Username</li> <li data-bbox="440 1189 687 1218">• Empty password</li> <li data-bbox="440 1234 520 1263">• UID</li> <li data-bbox="440 1279 520 1308">• GID</li> <li data-bbox="440 1323 560 1352">• GECOS</li> <li data-bbox="440 1368 743 1397">• Home directory path</li> <li data-bbox="440 1413 663 1442">• Account's shell</li> </ul> <p data-bbox="389 1480 1382 1615">You can consolidate the list of user accounts by matching values for accounts across multiple hosts. Accounts found with matching values are listed as a single local account. This list is best used for migrating local users to Active Directory.</p> <p data-bbox="389 1626 1382 1693">Indicate how you want to match user accounts by selecting the value parameters that you want to match:</p> <ul data-bbox="440 1715 608 1798" style="list-style-type: none"> <li data-bbox="440 1715 608 1744">• Username</li> <li data-bbox="440 1760 520 1798">• UID</li> </ul>

Report	Description
	<ul style="list-style-type: none"> <li>• GID</li> <li>• GECOS</li> <li>• Home Directory</li> <li>• Shell</li> </ul> <p>Optionally, you can include the host name for the accounts, as well:</p> <ul style="list-style-type: none"> <li>• Include the host name for accounts</li> </ul> <p><b>i</b> <b>NOTE:</b> If you select the <b>Include the host name for accounts</b> option, the management console adds a column to the <code>Master_etc_passwdList.csv</code> file to identify the host for each user account. Quest provides the <i>Host</i> column information to help you resolve the entries in the file. However, before you import the <code>.csv</code> file into the <i>Unix Account Import Wizard</i>, you must remove the <i>Host</i> column.</p> <p>You can easily migrate local users to Active Directory by exporting the <i>Master /etc/passwd List</i> report, then importing it into the <i>Unix Account Import Wizard</i>, accessible from the Authentication ServicesControl Center's <i>Tools</i> link. The <i>Unix Account Import Wizard</i> is a versatile tool that helps migrate Unix account information to Active Directory. It is especially well suited to small, one-shot import tasks such as importing all the local user accounts from a specific Unix host. The <i>Unix Account Import Wizard</i> can import Unix data as new user and group objects or use the data to Unix-enable existing users and groups.</p> <p><b>i</b> <b>NOTE:</b> This report is available when you are logged on as the <b>supervisor</b> or an Active Directory account in the <i>Manage Hosts</i> role.</p>
Unix-Enabled AD Users	<p>Lists all Active Directory users that have Unix user attributes.</p> <p><b>i</b> <b>NOTE:</b></p> <ul style="list-style-type: none"> <li>• A User object is considered to be 'Unix-enabled' if it has values for the UID Number, Primary GID Number, Home Directory and Login Shell.</li> <li>• If Login Shell is <code>/bin/false</code>, the user is considered to be disabled for Unix or Linux® logon.</li> <li>• Account Disabled indicates whether the Active Directory User account is enabled or disabled.</li> </ul> <p>By default, it creates this report using the default domain as the base container. Browse to search Active Directory to locate and select a different base container to begin the search.</p>

Report	Description
	<p><b>i</b> <b>NOTE:</b> This report is only available if you have configured the management console to recognize Active Directory objects (see <i>Configuring the Console to Recognize Unix Attributes in AD</i> in online help), and you are logged on as an Active Directory account in the <i>Manage Hosts</i> role.</p>

## Group Reports

**Table 19: Group Reports**

Report	Description
AD Group Conflicts	<p>Lists all Active Directory groups with Unix Group ID (GID) numbers assigned to other Unix-enabled groups.</p> <p>By default, it creates this report using the default domain as the base container. Browse to search Active Directory to locate and select the base container to begin the search.</p> <p><b>i</b> <b>NOTE:</b> This report is available when you are logged on as an Active Directory account in the <i>Manage Hosts</i> role.</p>
Local Unix Groups	<p>Identifies the hosts where a specific group exists in <code>/etc/group</code>. This report includes the following information:</p> <ul style="list-style-type: none"> <li>• Host Name, DNS Name or IP Address where the group exists</li> <li>• Group Name, GID Number, and members for each host where the group exists</li> </ul> <p>If you do not specify a group, it includes all local groups on each profiled host in the report.</p> <p>To locate a specific group, use the following report parameters:</p> <ul style="list-style-type: none"> <li>• Group Name contains</li> <li>• GID Number is</li> <li>• Member contains</li> <li>• Include all group members in report</li> </ul> <p><b>i</b> <b>NOTE:</b> The <i>Member contains</i> field accepts multiple entries separated by a comma. Spaces are taken literally in the search. For example, entering:</p> <ul style="list-style-type: none"> <li>• <b>adm, user</b> searches for members whose name contains 'adm' or 'user'</li> <li>• <b>adm,user</b> searches for members whose name contains 'adm' or 'user'.</li> </ul>

Report	Description
	<p><b>i</b> <b>NOTE:</b> When you specify multiple report parameters (for example, <i>Group Name contains</i>, <i>GID Number is</i>, and <i>Member contains</i>), it uses the AND expression; therefore, ALL of the selected parameters must be met in order to locate a group.</p> <p>In addition, it includes all of the group members in the report by default, but you can clear the <b>Include all group members in report</b> option.</p> <p><b>i</b> <b>NOTE:</b> This report is available when you are logged on as the <b>supervisor</b> or an Active Directory account in the <i>Manage Hosts</i> role.</p>
Unix-Enabled AD Groups	<p>Lists all Active Directory groups that have Unix group attributes.</p> <p><b>i</b> <b>NOTE:</b> A Group object is considered 'Unix-enabled' if it has a value for the GID Number.</p> <p>By default, it creates this report using the default domain as the base container. Browse to search Active Directory to locate and select a different base container to begin the search.</p> <p><b>i</b> <b>NOTE:</b> This report is only available if you have configured the management console to recognize Active Directory objects (see <i>Configuring the Console to Recognize Unix Attributes in AD</i> in online help), and you are logged on as an Active Directory account in the <i>Manage Hosts</i> role.</p>

## Access & Privileges Reports

**i** **NOTE:** The Access & Privileges reports do not report on users and groups from a NIS domain.

**Table 20: Access & Privileges Reports**

Report	Description
Access & Privileges by Host	<p>Identifies all users with log-on access to hosts and the commands the users can run on the hosts. This report includes the following information:</p> <ul style="list-style-type: none"> <li>• Total number of users that can log on to the host</li> <li>• The users that can log on to the host</li> <li>• The commands users can run on the host</li> <li>• The runas aliases for which the user can run commands on the host</li> <li>• The commands the runas alias can run on the host</li> </ul> <p><b>Browse</b> to select a host.</p>

Report	Description
Access & Privileges by User	<p>Optionally, select the <b>Show detailed report</b> option.</p> <p><b>i</b> <b>NOTE:</b> This report is available when you are logged on as the <b>supervisor</b> or as an Active Directory account in the <i>Manage Sudo Policy</i>, <i>Manage PM Policy</i>, <i>Audit Sudo Policy</i>, or <i>Audit PM Policy</i> roles. You must have an active policy group for Privilege Manager to run this report; you can only include hosts that are joined to a policy group.</p> <p>Identifies the users with log-on access to hosts, the commands that user can run on each host, and the "runas aliases" information for that user. This report includes the following information:</p> <ul style="list-style-type: none"> <li>• Total number of hosts where the user can logon</li> <li>• The hosts where the user can logon</li> <li>• The commands the user can run on each host</li> <li>• The runas aliases for which the user can run commands on each host</li> <li>• The commands the runas alias can run on each host</li> </ul> <p>Use the following report parameters to specify the user to include in the report:</p> <ul style="list-style-type: none"> <li>• A local user (default)</li> <li>• An AD user</li> </ul> <p><b>Browse</b> to select a user.</p> <p>Optionally select the <b>Show detailed report</b> option.</p> <p><b>i</b> <b>NOTE:</b> This report is available when you are logged on as the <b>supervisor</b> or as an Active Directory account in the <i>Manage Sudo Policy</i>, <i>Manage PM Policy</i>, <i>Audit Sudo Policy</i>, or <i>Audit PM Policy</i> roles. You must have an active policy group for Privilege Manager to run this report; you can only include hosts that are joined to a policy group.</p>
Commands Executed	<p>Provides details about the commands executed by users on hosts joined to a policy group, based on their privileges and recorded as events or captured in keystroke logs by Privilege Manager. This report allows you to search for commands that have been recorded as part of events or keystroke logs for a policy group and includes the following information:</p> <ul style="list-style-type: none"> <li>• Command name</li> <li>• User who executed the command</li> <li>• Date and time the command was executed</li> <li>• Host where the command was executed</li> </ul> <p>Use the following report parameters to define details in the report:</p>

Report	Description
	<ul style="list-style-type: none"> <li>• Policy Group</li> <li>• Command</li> <li>• Host</li> <li>• Log status</li> <li>• Date</li> </ul> <p><b>i</b> <b>NOTE:</b> You can use wildcards in the text string you enter in the "Command" box, such as * and ?.</p> <p><b>i</b> <b>NOTE:</b> This report is available when you are logged on as the <b>supervisor</b> or as an Active Directory account in the <i>Manage Sudo Policy</i>, <i>Manage PM Policy</i>, <i>Audit Sudo Policy</i>, or <i>Audit PM Policy</i> roles. You must have an active policy group for Privilege Manager to run this report; you can only include hosts that are joined to a policy group.</p>
Console Access and Permissions	<p>Lists users who have access to the management console based on membership in a console role and the permissions assigned to that role. This report includes the following information:</p> <ul style="list-style-type: none"> <li>• List of roles</li> <li>• List of permissions assigned to each role</li> <li>• List and number of members assigned to each role</li> </ul> <p><b>i</b> <b>NOTE:</b> This report is available when you are logged on as the <b>supervisor</b> or an Active Directory account in the <i>Manage Console Access</i> role. However, when you access this report as <b>supervisor</b>, the management console requires that you authenticate to Active Directory.</p>
Logon Policy for AD User	<p>Identifies the hosts where Active Directory users have been granted log-on permission. This report includes the following information for hosts joined to an Active Directory domain:</p> <ul style="list-style-type: none"> <li>• Total number of hosts where the AD user has access</li> <li>• List of hosts where the AD user has access</li> </ul> <p>Specify the Active Directory users to include in the report:</p> <ul style="list-style-type: none"> <li>• All AD users (default)</li> <li>• Select AD user</li> </ul> <p><b>Browse</b> to search Active Directory to locate and select an Active Directory user.</p>



Report	Description
Logon Policy for Unix Host	<p data-bbox="405 271 1374 405"> <span data-bbox="405 271 432 300">i</span> <b>NOTE:</b> The report might show both the Active Directory login name and local user name(s) in the <i>Login Name</i> column for a selected AD user account because an Active Directory user account can have one or more local user accounts mapped to it.         </p> <p data-bbox="405 443 1374 510"> <span data-bbox="405 443 432 472">i</span> <b>NOTE:</b> Only hosts joined to an Active Directory domain with a Authentication Services 4.x agent are included in this report.         </p> <p data-bbox="405 548 1374 616"> <span data-bbox="405 548 432 577">i</span> <b>NOTE:</b> This report is available when you are logged on as an Active Directory account in the <i>Manage Hosts</i> role.         </p> <p data-bbox="384 645 1374 741">           Identifies the Active Directory users that have been explicitly granted logon permissions for one or more Unix computers. This report includes the following information for hosts joined to an Active Directory domain:         </p> <ul data-bbox="437 763 1326 875" style="list-style-type: none"> <li data-bbox="437 763 1326 831">• Host Name, DNS Name or IP Address of the host selected for the report</li> <li data-bbox="437 846 1134 875">• Users that have been granted permission to log on</li> </ul> <p data-bbox="384 898 1062 927">Specify the managed hosts to include in the report:</p> <ul data-bbox="437 949 815 1032" style="list-style-type: none"> <li data-bbox="437 949 815 978">• All profiled hosts (default)</li> <li data-bbox="437 994 616 1023">• Select host</li> </ul> <p data-bbox="384 1055 1289 1122"> <b>Browse</b> to locate and select a managed host that is joined to Active Directory.         </p> <p data-bbox="405 1144 1342 1211"> <span data-bbox="405 1144 432 1173">i</span> <b>NOTE:</b> This report only includes hosts joined to an Active Directory domain with a Authentication Services 4.x agent.         </p> <p data-bbox="405 1249 1342 1317"> <span data-bbox="405 1249 432 1279">i</span> <b>NOTE:</b> This report is available when you are logged on as an Active Directory account in the <i>Manage Hosts</i> role.         </p>
Policy Changes	<p data-bbox="384 1346 1382 1413">           Provides details of changes made to a policy for a Privilege Manager policy group. This report includes the following information:         </p> <ul data-bbox="437 1435 1366 1637" style="list-style-type: none"> <li data-bbox="437 1435 1126 1464">• Name of the user that made changes to the policy</li> <li data-bbox="437 1480 890 1509">• Version number for the changes</li> <li data-bbox="437 1525 1366 1592">• Time and date the changes were saved and actively used to enforce policy</li> <li data-bbox="437 1608 1066 1637">• Changes made to the policy based on version</li> </ul> <p data-bbox="384 1659 671 1688">Select a policy group.</p> <p data-bbox="384 1711 512 1740">Select to:</p> <ul data-bbox="437 1762 863 1798" style="list-style-type: none"> <li data-bbox="437 1762 863 1798">• Show all changes to the policy</li> </ul>

Report	Description
	<ul style="list-style-type: none"> <li>• Show only changes for a specific pmpolicy file (not available for sudo-based policy)</li> <li>• Show changes to the policy for changes for one or more revisions</li> </ul> <p><b>i</b> <b>NOTE:</b> This report is available when you are logged on as the <b>supervisor</b> or as an Active Directory account in the <i>Manage Sudo Policy</i>, <i>Manage PM Policy</i>, <i>Audit Sudo Policy</i>, or <i>Audit PM Policy</i> roles. You must have an active policy group for Privilege Manager to run this report; you can only include hosts that are joined to a policy group.</p>

## Product Licenses Usage Reports

**Table 21: Product Licenses Usage Reports**

Report	Description
Product License Usage	<p>Provides a summary of all licensing information. This report includes the following information for hosts managed by the console:</p> <ul style="list-style-type: none"> <li>• Product</li> <li>• Purchased licenses</li> <li>• Used licenses</li> </ul>

## Use Authentication Services PowerShell

Authentication Services includes PowerShell modules which provide a "scriptable" interface to many Authentication Services management tasks. You can access a customized PowerShell console from the Control Center **Tools** navigation link.

You can perform the following tasks using PowerShell cmdlets:

- Unix-enable Active Directory users and groups
- Unix-disable Active Directory users and groups
- Manage Unix attributes on Active Directory users and groups
- Search for and report on Unix-enabled users and groups in Active Directory
- Install product license files
- Manage Authentication Services global configuration settings
- Find Group Policy objects with Unix/Mac OS X® settings configured

Using the Authentication Services PowerShell modules, it is possible to script the import of Unix account information into Active Directory.

# Unix-Enable a User and User Group

## To Unix-Enable a user and user group

1. From the Control Center, navigate to **Tools | Authentication Services**.
2. Click **Authentication Services PowerShell Console**.

**NOTE:** The first time you launch the PowerShell Console it asks you if you want to run software from this untrusted publisher. Enter **A** at the PowerShell prompt to import the digital certificate to your system as a trusted entity. Once you have done this you will never be asked this question again on this machine.

3. At the PowerShell prompt, enter the following:

```
Enable-QasUnixGroup UNIXusers | Set-QasUnixGroup -GidNumber 1234567
```

**NOTE:** You created the UNIXusers group in a previous exercise. (See [Add an Active Directory Group Account on page 57](#).)

Unix attributes are generated automatically based on the Default Unix Attributes settings that were configured earlier and look similar to the following:

```
ObjectClass           : group
DistinguishedName     : CN=UNIXusers,CN=Users,DC=example,DC=com
ObjectGuid            : 71aaa88-d164-43e4-a72a-459365e84a25
GroupName             : UNIXusers
UnixEnabled           : True
GidNumber             : 1234567
AdsPath               : LDAP://windows.example.com/CN=UNIXusers,CN=Users,
                      DC=example,DC=com
CommonName            : UNIXusers
```

4. At the PowerShell prompt, to Unix-enable an Active Directory user using the default Unix attribute values, enter:

```
Enable-QasUnixUser ADuser | Set-QasUnixUser -PrimaryGidNumber 1234567
```

The Unix properties of the user display:

```
ObjectClass           : user
DistinguishedName     : CN=ADuser,CN=Users,DC=example,DC=com
ObjectGuid            : 5f83687c-e29d-448f-9795-54d272cf9f25
UserName              : ADuser
UnixEnabled           : True
UidNumber             : 80791532
PrimaryGidNumber      : 1234567
Gecos                 :
HomeDirectory         : /home/ADuser
LoginShell             : /bin/sh
AdsPath               : LDAP://windows.example.com/CN=ADuser,CN=Users,
                      DC=example,DC=com
CommonName            : ADuser
```

- To disable the ADuser user for Unix login, at the PowerShell prompt enter:

```
Disable-QasUnixUser ADuser
```

**NOTE:** To completely clear all Unix attribute information, enter

```
Clear-QasUnixUser ADuser
```

Now that you have Unix-disabled the user, that user can no longer log into systems running the Authentication Services agent.

- From the Control Center, under "Login to remote host", enter:

- the Unix host name in the *Host name* box
- the Active Directory user name, **ADuser**, in the *User name* box

and click **Login** to log onto the Unix host with your Active Directory user account.

A PuTTY window displays.

**NOTE:** PuTTY attempts to log in using Kerberos, but will fail over to password authentication if Kerberos is not enabled or properly configured for the remote SSH service.

- Enter the password for the Active Directory user account.

You will receive a message that says, "Access denied".

## PowerShell Cmdlets

Authentication Services supports the flexible scripting capabilities of PowerShell to automate administrative, installation, and configuration tasks. A wide range of new PowerShell cmdlets are included in Authentication Services:

**Table 22: PowerShell Cmdlets**

cmdlet Name	Description
Add-QasLicense	Installs an Authentication Services license file in Active Directory. Licenses installed this way are downloaded by all Unix clients.
Clear-QasUnixGroup	Clears the Unix identity information from group object in Active Directory. The group is no longer Unix-enabled and will be removed from the cache on the Authentication Services Unix clients.
Clear-QasUnixUser	Clears the Unix identity information from a user object in Active Directory. The user is no longer Unix-enabled will be removed from the cache on the Authentication Services Unix clients.
Disable-QasUnixGroup	"Unix-disables" a group and will be removed from the cache on the Authentication Services Unix clients. Similar to Clear-QasUnixGroup except the Unix group name is retained.

<b>cmdlet Name</b>	<b>Description</b>
Disable-QasUnixUser	Removes an Active Directory user's ability to log in on Unix hosts. (The user will still be cached on the Authentication Services Unix clients.)
Enable-QasUnixGroup	Enables an Active Directory group for Unix by giving a Unix GID number. The GID number is automatically generated.
Enable-QasUnixUser	Enables an Active Directory user for Unix. The required account attributes UID number, primary GID number, GECOS, login shell and home directory are generated automatically.
Get-QasConfiguration	Returns an object representing the Authentication Services application configuration data stored in Active Directory.
Get-QasGpo	Returns a set of objects representing GPOs with Unix and/or Mac OS X® settings configured. This cmdlet is in the <i>Quest.AuthenticationServices.GroupPolicy</i> module.
Get-QasLicense	Returns objects representing the Authentication Services product licenses stored in Active Directory.
Get-QasOption	Returns a set of configurable global options stored in Active Directory that affect the behavior of Authentication Services.
Get-QasSchema	Returns the currently configured schema definition from the Authentication Services application configuration.
Get-QasSchemaDefinition	Returns a set of schema templates that are supported by the current Active Directory forest.
Get-QasUnixGroup	Returns an object that represents an Active Directory group as a Unix group. The returned object can be piped into other cmdlets such as Clear-QasUnixGroup or Enable-QasUnixGroup.
Get-QasUnixUser	Returns an object that represents an Active Directory user as a Unix user. The returned object can be piped into other cmdlets such as Clear-QasUnixUser or Enable-QasUnixUser.
Get-QasVersion	Returns the version of Authentication Services currently installed on the local host.
Move-QasConfiguration	Moves the Authentication Services application configuration information from one container to another in Active Directory.
New-QasAdConnection	Creates an object that represents a connection to Active Directory using specified credentials. You can pass a connection object to most Authentication Services cmdlets to execute commands using different credentials.
New-QasArsConnection	Creates an object that represents a connection to a Quest Active Roles Server using the specified credentials. You can pass a

cmdlet Name	Description
	connection object to most Authentication Services cmdlets to execute commands using different credentials.
New-QasConfiguration	Creates a default Authentication Services application configuration in Active Directory and returns an object representing the newly created configuration.
Remove-QasConfiguration	Accepts a Authentication Services application configuration object as input and removes it from Active Directory. This cmdlet produces no output.
Remove-QasLicense	Accepts an Authentication Services product license object as input and removes the license from Active Directory. This cmdlet produces no output.
Set-QasOption	Accepts an Authentication Services options set as input and saves it to Active Directory.
Set-QasSchema	Accepts an Authentication Services schema template as input and saves it to Active Directory as the schema template that will be used by all Authentication Services Unix clients.
Set-QasUnixGroup	Accepts a Unix group object as input and saves it to Active Directory. You can also set specific attributes using command line options.
Set-QasUnixUser	Accepts a Unix user object as input and saves it to Active Directory. You can also set specific attributes using command line options.

Authentication Services PowerShell cmdlets are contained in PowerShell modules named *Quest.AuthenticationServices* and *Quest.AuthenticationServices.GroupPolicy*. Use the `Import-Module` command to import the Authentication Services commands into an existing PowerShell session.

## Change Auditor for Authentication Services

Change Auditor for Authentication Services allows you to track changes and send alerts on:

- Changes to Active Directory objects and attributes
- Changes to Unix and Mac OS X® settings in Group Policy Objects
- Changes to Product settings and configuration

# Install Change Auditor for Authentication Services

## To install Change Auditor for Authentication Services

1. Insert the Authentication Services distribution media.  
The Autorun *Home* page displays.
  - 1 **NOTE:** If the Autorun *Home* page does not display, navigate to the root of the distribution media and double-click **autorun.exe**.
2. Click the **Setup** tab and select **Change Auditor for Authentication Services**.  
The Change Auditor for Authentication Services for Active Directory web page opens.
3. Click the **Download** on the left navigation panel.
4. Follow the online instructions to gain access to the *Trial Download* page.
5. From the *Trial Download: Change Auditor for Active Directory* page, click the **Installation Guide** link.
6. Read the *Change Auditor Installation Guide* to obtain detailed steps for installing Authentication Services Defender.

## One Identity Defender

One Identity Defender, another Quest product, provides strong authentication functionality that makes it possible for an Active Directory user to use a hardware or software token to authenticate to Unix, Linux®, or Mac OS X® platforms.

## Install One Identity Defender

In order to use strong authentication you must download and install One Identity Defender.

- 1 **NOTE:** One Identity Defender installation requires a license file. A fully-functional 25-user license for it is included with Authentication Services.

## To install One Identity Defender

1. Insert the Authentication Services distribution media.  
The Autorun *Home* page displays.
  - 1 **NOTE:** If the Autorun *Home* page does not display, navigate to the root of the distribution media and double-click **autorun.exe**.
2. From the *Home* page, click the **Setup** tab.
3. From the *Setup* tab, click **One Identity Defender**.  
The One Identity Defender web page opens.

4. Click the **Download** on the left navigation panel.
5. Follow the online instructions to gain access to the *Trial Download* page.
6. From the *Trial Download: Defender* page, click the **Defender Documentation Archive** link.
7. Read the *Defender Installation Guide* to obtain detailed steps for installing Authentication Services Defender.
8. Once you have installed One Identity Defender, see the *One Identity Defender Integration Guide* located in the Control Center **Tools** page, or in the docs directory of the Authentication Services Installation media, for detailed configuration instructions about integrating Authentication Services Defender with Authentication Services.



## Contacting us

For sales or other inquiries, visit [www.quest.com/company/contact-us.aspx](http://www.quest.com/company/contact-us.aspx) or call +1 949 754-8000.

## Technical support resources

Technical support is available to One Identity 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

## A

- Access & Privileges by Host report 70
- Access & Privileges by User report 70
- Access & Privileges Reports 70
- Active Directory
  - changing configuration settings 11
- Active Directory configuration
  - determines schema mappings 27
  - moving the configuration data 27
  - purpose defined 27
  - updating 27
  - validates license information 27
- Active Directory schema
  - how uses 53
- Active Directory user account
  - creating 57
- ActiveRoles Server option
  - not available if ActiveRoles Server agent is not installed 25
- AD Group Conflicts report 69
- AD User Conflicts report 65
- AD user identity formats 32
- AD users and groups
  - managing 58
- Add Hosts
  - procedure 33
- Add Hosts dialog
  - add hosts to management console 33
  - profile hosts 34
- All Hosts dialog
  - Join to Active Directory 41
- All Hosts view
  - install software 39
- Application Configuration
  - overriding requirement 28
- associate an AD user account with a local Unix user 58
- Authentication Services
  - configure management console 30-31
- Authentication Services Readiness report 64
- automatic profiling
  - disable 36
  - enable 36

## B

- Best Practice:
  - add Unix identity attributes to global catalog 54
  - do not install or run Windows components on AD domain controllers 10
  - index attributes in Active Directory 54
  - install only one management console per environment 43

- use generated UIDs and GIDs 50
- use schema designed for storing Unix data in AD 52

## C

- caching of Unix host credentials 34
- change Active Directory configuration settings 27
- Check for AD Readiness 39
- Commands Executed report 70
- configure
  - user service account 36
- configure for Active Directory 30
- configure for Authentication Services 30-31
- Console Access and Permissions report 70
- Control Center
  - described 43
  - must be logged in as domain user 43
- credentials
  - accepted user name formats 32
- customize the schema mapping 54

## D

- debug logging
  - enabling 52
- disable automatic profiling 36
- Display specifiers
  - defined 48

## E

- elevated credentials required
  - automatic profiling 36
  - install Authentication Services software 39
  - join host to AD 41
- enable debug logging 52
- enable local user for AD authentication 58

## F

- Filter Options 45

## G

- global settings modifications 43
- Global Unix Options 50
- group
  - add to console 55
- Group Reports 69

## H

- host
  - join to Active Directory 41
- Host Reports 64

hosts  
add to management console 33  
install software 39  
profile 34, 36

## I

Import Public Key  
using 34  
Install Software  
procedure 39

## J

Join Host procedure 41

## K

known\_hosts file  
importing 33

## L

LDAP attributes  
mapped to Unix attributes 52  
license  
Any VAS 3.x or higher license is valid  
for 4.x. 9  
installing 9

updating 31  
updating in the console 9

License  
adding 47

Limitation:  
Microsoft does not support (GPMC) on  
64-bit platforms of Windows 10

local account administration 55-56

Local Unix Groups report 69

Local Unix User Conflicts report 65

Local Unix Users report 65

Local Unix Users with AD Logon  
report 65

Logging  
enabling 52  
setting options 52

login credentials  
accepted formats 32

Login with AD password 59, 61

Logon Policy for AD User report 70

Logon Policy for Unix Host report 70

## M

manage local users and groups 58  
management console  
add hosts 33  
management console requirements 18  
mapping users 58  
Master /etc/passwd List report 65  
migrating Unix account info to AD 63

## O

- Optimize Schema
  - requires AD administrator rights 54

## P

- patch level requirements 12
- performance and scalability 54
- Permissions
  - required 11
- permissions required for full functionality 14
- Policy Changes report 70
- PosixAccount auxiliary class schema extension 53
- post-install setup 29
- PowerShell cmdlets 76
- PowerShell modules 74
- Preferences
  - configuring settings 47
- Privilege Manager Readiness report 64
- Profile Host
  - procedure 34
- profile hosts automatically 36

## Q

- questusr
  - about 36

## R

- register display specifiers 48
- report
  - Access & Privileges by Host 70
  - Access & Privileges by User 70
  - AD Group Conflicts 69
  - AD User Conflicts 65
  - Authentication Services Readiness 64
  - Commands Executed 70
  - Console Access and Permissions 70
  - Local Unix Groups 69
  - Local Unix User Conflicts 65
  - Local Unix Users 65
  - Local Unix Users with AD Logon 65
  - Logon Policy for AD User 70
  - Logon Policy for Unix Host 70
  - Master /etc/passwd List 65
  - Policy Changes 70
  - Privilege Manager Readiness 64
  - Product Licenses Usage 74
  - Unix-Enabled AD Groups 69
  - Unix-Enabled AD Users 65
  - Unix Computers in AD 64
  - Unix Host Profiles 64
- reports
  - descriptions 63
  - report parameters 63
  - run 62
- required AD rights 43
- required rights 27

Requirements  
Windows Management Tools 10

Requirements:  
encryption types 18  
network ports 20  
Permissions 14  
Windows Permissions 11

run reports 62

## S

saving credentials on server 34  
saving host credentials on server 39

schema  
configuration 52  
Custom Unix attributes 52  
extensions 52  
LDAP attributes 52  
templates 52  
Unix attributes 52

schema configuration  
defined 53

schema extension  
PosixAccount auxiliary class 53

schema mappings  
customizing  
index and replicate GUI and UID  
attributes to global  
catalog 54

set global value 50

Set supervisor Password dialog 31-32

Setup Management Console for Unix  
dialog 29

standard Active Directory schema  
extensions 53

supervisor account  
described 31-32

## T

Troubleshooting  
using logs 52

Troubleshooting:  
cannot configure console for AD  
during initial install 30  
feature not available 41  
join to AD is not available 41  
Profile Automatically option is not  
available 36

## U

Unix-enable an Active Directory  
group 60

Unix-enable an Active Directory user 60

Unix-Enabled AD Groups report 69

Unix-Enabled AD Users report 65

Unix Account Import Wizard  
accessing 63

Unix Agent Requirements 12

Unix Computers in AD report 64

Unix Group ID (GID) 50

Unix Host Profiles report 64

Unix identity management tasks  
performing from Control Center 29

Unix User ID (UID) 50

unregister display specifiers 49

User Reports 65

user service account 36

    configure 36

users

    add to console 56

## **W**

where to set 50