



## **Installation Guide for CiscoWorks QoS Policy Manager on Solaris**

Software Release 4.1  
CiscoWorks

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# CONTENTS

## **Preface** v

- Audience v
- Conventions v
- Product Documentation vi
- Related Documentation vii
- Obtaining Documentation, Obtaining Support, and Security Guidelines 1-viii

---

## **CHAPTER 1**

### **Overview of QPM 4.1** 1-1

- What is QPM? 1-1
- Preparing to Install QPM 1-2
  - Hardware and Software Requirements 1-2
  - Installation Prerequisites 1-3
    - Prerequisites for Installing QPM 1-4
    - Prerequisites for Installing Common Services 1-4
  - Installation Paths 1-5
- Further Resources 1-5

---

## **CHAPTER 2**

### **Installing and Uninstalling QPM** 2-1

- Ports Used by QPM 2-1
- Order of Installation on Solaris 2-2
- Installing Common Services on Solaris 2-2
  - Installation Notes for Common Services 3.2 2-2
  - Installing Common Services 3.2 2-2
- Installing QPM on Solaris 2-5
- Uninstalling QPM on Solaris 2-6
- Verifying QPM Installation 2-7
- Re-installing QPM 2-8

---

## **CHAPTER 3**

### **Setting Up the QPM Server** 3-1

- User Permissions for QPM 3-1
- CiscoWorks User Permissions 3-2
- Setting Up CiscoWorks Usernames and Permissions for QPM 3-4
- ACS User Permissions 3-5

Setting up ACS User Groups and Permissions for QPM 3-9

Changing QPM Database Password 3-11

---

**CHAPTER 4**

**Upgrading and Migrating QPM 4-1**

Upgrading QPM 4.0 to QPM 4.1 4-1

Migrating to a New QPM Server on Solaris 4-2

Migrating QPM Information from One QPM 4.1 Server to Another 4-3

Migrating QPM Information from a QPM 4.0 Server to a QPM 4.1 Server 4-3

Backing Up and Restoring CS and QPM Application Data 4-5

Backing Up CS and QPM Application Data 4-5

Restoring CS and QPM Application Data 4-6

Importing QPM Application Data 4-6

Exporting QPM Application Data 4-7

---

**APPENDIX A**

**Troubleshooting QPM Installation A-1**

Troubleshooting Problems During Installation A-1

Troubleshooting Problems Starting Common Services A-2

Troubleshooting Problems Starting QPM A-2

Obtaining Information for Troubleshooting and Cisco Technical Support A-3

Obtaining System Status Information for Troubleshooting A-3

Obtaining Debug Information for Cisco Technical Support A-3

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**INDEX**



## Preface

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This manual describes how to install and set up CiscoWorks QoS Policy Manager.

## Audience

This manual is for network architects and designers, network administrators, network management consultants, and integration partners.

To use QoS Policy Manager, you should have a basic understanding of network management, TCP/IP, and the configuration of your network.

## Conventions

This document uses the following conventions:

Item	Convention
Commands and keywords	<b>boldface</b> font
Variables for which you supply values	<i>italic</i> font
Displayed session and system information	screen font
Information you enter	<b>boldface screen</b> font
Variables you enter	<i>italic screen</i> font
Menu items and button names	<b>boldface</b> font
Selecting a menu item in paragraphs	<b>Option &gt; Network Preferences</b>
Selecting a menu item in tables	Option > Network Preferences



### Note

Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the publication.



### Caution

Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

# Product Documentation


**Note**

We sometimes update the printed and electronic documentation after original publication. Therefore, you should also review the documentation on Cisco.com for any updates.

You can find product information, including documentation, at this URL on Cisco.com:

<http://www.cisco.com/en/US/products/sw/cscowork/ps2064/index.html>

Table 1 describes the product documentation that is available.

**Table 1**      **Product Documentation**

Document Title	Available Formats
<i>Release Notes for CiscoWorks QoS Policy Manager 4.1 on Windows</i>	<ul style="list-style-type: none"> <li>• PDF on QPM 4.1 DVD</li> <li>• On Cisco.com at: <a href="http://www.cisco.com/en/US/products/sw/cscowork/ps2064/prod_release_notes_list.html">http://www.cisco.com/en/US/products/sw/cscowork/ps2064/prod_release_notes_list.html</a></li> </ul>
<i>Release Notes for CiscoWorks QoS Policy Manager 4.1 on Solaris</i>	<ul style="list-style-type: none"> <li>• PDF on QPM 4.1 DVD</li> <li>• On Cisco.com at: <a href="http://www.cisco.com/en/US/products/sw/cscowork/ps2064/prod_release_notes_list.html">http://www.cisco.com/en/US/products/sw/cscowork/ps2064/prod_release_notes_list.html</a></li> </ul>
<i>Quick Start Guide for CiscoWorks QoS Policy Manager 4.1</i>	<ul style="list-style-type: none"> <li>• Printed document included with the product.</li> <li>• PDF on QPM 4.1 DVD</li> <li>• On Cisco.com at: <a href="http://www.cisco.com/en/US/products/sw/cscowork/ps2064/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/sw/cscowork/ps2064/prod_installation_guides_list.html</a></li> </ul>
<i>Installation Guide for QoS Policy Manager 4.1 on Solaris</i>	<ul style="list-style-type: none"> <li>• PDF on QPM 4.1 DVD</li> <li>• On Cisco.com at: <a href="http://www.cisco.com/en/US/products/sw/cscowork/ps2064/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/sw/cscowork/ps2064/prod_installation_guides_list.html</a></li> </ul>
<i>Installation Guide for QoS Policy Manager 4.1 on Windows</i>	<ul style="list-style-type: none"> <li>• PDF on QPM 4.1 DVD</li> <li>• On Cisco.com at: <a href="http://www.cisco.com/en/US/products/sw/cscowork/ps2064/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/sw/cscowork/ps2064/prod_installation_guides_list.html</a></li> </ul>
<i>Getting Started Guide for CiscoWorks QoS Policy Manager 4.1</i>	<ul style="list-style-type: none"> <li>• PDF on QPM 4.1 DVD and from the CiscoWorks QoS Policy Manager online help.</li> <li>• On Cisco.com at: <a href="http://www.cisco.com/en/US/products/sw/cscowork/ps2064/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/sw/cscowork/ps2064/prod_installation_guides_list.html</a></li> </ul>

**Table 1**      **Product Documentation (continued)**

Document Title	Available Formats
<i>User Guide for CiscoWorks QoS Policy Manager 4.1</i>	<ul style="list-style-type: none"> <li>• PDF on QPM 4.1 DVD and from the CiscoWorks QoS Policy Manager online help.</li> <li>• On Cisco.com at: <a href="http://www.cisco.com/en/US/products/sw/cscowork/ps2064/products_user_guide_list.html">http://www.cisco.com/en/US/products/sw/cscowork/ps2064/products_user_guide_list.html</a></li> </ul>
Readme for CiscoWorks CS 3.2 with QoS Policy Manager 4.1	<ul style="list-style-type: none"> <li>• PDF on QPM 4.1 DVD</li> <li>• On Cisco.com at: <a href="http://www.cisco.com/en/US/products/sw/cscowork/ps2064/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/sw/cscowork/ps2064/prod_installation_guides_list.html</a></li> </ul>
<i>Supported Devices for CiscoWorks QoS Policy Manager 4.1</i>	<ul style="list-style-type: none"> <li>• On Cisco.com at: <a href="http://www.cisco.com/en/US/products/sw/cscowork/ps2064/products_device_support_tables_list.html">http://www.cisco.com/en/US/products/sw/cscowork/ps2064/products_device_support_tables_list.html</a></li> </ul>
Context-sensitive Online Help	<ul style="list-style-type: none"> <li>• Select an option from the navigation tree, then click <b>Help</b>.</li> <li>• Click the Help button in the dialog box.</li> </ul>

## Related Documentation



### Note

We sometimes update the printed and electronic documentation after original publication. Therefore, you should also review the documentation on Cisco.com for any updates.

[Table 2](#) describes the related documentation that is available.

**Table 2**      **Related Documentation**

Document Title	Available Formats
<i>Installing and Getting Started With CiscoWorks LAN Management Solution 3.1</i>	<ul style="list-style-type: none"> <li>• PDF on the QPM 4.1 DVD.</li> <li>• On Cisco.com at: <a href="http://www.cisco.com/en/US/products/sw/cscowork/ps3996/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/sw/cscowork/ps3996/prod_installation_guides_list.html</a></li> </ul>
<i>User Guide for CiscoWorks Common Services 3.2</i>	<ul style="list-style-type: none"> <li>• PDF on the QPM 4.1 DVD</li> <li>• On Cisco.com at: <a href="http://www.cisco.com/en/US/products/sw/cscowork/ps3996/products_user_guide_list.html">http://www.cisco.com/en/US/products/sw/cscowork/ps3996/products_user_guide_list.html</a></li> </ul>



### Note

The procedure for installing CiscoWorks Common Services 3.1 and 3.2 is the same. The installation guide for CiscoWorks Common Services 3.2 points to the *Installing and Getting Started With CiscoWorks LAN Management Solution 3.1*.

# Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>



# CHAPTER 1

## Overview of QPM 4.1

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This chapter contains the following topics:

- [What is QPM?, page 1-1](#)
- [Preparing to Install QPM, page 1-2](#)
- [Further Resources, page 1-5](#)

## What is QPM?

QoS Policy Manager (QPM) lets you analyze traffic throughput by application or service class, and then leverage that information to configure QoS policies. This helps you to differentiate the traffic and define the QoS functions to be applied to each type of traffic flow.

By simplifying QoS policy definition and deployment, QPM makes it easier for you to create and manage end-to-end differentiated services in your network. This allows you to use your existing network resources more efficiently and economically.

For example, you can deploy policies that ensure that your mission-critical applications always get the bandwidth required to run your business.

QPM is suitable for large-scale enterprise deployments, and IP telephony deployments, consisting of hundreds or thousands of devices.

QPM helps you to manage large networks by providing advanced user authorization capabilities through integration with Cisco Access Control Server (ACS).

QPM runs on the CiscoWorks Common Services server. CiscoWorks Common Services provides the infrastructure required by QPM to run from the CiscoWorks desktop environment.

It allows you to manage user roles and privileges, and control user access to specific tasks in QPM.

QPM stores policy and device information in a relational database. Reports generated by QPM are stored separately as XML files. Monitoring task data is also stored separately.

QPM uses the CiscoWorks Common Services server to backup all application data.

# Preparing to Install QPM

Before you install QPM, review the installation prerequisites and available installation paths to prevent problems during installation.

- [Hardware and Software Requirements, page 1-2](#)
- [Installation Prerequisites, page 1-3](#)
- [Installation Paths, page 1-5](#)

## Hardware and Software Requirements

[Table 1-1](#) shows the hardware and software requirements for the QPM server.

If the server does not meet the recommended system requirements, QPM startup and performance might be slow, or QPM might not work at all on the server.

**Table 1-1** *Server Hardware and Software Requirements on Solaris*

Processor	Any of the following: <ul style="list-style-type: none"> <li>• UltraSparc III (280R, 480R)</li> <li>• UltraSparc IIIi Processor (V240, V250, V440), Sun Fire v210</li> <li>• UltraSparc IV Processor (V490, V890)</li> <li>• UltraSparc T1 Processor (Sun Fire T1000 Server, Sun Fire T2000 Server)</li> </ul>
Hardware and RAM requirement	The number of CPUs and the RAM size depends on the number of devices: <ul style="list-style-type: none"> <li>• For around 2500 devices—2 CPUs with 2GB RAM memory requirement with a swap space of 4 GB</li> <li>• For around 10000 devices—2 CPUs with 4GB RAM memory requirement with a swap space of 8 GB</li> </ul>
Available disk drive space	A minimum of 9 GB. CiscoWorks Common Services 3.2 requires 2 GB free disk space, therefore ensure that you have a minimum of 9 GB free disk space before you install CiscoWorks Common Services 3.2 and QPM. The available disk space required also depends on the tasks you want to do in QPM. We recommend you to use 40 GB hard disk.
Monitor	Monitor with display set to High Color (16 Bit)
Software <sup>1</sup>	<ul style="list-style-type: none"> <li>• Solaris 9, Solaris 10</li> </ul> <p>We recommend that you install the Solaris Operating System in any of the following modes:</p> <ul style="list-style-type: none"> <li>• Entire Distribution</li> <li>• Entire Distribution plus OEM Support</li> <li>• End User System Support</li> </ul>
Browser (optional)	<ul style="list-style-type: none"> <li>• Firefox 2.0</li> </ul>

1. Common Services 3.2 supports only US-English and Japanese versions of Solaris Operating Systems. It does not support any other language version. Installation might proceed normally in other locales but there might be problems in the functionality of CiscoWorks.

Table 1-2 shows the requirements for client systems.

**Table 1-2**      **Client Requirements**

System hardware and software	<p>The hardware recommended for the client systems are:</p> <ul style="list-style-type: none"> <li>• Windows systems: <ul style="list-style-type: none"> <li>PC-compatible system with single CPU 2.4 GHz or equivalent processor running: <ul style="list-style-type: none"> <li>– Windows Server 2003 Standard and Enterprise Editions with Service Pack 1 and 2</li> <li>– Windows Server 2003 R2 Standard and Enterprise Editions with Service Pack 1 and 2</li> <li>– Windows XP Professional with Service Pack 2, Service Pack 3</li> <li>– Windows Vista Business Edition with Service Pack 1</li> </ul> </li> </ul> </li> <li>• Solaris systems: <ul style="list-style-type: none"> <li>Sun UltraSPARC processor with Solaris 10 with latest patches and upgrades.</li> </ul> </li> </ul>
Memory requirements	<p>1GB minimum RAM</p> <p>Either of the following:</p> <ul style="list-style-type: none"> <li>• For Solaris: 2GB swap space</li> <li>• For Windows: 2GB virtual memory</li> </ul> <p>We recommend that you set virtual memory and swap space to twice the size of RAM.</p>
Monitor	Monitor with display set to High Color (16 Bit)
Browser	<ul style="list-style-type: none"> <li>• Internet Explorer 6.0 Service Pack 1, Service Pack 2</li> <li>• Internet Explorer 7.0</li> <li>• Firefox 2.0 (for Solaris 10 client)</li> </ul>
Plug-ins	<ul style="list-style-type: none"> <li>• Adobe Flash Player 9 or later</li> </ul>

## Installation Prerequisites

We recommend that you use a dedicated server for QPM for maximum performance.

If you cannot use a dedicated server for QPM, you can install QPM on a Common Services server with LAN Management Solution (LMS) 3.1.

## Prerequisites for Installing QPM

Before you install QPM, ensure the following:

- The machine on which you are going to install QPM meets the requirements for running QPM. See [Hardware and Software Requirements, page 1-2](#).
- CiscoWorks Common Services 3.2 must be installed on the machine before you begin to install QPM.

The QPM installation DVD contains Common Services 3.2 installation files. For more information, see [Chapter 2, “Installing and Uninstalling QPM.”](#)

- Set the desktop display to High Color (16 Bit). You can set the color depth under **Display Properties > Settings** on your desktop.

## Prerequisites for Installing Common Services

Before you install CiscoWorks Common Services, ensure that you download and install the latest required and recommended patches for Solaris 8 and Solaris 9 from [www.sun.com](http://www.sun.com).

- The required patches are mandatory for all Common Services features to function properly.
- The recommended patches are optional. Some of the Common Services features may not work if these patches are not installed on your system.

[Table 1-3](#) lists the required and recommended patches for Solaris 8 and Solaris 9.

**Table 1-3** *Solaris Patches<sup>1</sup>*

Operating System	Required		Recommended	
	Server	Client	Server	Client
Solaris 9	114224-01 113580-01 112839-04 112233-12 114006-01	112771-14 112661-06 113244-05	113326-01 112998-03 113713-14 112964-07 113575-05 112970-07 112874-31	112808-06
Solaris 10	<ul style="list-style-type: none"> <li>• Required Server Patch is 122032-05.</li> <li>• Minimum system level must be 11/06 release or higher. To find out the current operating system level, enter the following command: <b># more /etc/release</b> For example, the system displays the following information: Solaris 10 11/06 s10s_u2wos_09a SPARC Copyright 2006 Sun Microsystems, Inc. All Rights Reserved. Use is subject to license terms. Assembled 11 November 2006</li> </ul>			

1. Use the `showrev -p` command to verify that these patches have been applied.

## Installation Paths

If you have other CiscoWorks products installed on your server, review the information in [Table 1-4](#) to determine the installation path required for QoS Policy Manager to successfully operate.

**Table 1-4**      *Recommended Installation Paths*

If You are Installing QoS Policy Manager on a System That...	Then You Must...
Has no other CiscoWorks products	Install (from the QPM 4.1 DVD): <ol style="list-style-type: none"> <li>1. Common Services 3.2</li> <li>2. QoS Policy Manager 4.1</li> </ol>
Has LMS 3.1	Install QoS Policy Manager 4.1 (from the DVD)
Has QPM 4.0 or QPM 4.0.x, with Common Services 3.0.5	Install (from the QPM 4.1 DVD): <ol style="list-style-type: none"> <li>1. Common Services 3.2</li> <li>2. QoS Policy Manager 4.1</li> </ol> The QPM and CS application data is automatically migrated.

## Further Resources

For further information see the following:

- For information on installing CS 3.2 and QPM 4.1, see [Chapter 2, “Installing and Uninstalling QPM.”](#)





## CHAPTER 2

# Installing and Uninstalling QPM

---

This chapter contains the following topics:

- [Ports Used by QPM, page 2-1](#)
- [Order of Installation on Solaris, page 2-2](#)
- [Installing Common Services on Solaris, page 2-2](#)
- [Installing QPM on Solaris, page 2-5](#)
- [Uninstalling QPM on Solaris, page 2-6](#)
- [Verifying QPM Installation, page 2-7](#)
- [Re-installing QPM, page 2-8](#)

## Ports Used by QPM

QPM on Solaris uses the following ports, in addition to the ports used by CiscoWorks Common Services:

- 51099—JNDI lookup port
- 51199—JRMP lookup port
- 51299—Admin page port
- 43460—Database port
- 49156—EMS database port
- 51399—PDP port
- 61162—SNMP port for RMON traps
- 47001—RMI port for EMS
- 47002—RMI port for Collector Services

For information about the ports used by CiscoWorks Common Services, see the *Installing and Getting Started With CiscoWorks LAN Management Solution 3.1*.

You can also go to:

[http://www.cisco.com/en/US/docs/net\\_mgmt/cisoworks\\_lan\\_management\\_solution/3.1/install/guide/IGSG31.html](http://www.cisco.com/en/US/docs/net_mgmt/cisoworks_lan_management_solution/3.1/install/guide/IGSG31.html)

## Order of Installation on Solaris

The CiscoWorks Common Services and QPM applications must be installed in the following order:

1. CiscoWorks Common Services 3.2
2. QoS Policy Manager 4.1

## Installing Common Services on Solaris

For information regarding the prerequisites for installing Common Services 3.2, see [Installation Prerequisites, page 1-3](#)

### Installation Notes for Common Services 3.2

Note the following before you install Common Services 3.2:

- Whenever a prompt appears during installation, the values in square bracket are default values. If you press **Enter** when the installation program prompts you to enter a value, the program takes the default value.
- You must have root privileges to install Common Services.
- Do not run any other program while the installation is in progress.
- Do not install Common Services on a system that does not have Name Lookup.
- If you are running HP OpenView Network Node Manager (HPOVNNM) or NetView, the installation might take significantly longer to complete.

Stop all HP OpenView Network Node Manager (HPOVNNM) or NetView services before installing Common Services.

- If your system does not have enough disk space, an error message may appear that the installation system is running out of disk space.

You can either free up disk space on the system and continue the installation, or stop and exit the installation.

## Installing Common Services 3.2

To install Common Services 3.2 on Solaris:

---

**Step 1** Mount the QPM 4.1 DVD as root.

**Step 2** Enter the following at the prompt:

```
# cd /dvd/qpm4_1/CS_3_2_installation/Solaris_K9
# ./setup.sh
```

where *dvd* is the mount point for your DVD drive.

A message appears:

```
Press ENTER to read/browse the following License Agreement
```

**Step 3** Press **Enter** to read the license agreement.

The following message appears at the end of the license agreement:

```
You must accept this License Agreement to proceed with the installation.  
If you enter N/n, the installation will exit.  
Do you accept all the terms of the License Agreement? (y/n) [n]:
```

**Step 4** Enter either:

- **Y** and press **Enter** to accept the license and proceed with the installation.

Or

- **N** and press **Enter** to deny and stop the installation.

**Step 5** Press **Y** to continue.

Error messages or warning messages appear if you do not have the required or recommended Server and Client patches.

We recommend you download and install the latest required and recommended patches from [www.sunsolve.sun.com](http://www.sunsolve.sun.com), before you run Common Services.

If any of the required Server patches is missing, the following message appears:

```
Installation can proceed without the required Server patches. However, you must install  
the required patches listed above before running CiscoWorks.  
Do you want to continue the installation? (y/n) [y]
```

If you enter **Y** and proceed with the installation, the following message appears:

Choose the type of Setup you prefer.

1) Typical installation.

Installs the product in the default location /opt/CSCOpX.

Allows you to select the components to be installed.

Prompts for CiscoWorks admin password and System Identity Account password

Randomly generates CiscoWorks guest database passwords if they do not exist.

Recommended for most users.

2) Custom installation.

Allows you to select the product location.

Allows you to select components to be installed.

Prompts for CiscoWorks admin, guest, System Identity Account and database passwords if they do not exist.

Recommended for advanced users.

Select one of the installation modes using its number or (q) to quit [1]

**Step 6** Press either:

- **Enter** to proceed with the installation after you select the Typical mode as given in Prerequisites for Installing Common Services 3.2.

Or

- **Q** to quit the installation.

If you press **Enter** to proceed with the installation, the following message appears:

```
Enter the location where the product will be installed. The default location is
/opt/CSCOpX. If you choose another location, installation will create a symbolic link
/opt/CSCOpX to that location.
```

```
Enter location or q to quit [/opt/CSCOpX]:
```

The Custom path or location you specify cannot be the sub-directory of /opt/CSCOpX.



**Caution**

Do not remove the link after installation. Common Services will not work without this symbolic link.

**Step 7** Press **Enter** to accept the default directory for product installation, or enter a different directory.

The installation program calculates the minimum disk space required for installing the product.

- If the disk space is sufficient, the following message appears:

```
Sufficient disk space
```

- If the drive does not have enough space, an error message appears and the installation exits.

**Step 8** Enter the CiscoWorks admin password and confirm it.

**Step 9** Enter the guest password and confirm it.

**Step 10** Enter the System Identity Account password and confirm it.

In a multi-server environment, you must configure all systems part of your multi-server setup with the same System Identity Account password.

**Step 11** Enter the CiscoWorks Common Services database password and confirm it.

While entering the CiscoWorks user passwords, use a minimum of eight characters.

**Step 12** Enter the SMTP server name.

**Step 13** Enter the following information to generate a Self-signed certificate and key files for HTTPS:

- Hostname
- Administrator's e-mail address
- Country
- State
- City
- Company
- Organization

Only the Hostname is mandatory. Other fields are optional. Press **Enter** to skip other fields.

The installation program checks dependencies and system requirements and copies the files to the run time and the installation proceeds.

A message appears:

```
Do you want to see the passwords that were entered/randomly generated? (y/n) [y]
```

**Step 14** Enter **Y** or press **Enter** to display randomly generated and manually entered passwords.

A message appears:

```
Exiting installation beyond this point might result in system instability.
```

```
Do you want to continue the installation? (y/n) [y]
```

**Step 15** Enter **Y** to continue the installation.

If you stop the installation after this point, the installation may become unstable and problems may occur when you try to install again.

It takes a while to complete the installation.

The following messages appear at the end of the installation:

```
Software Installation Tool Completed
```

```
Possible Warnings/Errors Encountered
```

Any warning and error messages appear after these messages.

**Step 16** Unmount the DVD.

For more information on installing Common Services 3.2. on Solaris, see the *Installing and Getting Started With CiscoWorks LAN Management Solution 3.1*.

You can also go to:

[http://www.cisco.com/en/US/docs/net\\_mgmt/cisoworks\\_lan\\_management\\_solution/3.1/install/guide/IGSG31.html](http://www.cisco.com/en/US/docs/net_mgmt/cisoworks_lan_management_solution/3.1/install/guide/IGSG31.html)

---

## Installing QPM on Solaris

QPM is automatically installed in the CiscoWorks Common Services installation directory. The default location is `/opt/CSCOpX`.

The installation process also copies the QPM export and import utilities to the QPM server. For more information about these utilities, see [Chapter 4, “Upgrading and Migrating QPM.”](#)

### Before You Begin

- Ensure that CiscoWorks Common Services 3.2 is installed on your computer before you install QPM.
- Verify TCP ports that QPM uses and check for conflicts with existing applications. See [Ports Used by QPM, page 2-1](#).
- Verify that you have superuser permissions.

To install QPM 4.1 on Solaris:

---

**Step 1** Go to the root directory and mount the QPM DVD on the CiscoWorks Common Services server.

We recommend that you do not install QPM from a network DVD drive.

**Step 2** Enter the following at the prompt:

```
# cd /dvd/qpm4_1/QPM_4_1_installation/Solaris_K9
```

```
# ./setup.sh
```

where `dvd` is the mount point for your DVD drive.

A message appears prompting you to read the license agreement.

**Step 3** Press **Enter**.

**Step 4** Continue to press **Enter** until the prompt to accept the license agreement ends.

- Step 5** Enter either:
- **Y** to accept the license and proceed with the installation,
- Or
- **N** to deny and stop the installation.
- The installation proceeds if you have selected **Y**.
- Step 6** Enter the mode of license to be installed (Purchased Version or Evaluation Version).
- The installation proceeds based on the mode of license you selected.
- Step 7** Unmount the DVD after installation is complete.
- You do not need to restart the computer before running QPM for the first time.
- 

**Notes:**

- Before you begin to work with QPM, ensure you have the correct user permissions. If you intend to work with ACS device groups and user permissions, configure settings in ACS and CiscoWorks as described in [Chapter 3, “Setting Up the QPM Server.”](#)
- After setup is complete, verify the QPM installation. See [Verifying QPM Installation, page 2-7](#) for details.
- If you encounter problems while installing QPM, stop the installation and reinstall the product using the QPM 4.1 installation DVD. Also see [Appendix A, “Troubleshooting QPM Installation.”](#)
- For information on exporting QPM application data on Solaris, see [Backing Up CS and QPM Application Data, page 4-5](#).
- For information on importing QPM application data on Solaris, see [Restoring CS and QPM Application Data, page 4-6](#).

## Uninstalling QPM on Solaris

Use the CiscoWorks Common Services `uninstall` script to remove QoS Policy Manager files and settings.

Uninstalling QPM does not remove your deployed policies from the network devices.

The license details will get deleted during QPM 4.1 uninstallation. You should add the license file again during the subsequent installation.

If you want the current QPM 4.1 application data to be used after uninstallation, you should perform the backup before you proceed with the uninstallation. See [Backing Up CS and QPM Application Data, page 4-5](#) for details.

**Caution**

You must use the uninstall script to remove the product. If you try to remove QPM or its components manually, you might damage your system.

---

To uninstall QPM 4.1:

- 
- Step 1** Go to the root directory in Common Services and start the uninstall script, by entering the following commands:
- ```
# cd /  
# /opt/CSCOpX/bin/uninstall.sh
```
- where */opt/CSCOpX* is the default installation directory of Common Services.  
A list of CiscoWorks components appears.
- Step 2** Enter the number corresponding to the option you have chosen or **q** to quit.  
You can select more than one component. Enter the number corresponding to the components, separated by commas.
- Step 3** Press **Enter** to continue.  
When you remove CiscoWorks Common Services, the uninstall script removes changes made to the */etc/services* file. The */etc* directory still contains all system file changes. The uninstall messages are written to the */var/tmp/ciscouninstall.log* file.  
After the uninstallation is complete, a message appears:  

```
All files were deleted successfully.
```
- Step 4** Check the following files:
- */etc/syslog.conf* for syslog changes.
  - */etc/services* to ensure that port assignments for the QPM applications have been removed.
- 

## Verifying QPM Installation

QoS Policy Manager is accessed from the CiscoWorks Homepage.

To verify QPM installation:

- 
- Step 1** Go to your web browser and start CiscoWorks.  
The default URL is `http://QPMinstall:1741`, where *QPMinstall* is the name of the computer with the QPM installation.  
The CiscoWorks Homepage is displayed.
- Step 2** Verify that the browser you are using is a supported version, and that JavaScript and cookies are enabled.  
If they are not enabled, change your browser preferences to enable them, then continue to the next step.
- Step 3** Log into CiscoWorks with your username and password.  
The CiscoWorks homepage appears.

**Step 4** Click **QoS Policy Manager** in the QoS Policy Management panel.

QPM opens in a separate browser window.

If you encounter problems starting QPM, see [Appendix A, “Troubleshooting QPM Installation”](#) for possible causes and solutions.

---

## Re-installing QPM

QPM 4.1 supports re-installation. This allows you to troubleshoot any accidental corruption of files during installation.

Please make note of the following points before you re-install QPM:

- No additional license is required to perform re-installation of QPM 4.1
- The already existing license will get restored during re-installation
- QPM data gets backed up automatically (at the location `/opt/CSCOpX/temp/qpm4.1.0_reinstallbackup`) during re-installation. You should run the `restorebackup.pl` utility to import this data back to QPM 4.1.



## CHAPTER 3

# Setting Up the QPM Server

---

This chapter contains the following topics:

- [User Permissions for QPM, page 3-1](#)
- [CiscoWorks User Permissions, page 3-2](#)
- [ACS User Permissions, page 3-5](#)
- [Setting up ACS User Groups and Permissions for QPM, page 3-9](#)
- [Changing QPM Database Password, page 3-11](#)

## User Permissions for QPM

CiscoWorks Common Services provides management of QPM user roles and privileges. QPM can work with either Cisco Secure Access Control Server (ACS) permissions or CiscoWorks permissions.

QPM permissions for authentication and authorization are mapped to CiscoWorks permission roles or ACS permission roles, as specified.



### Note

---

To use ACS authentication and authorization, ACS must be installed on the network.

---

Before you begin to work with QPM, you should ensure that you have the appropriate permissions.

ACS and CiscoWorks permissions in QPM rely on the usergroup or username, the command set or privileges associated with the usergroup or username, and the device or device group for which privileges are requested.

If your username or usergroup is not authorized for certain QPM actions, the related menu items, TOC items, and buttons will be hidden or disabled.

# CiscoWorks User Permissions

QPM uses a separate set of permissions for each type of task.

Table 3-1 shows how QPM permissions are mapped to CiscoWorks roles.

**Table 3-1 QPM Permissions Mapped to CiscoWorks Roles**

| QPM Permissions             | CiscoWorks Roles |               |                  |          |           |
|-----------------------------|------------------|---------------|------------------|----------|-----------|
|                             | System Admin     | Network Admin | Network Operator | Approver | Help Desk |
| <b>Device Inventory</b>     |                  |               |                  |          |           |
| View                        | X                | X             | X                | X        | X         |
| Add/Modify                  | X                | X             |                  |          |           |
| <b>Policy Configuration</b> |                  |               |                  |          |           |
| View                        | X                | X             | X                | X        | X         |
| Modify                      |                  | X             | X                | X        |           |
| <b>Deployment</b>           |                  |               |                  |          |           |
| View                        | X                | X             | X                | X        | X         |
| Deploy                      |                  | X             |                  |          |           |
| Delete jobs and logs        | X                |               |                  |          |           |
| <b>TelePresence</b>         |                  |               |                  |          |           |
| View                        | X                | X             | X                | X        | X         |
| Modify                      |                  | X             | X                | X        |           |
| <b>Monitor</b>              |                  |               |                  |          |           |
| Real Time Status            |                  |               |                  |          |           |
| View Report Card            | X                | X             | X                | X        | X         |
| Launch Real Time Chart      | X                | X             | X                | X        | X         |
| Launch Event browser        | X                | X             | X                | X        | X         |
| Historical Trends           |                  |               |                  |          |           |
| View                        | X                | X             | X                | X        | X         |
| Delete                      | X                |               |                  |          |           |
| Create Analysis Tasks       |                  | X             | X                | X        |           |
| Threshold Configuration     |                  |               |                  |          |           |
| View                        | X                | X             | X                | X        | X         |
| Create Threshold Sets       |                  | X             |                  |          |           |
| Assign Threshold Sets       |                  | X             |                  |          |           |

Table 3-1 QPM Permissions Mapped to CiscoWorks Roles (continued)

| QPM Permissions           | CiscoWorks Roles |               |                  |          |           |
|---------------------------|------------------|---------------|------------------|----------|-----------|
|                           | System Admin     | Network Admin | Network Operator | Approver | Help Desk |
| Delete Threshold Jobs     | X                |               |                  |          |           |
| NCM Events                |                  |               |                  |          |           |
| Launch NCM Event browser  | X                | X             | X                | X        | X         |
| Rediscover                | X                | X             |                  |          |           |
| Deploy                    |                  | X             |                  |          |           |
| Import                    |                  | X             | X                | X        |           |
| <b>Admin</b>              |                  |               |                  |          |           |
| View Audit logs           | X                | X             | X                | X        | X         |
| Delete Audit logs         | X                |               |                  |          |           |
| Backup/Retrieve Backup    | X                |               |                  |          |           |
| SNMP Configuration Rights | X                | X             |                  |          |           |
| License                   | X                |               |                  |          |           |
| Notification Group        |                  |               |                  |          |           |
| View                      | X                | X             | X                | X        | X         |
| Delete                    | X                |               |                  |          |           |
| Create                    |                  | X             |                  | X        |           |
| NCM Integration           | X                | X             |                  |          |           |

To view the QPM tasks allowed for each CiscoWorks role in QPM, select **Administration > User Permissions Report**.

CiscoWorks roles have the following permissions in QPM:

- System Admin
  - View all information in QPM
  - Make changes to devices in the QPM device inventory
  - Delete policy deployment jobs and logs
  - Launch Real Time Charts and Event Browsers
  - Delete Monitoring Tasks (under Historical Trends)
  - Delete Threshold Assignment jobs
  - Delete Audit logs
  - Create and retrieve backups of the QPM database
  - Configure SNMP Configuration Rights
  - Add/remove licenses

System admin is the only user role that can delete logs, jobs, and reports in QPM.

- Network Admin
  - View all information in QPM
  - Make changes to devices in the QPM device inventory
  - Create and edit policies
  - Deploy policies on devices
  - Launch Real Time Charts and Event Browsers
  - Create Monitoring Tasks (under Historical Trends)
  - Create Threshold Sets and assign Threshold Sets to interfaces
  - Configure SNMP Configuration Rights

Network admin is the only user role that can deploy QoS policies on the devices in the network.

- Network Operator
  - View all information in QPM
  - Create and edit policies
  - Launch Real Time Charts and Event Browsers
  - Create Monitoring Tasks (under Historical Trends)
  - Create and run monitoring tasks
- Approver
  - View all information in QPM
  - Create and edit policies
  - Launch Real Time Charts and Event Browsers
  - Create Monitoring Tasks (under Historical Trends)
- Help Desk
  - View all information in QPM
  - Launch Real Time Charts and Event Browsers

## Setting Up CiscoWorks Usernames and Permissions for QPM

You can add your username for CiscoWorks authentication from the CiscoWorks Homepage.

To select a role or a number of roles:

---

**Step 1** Select **Common Services > Server > Security** in the CiscoWorks Homepage.

The Security Settings page appears.

**Step 2** Click **Local User Setup** in the TOC.

The Local User Setup page appears.

**Step 3** Click **Add**.

The User Information dialog box appears.

**Step 4** Enter the username in the Username field.

- Step 5** Enter the password in the Password field.
- Step 6** Re-enter the password in the Verify Password field.
- Step 7** Enter the E-mail ID in the Email field, if the user has an Approver role.
- Step 8** Go to the Roles pane and select the check box corresponding to the roles to be assigned to the user. See the *User Guide for CiscoWorks Common Services 3.2* for more information about setting CiscoWorks usernames and permissions.

CiscoWorks permissions cannot be customized. However, you can create a role for a user with the permissions of more than one CiscoWorks role. For example, a user can have both System Admin and Approver roles.



**Tip**

You can create a Super User (permissions for everything) by giving both system administrator and network administrator roles to a user.

## ACS User Permissions

When you configure CiscoWorks Common Services to use ACS authorization and authentication, QPM adds permissions in ACS.

Table 3-2 shows the default mapping of QPM permissions to ACS roles. This is the same as for the CiscoWorks roles. However, while using ACS authorization and authentication, you can modify the default roles.

**Table 3-2** QPM Permissions Mapped to ACS Roles

| QPM Permissions             | CiscoWorks Roles |               |                  |          |           |
|-----------------------------|------------------|---------------|------------------|----------|-----------|
|                             | System Admin     | Network Admin | Network Operator | Approver | Help Desk |
| <b>Device Inventory</b>     |                  |               |                  |          |           |
| View                        | X                | X             | X                | X        | X         |
| Add/Modify                  | X                | X             |                  |          |           |
| <b>Policy Configuration</b> |                  |               |                  |          |           |
| View                        | X                | X             | X                | X        | X         |
| Modify                      |                  | X             | X                | X        |           |
| <b>Deployment</b>           |                  |               |                  |          |           |
| View                        | X                | X             | X                | X        | X         |
| Deploy                      |                  | X             |                  |          |           |
| Delete jobs and logs        | X                |               |                  |          |           |
| <b>TelePresence</b>         |                  |               |                  |          |           |
| View                        | X                | X             | X                | X        | X         |
| Modify                      |                  | X             | X                | X        |           |
| <b>Monitor</b>              |                  |               |                  |          |           |

Table 3-2 QPM Permissions Mapped to ACS Roles (continued)

| QPM Permissions                | CiscoWorks Roles |               |                  |          |           |
|--------------------------------|------------------|---------------|------------------|----------|-----------|
|                                | System Admin     | Network Admin | Network Operator | Approver | Help Desk |
| <b>Real Time Status</b>        |                  |               |                  |          |           |
| View Report Card               | X                | X             | X                | X        | X         |
| Launch Real Time Chart         | X                | X             | X                | X        | X         |
| Launch Event browser           | X                | X             | X                | X        | X         |
| <b>Historical Trends</b>       |                  |               |                  |          |           |
| View                           | X                | X             | X                | X        | X         |
| Delete                         | X                |               |                  |          |           |
| Create Analysis Tasks          |                  | X             | X                | X        |           |
| <b>Threshold Configuration</b> |                  |               |                  |          |           |
| View                           | X                | X             | X                | X        | X         |
| Create Threshold Sets          |                  | X             |                  |          |           |
| Assign Threshold Sets          |                  | X             |                  |          |           |
| Delete Threshold Jobs          | X                |               |                  |          |           |
| <b>NCM Events</b>              |                  |               |                  |          |           |
| Launch NCM Event browser       | X                | X             | X                | X        | X         |
| <b>Notification Group</b>      |                  |               |                  |          |           |
| Rediscover                     | X                | X             |                  |          |           |
| Deploy                         |                  | X             |                  |          |           |
| Import                         |                  | X             | X                | X        |           |
| <b>Admin</b>                   |                  |               |                  |          |           |
| View Audit logs                | X                | X             | X                | X        | X         |
| Delete Audit logs              | X                |               |                  |          |           |
| Backup/Retrieve Backup         | X                |               |                  |          |           |
| SNMP Configuration Rights      | X                | X             |                  |          |           |
| License                        | X                |               |                  |          |           |
| <b>Notification Group</b>      |                  |               |                  |          |           |
| View                           | X                | X             | X                | X        | X         |
| Delete                         | X                |               |                  |          |           |

**Table 3-2** QPM Permissions Mapped to ACS Roles (continued)

| QPM Permissions | CiscoWorks Roles |               |                  |          |           |
|-----------------|------------------|---------------|------------------|----------|-----------|
|                 | System Admin     | Network Admin | Network Operator | Approver | Help Desk |
| Create          |                  | X             |                  | X        |           |
| NCM Integration | X                | X             |                  |          |           |

To modify global components, such as library components, global device settings, and so on, you must have appropriate permissions for the device group that contains the CiscoWorks Common Services server.

ACS roles have the following default permissions in QPM:

- System Admin
  - View all information in QPM
  - Make changes to devices in the QPM device inventory
  - Delete policy deployment jobs and logs
  - Launch Real Time Charts and Event Browsers
  - Delete Monitoring Tasks (under Historical Trends)
  - Delete Threshold Assignment jobs
  - Delete Audit logs
  - Create and retrieve backups of the QPM database
  - Configure SNMP Configuration Rights
  - Add/remove Licenses

System admin is the only user role that can delete logs, jobs, and reports in QPM.

- Network Admin
  - View all information in QPM
  - Make changes to devices in the QPM device inventory
  - Create and edit policies
  - Deploy policies on devices
  - Launch Real Time Charts and Event Browsers
  - Create Monitoring Tasks (under Historical Trends)
  - Create Threshold Sets and assign Threshold Sets to interfaces
  - Configure SNMP Configuration Rights

Network admin is the only user role that can deploy QoS policies on the devices in the network.

- Network Operator
  - View all information in QPM
  - Create and edit policies
  - Launch Real Time Charts and Event Browsers
  - Create Monitoring Tasks (under Historical Trends)
  - Create and run monitoring tasks
- Approver
  - View all information in QPM
  - Create and edit policies
  - Launch Real Time Charts and Event Browsers
  - Create Monitoring Tasks (under Historical Trends)
- Help Desk
  - View all information in QPM
  - Launch Real Time Charts and Event Browsers

If you intend to work with ACS device groups and user permissions, you must perform the setup configuration described in [Setting up ACS User Groups and Permissions for QPM, page 3-9](#).

ACS allows you to modify the default permission roles. For details about modifying permissions in ACS, see the ACS Online help.

After you change the permission roles, you must restart the ACS server.

If QPM is open, log out and log in again to QPM for the changes to take effect.

## Setting up ACS User Groups and Permissions for QPM

If you want to use ACS user groups and permissions for QPM, ACS must be installed on the network.

To work with ACS user groups and user permissions, you must register the QPM server with ACS and configure CiscoWorks Common Services. This enables you to use ACS authorization and authentication.

The following steps describe this process:

| Step   | Task                              | Procedure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Step 1 | Register the QPM server with ACS. | <ol style="list-style-type: none"> <li>1. Login to ACS server.</li> <li>2. In the navigation bar of the ACS Homepage, click <b>Network Configuration</b>.<br/><br/>The Network Configuration page appears with a list of the Network Device Groups (NDGs).<br/><br/>You can create your own QPM server Network Device Group, and add the QPM server as AAA client in it. The following steps describe this process.</li> <li>3. Under the Network Device Groups table, click <b>Add Entry</b>.</li> <li>4. In the Network Device Group Name box, type the name of the new NDG, for using QPM</li> <li>5. In the Key box, enter a key for the Network Device Group. The maximum length is 32 characters</li> <li>6. Click <b>Submit</b>.<br/><br/>The Network Device Groups table displays the new NDG.</li> <li>7. Click the name of the new NDG, and click <b>Add Entry</b> below the AAA Clients table</li> <li>8. In the Add AAA Client page, enter the QPM client details, such as Hostname, IP Address, and Key.</li> <li>9. Click <b>Submit + Apply</b>.</li> </ol> <p>If you do not want to create a new NDG for QPM, you can click the <b>Not Assigned</b> link in the NDG table and click <b>Add Entry</b> to define the QPM client in ACS.</p> <p>You can do this instead of performing Steps 1 through 7.</p> <p>For details about these steps, see the chapter <i>Network Configuration</i>, in the <i>ACS User Guide</i>.</p> |

| Step   | Task                                             | Procedure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Step 2 | Register ACS with QPM.                           | <ol style="list-style-type: none"> <li>1. Login to CiscoWorks in the CMF Mode.</li> <li>2. In the CiscoWorks homepage, select <b>Common Services &gt; Server &gt; Security &gt; AAA Mode Setup</b>.</li> <li>3. Click the <b>TACACS+</b> radio button</li> <li>4. Click <b>Change</b>.<br/>The Login Module Options window appears.</li> <li>5. Enter the ACS server IP/Name and Key (the same Key that you entered in <a href="#">Sub step 5 under Step 1</a>) in the corresponding fields, and click <b>OK</b>.<br/>The Login Module Change Summary page appears.</li> <li>6. Click <b>OK</b>.</li> <li>7. In the AAA Mode Setup page, click the <b>ACS</b> radio button.</li> <li>8. Enter the ACS sever details.</li> <li>9. Enter the login details including the Shared Secret Key (the same key that you entered in <a href="#">Sub step 5 under Step 1</a>).</li> <li>10. Check the <b>Register all installed applications with ACS</b> check box.</li> <li>11. Click the <b>HTTP</b> or <b>HTTPS</b> radio button to specify the current ACS administrative protocol.</li> <li>12. Click <b>Apply</b>.<br/>The Login Module Change Summary page appears with the following message:<br/>ACS Server Credentials updated successfully</li> <li>13. Close down all the QPM and CS Windows, restart the deamon manager.</li> </ol> <p>For details about these steps, see the section <i>Setting up the AAA mode</i> in the chapter <i>Configuring the Server</i>, in <i>User Guide for CiscoWorks Common Services 3.2</i>.</p> |
| Step 3 | Synchronize device groups in ACS Server with QPM | <ol style="list-style-type: none"> <li>1. In QPM, select <b>Devices &gt; Device Grouping &gt; Sync Privileges</b>.<br/>The Sync Privileges page appears.</li> <li>2. Check whether the Server mode is set to ACS, and click <b>Sync</b>.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Step   | Task                                                      | Procedure                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Step 4 | Define usernames and user groups and permissions, in ACS. | <ol style="list-style-type: none"> <li>1. In the navigation bar of the ACS homepage, click <b>User Setup</b>, and define usernames.</li> <li>2. In the navigation bar of the ACS homepage, click <b>Group Setup</b>, and define user groups and their permissions.</li> </ol> <p>For details about these steps, see the chapters <i>User Management</i> and <i>User Group Management</i>, in the ACS User Guide.</p> |

To change the authorization and authentication mode back to CiscoWorks permissions, you must configure CiscoWorks Common Services to use local authorization and authentication.

For details of this procedure, see the *User Guide for CiscoWorks Common Services 3.2*.

## Changing QPM Database Password

You can change the QPM database password through Common Services. To do this:

---

**Step 1** In Common Services, go to the root directory, and stop the Daemon Manager:

```
# /etc/init.d/dmgttd stop
```

**Step 2** Run the following commands to change the QPM DB password:

```
# cd /opt/CSCOpX/bin
# dbpasswd.pl dsn=qpm npwd=newpassword
```

where */opt/CSCOpX* is the Common Services installation directory, and *newpassword* is the new QPM database password

**Step 3** Run the following commands to update QPM with the new DB password:

```
# cd /opt/CSCOpX/MDC/qpm/bin
# perl QPM_DB_Updater.pl
```

The Daemon Manager starts automatically when you run the above command.

---





# CHAPTER 4

## Upgrading and Migrating QPM

---

This chapter contains the following topics:

- [Upgrading QPM 4.0 to QPM 4.1, page 4-1](#)
- [Migrating to a New QPM Server on Solaris, page 4-2](#)
- [Backing Up and Restoring CS and QPM Application Data, page 4-5](#)
- [Importing QPM Application Data, page 4-6](#)
- [Exporting QPM Application Data, page 4-7](#)

### Upgrading QPM 4.0 to QPM 4.1

QPM 4.1 supports upgrade from QPM 4.0.x.



#### Note

Before you upgrade from QPM 4.0.x to QPM 4.1, to ensure that there is no loss of historical monitoring data, you must:

- Stop the historical jobs that are currently being monitored and in the Running state. The historical jobs move from the Running to Stopped state, and then to the Finished state.
- Start the Upgrade after the historical jobs move to the Finished state.

After you successfully upgrade to QPM 4.1, you can create new monitoring jobs.

---

If you have installed QPM4.0.x on a custom path (a path other than the Common Services default installation directory), you must install the patch, QPMUpdater.tar over QPM4.0.x, before you proceed with the upgrade.

To install the patch (if you have installed QPM 4.0.x on a custom path):

---

**Step 1** From the QPM 4.1 DVD, copy QPMUpdater.tar to any directory on the machine you have installed QPM 4.0.x.

The QPMUpdater.tar is in the location,  
`//dvd/QPM_4_0_x_Patches/Solaris_custom_install_path_upgrade_patch.`

**Step 2** Go to the directory, and untar the file, QPMUpdater.tar

**Step 3** Run `per1 QPMUpdater_sol.p1` in the directory.



**Note** During this upgrade, [Step 6](#) of fresh installation is not available. Instead, the upgrade license is automatically installed.

The patch is installed over QPM 4.0.x.

You can now upgrade QPM 4.0.x to QPM 4.1.

To upgrade QPM 4.0.x to QPM 4.1:

**Step 1** Install CiscoWorks Common Services 3.2 over QPM 4.0.x.  
See [Installing Common Services on Solaris, page 2-2](#).  
The CS 3.0.5 data is migrated automatically to CS 3.2 during this process.

**Step 2** Install QPM 4.1.  
See [Installing QPM on Solaris, page 2-5](#) for details.  
QPM 4.0.x application data is migrated automatically to QPM 4.1 during this process.



**Note** While upgrading, the QPM application data is automatically backed up at `opt/CSCOPx/temp/QPMexport`, where `opt/CSCOPx` is the Common Services installation directory.

## Migrating to a New QPM Server on Solaris

You can migrate QPM application data from:

- A QPM 4.1 server to another QPM 4.1 server. See [Migrating QPM Information from One QPM 4.1 Server to Another, page 4-3](#) for details.
- A QPM 4.0 server to a QPM 4.1 server. See [Migrating QPM Information from a QPM 4.0 Server to a QPM 4.1 Server, page 4-3](#) for details.



**Note** You need to buy a new license for remote migration because the QPM license is a node-locked license. Also, the device limit with the new license should be equal to or more than the device limit supported by the old server.

## Migrating QPM Information from One QPM 4.1 Server to Another

This section describes how to migrate QPM 4.1 information to a new QPM 4.1 server that runs on Solaris.

To migrate QPM information to a new QPM 4.1 server:

- 
- Step 1** Take a backup of the QPM 4.1 application data, using the Common Services Backup utility (available in QPM 4.1 under **Administration > Configuration Backup**).  
See [Backing Up CS and QPM Application Data, page 4-5](#).
  - Step 2** Copy the backed up data to the new server.
  - Step 3** Install CiscoWorks Common Services 3.2 on the new server.
  - Step 4** Install QPM 4.1 on the new server.  
See [Installing QPM on Solaris, page 2-5](#) for details.
  - Step 5** Run the `restorebackup.pl` script (in Common Services) in the new server to restore the QPM data.  
See [Restoring CS and QPM Application Data, page 4-6](#).
- 

Before you begin to work with QPM, ensure that you have the appropriate permissions. See [Chapter 3, “Setting Up the QPM Server”](#) for details.

If you are working with ACS user permissions, register the new QPM server in CiscoWorks and ACS. See [Setting up ACS User Groups and Permissions for QPM, page 3-9](#) for details.

## Migrating QPM Information from a QPM 4.0 Server to a QPM 4.1 Server

This section describes how to migrate QPM 4.0 information to a new QPM 4.1 server that runs on Solaris.

To migrate QPM information from a QPM 4.0 server to a QPM 4.1 server:

- 
- Step 1** Take a backup of the CS 3.0.5 data, using the Common Services Backup utility (available in QPM 4.0 under **Administration > Configuration Backup**).  
See [Backing Up and Restoring CS and QPM Application Data, page 4-5](#) for details.
  - Step 2** Take a backup of QPM 4.0.x data.  
See [Exporting QPM Application Data, page 4-7](#) for details.
  - Step 3** Copy the backup data to the new server.
  - Step 4** Install CiscoWorks Common Services 3.2. on the new server.  
See [Installing Common Services on Solaris, page 2-2](#) for details.
  - Step 5** Install QPM 4.1 on the new server.  
See [Installing QPM on Solaris, page 2-5](#) for details.
  - Step 6** Run the `restorebackup.pl` script (in Common Services) to restore the CS data on the new server.  
See [Restoring CS and QPM Application Data, page 4-6](#) for details.
  - Step 7** Restore QPM application data.

See [Importing QPM Application Data, page 4-6](#) for details.

---

Before you begin to work with QPM, ensure that you have the appropriate permissions. See [Chapter 3, “Setting Up the QPM Server”](#) for details.

If you are working with ACS user permissions, register the new QPM server in CiscoWorks and ACS. See [Setting up ACS User Groups and Permissions for QPM, page 3-9](#) for details.

# Backing Up and Restoring CS and QPM Application Data

The following topics describe how to use the backup and restore utilities for QPM application data:

- [Backing Up CS and QPM Application Data, page 4-5](#)
- [Restoring CS and QPM Application Data, page 4-6](#)

## Backing Up CS and QPM Application Data

You can take a backup of the following:

- Common Services application data
- QPM application data
  - QPM database containing device and policy information
  - QPM monitoring jobs containing network traffic data
  - QPM reports
  - QPM configuration information

You can use the Backup utility when you want to:

- Migrate QPM 4.0.x application data to a QPM 4.1 server.
- Migrate QPM 4.1 application data from one QPM 4.1 server to another.
- Back up QPM application data.

**Note**

While migrating from QPM 4.0.x to QPM 4.1, the Backup and Restore utilities will restore only Common Services data on the QPM 4.1 server. To back up QPM 4.0.x application data, see [Exporting QPM Application Data, page 4-7](#).

You must specify the directory to which you want to back up the data.

To back up QPM application data:

- 
- Step 1** In QPM, go to **Administration > Configuration Backup**.  
You are redirected to the Backup Job page in CiscoWorks Common Services.
- Step 2** In the Backup Job page, enter the path of the Backup Directory, or click **Browse** to select the directory.
- Step 3** Click **Apply**.
-

## Restoring CS and QPM Application Data

Use the `restorebackup.pl` utility in Common Services to restore the QPM application data that was backed up.


**Note**

The backed up data is platform dependent. Therefore you cannot restore the QPM data onto a Solaris server if this data was backed up from a Windows server.

When you use the Restore utility, any existing QPM data is overwritten.

To restore the QPM application data:

- 
- Step 1** Log in as Super User.
- Step 2** Copy the backed up data to the new server.
- Step 3** In Common Services, go to the root directory, and enter the following command to stop all processes:
- ```
# /etc/init.d/dmgttd stop
```
- Step 4** Restore the data by entering the following command:
- ```
NMSROOT/bin/perl NMSROOT/bin/restorebackup.pl -d BKP [-t temporary_directory]
```
- where *BKP* is the backup directory.
- You must enter the absolute path for *BKP*. For example, if *BKP* is under */opt*, give the path as `NMSROOT/bin/perl NMSROOT/bin/restorebackup.pl -d /opt/BKP`.
- Step 5** Restart the processes by entering the following command:
- ```
# /etc/init.d/dmgttd start
```
- 


**Note**

While migrating from QPM 4.0.x to QPM 4.1, the Restore utility will restore only Common Services data on the QPM 4.1 server. To restore QPM application data, see [Importing QPM Application Data, page 4-6](#).

## Importing QPM Application Data

Use the `import.pl` utility to import any QPM 4.0.x application data into QPM 4.1.


**Note**

The exported data is platform dependent. Therefore you cannot import the QPM data onto a Solaris server if this data was exported from a Windows server.

When you use the Import utility, any existing QPM data is overwritten.

To import the application data:

---

**Step 1** Log in as Super User.

**Step 2** Go to the root directory and enter the following commands to start the Import utility:

```
# cd /opt/CSCOpX/MDC/qpm/bin
```

```
# /opt/CSCOpX/bin/perl import.pl export directory
```

where */opt/CSCOpX* is the default installation directory, and *export directory* is the directory that contains the exported data.

---

This utility stops CiscoWorks services, and imports the QPM data. When the import process completes, the CiscoWorks services are restarted.

If you export the QPM 4.0.x data in ACS mode, and import the data in QPM 4.1 Non-ACS mode, you may not be able to login to QPM 4.1 after the import. This is because the login mode automatically changes to ACS mode in QPM 4.1.

So, after the import, you must reset the login mode of QPM 4.1 to Non-ACS. See [Obtaining Debug Information for Cisco Technical Support, page A-3](#) for information on how to reset the login mode.

## Exporting QPM Application Data

You can export the following QPM 4.0.x application data during an upgrade to QPM 4.1:

- QPM database containing device and policy information
- QPM monitoring jobs containing network traffic data
- QPM reports
- QPM configuration information

Use the Export utility when you want to migrate and upgrade QPM 4.0.x application data to QPM 4.1.

You need to specify the destination folder to which you want to export the application data.

To export QPM application data from QPM 4.0.x:

---

**Step 1** Log in as Super User.

**Step 2** Go to the root directory and enter the following commands to start the Export utility:

```
# cd /opt/CSCOpX/MDC/qpm/bin
```

```
# /opt/CSCOpX/bin/perl export.pl destination directory
```

where */opt/CSCOpX* is the default installation directory, and *destination directory* is the directory to which QPM exports the data.

---

This utility stops CiscoWorks services, and exports the QPM information to the specified destination folder.

After the export process has completed, the CiscoWorks services are restarted.





# APPENDIX **A**

## Troubleshooting QPM Installation

---

The following topics can help you troubleshoot problems you might encounter while installing QPM, or starting QPM:

- [Troubleshooting Problems During Installation, page A-1](#)
- [Troubleshooting Problems Starting Common Services, page A-2](#)
- [Troubleshooting Problems Starting QPM, page A-2](#)
- [Obtaining System Status Information for Troubleshooting, page A-3](#)

## Troubleshooting Problems During Installation

**Table A-1**      *Installation Error Messages*

<b>Message</b>	<b>Reason for Message</b>	<b>User Action</b>
License Validation Failed Or No Valid License Found	The license file you selected during installation is not valid.	Quit the current installation, and reinstall with proper license file.
Evaluation license expired.	The QPM 4.1 Evaluation License expired.	Install the new license in QPM through Administration > License > Install License option
Getting License Device Limit Failed	The license file you selected during installation is not valid.	Quit the current installation, and reinstall QPM 4.1.

# Troubleshooting Problems Starting Common Services

## Port Conflict

**Problem**—You cannot start Common Services because port 1741 that is used by Common Services, is in use by another application.

**Recommended Action**—Try the following:

- Restart the QPM server.
- To run CiscoWorks, enter `http://QPMinstall:1741/login.html`, where *QPMinstall* is the name or IP address of the QPM server.

If ports are still in use, open the `JbossStdout.log` file and look for the error:

```
java.rmi.server.ExportException:Port already in use:port-number
```

Check whether the listed port is in use by another application. If so, stop the other application or change the port it is using.

# Troubleshooting Problems Starting QPM

QPM might not start for any of the following reasons:

- [QPM Server Does Not Meet System Requirements, page A-2](#)
- [Incorrect User Permissions, page A-2](#)
- [Changed Database Password, page A-2](#)
- [Unknown Cause, page A-3](#)

## QPM Server Does Not Meet System Requirements

**Problem**—QPM startup and performance might be slow, or QPM might not work at all.

**Recommended Action**—Install QPM on a server that meets system requirements.

## Incorrect User Permissions

**Problem**—Many buttons in the user interface are grayed out because you might not have the correct user permissions to perform those tasks.

**Recommended Action**—Verify your user permissions in the CiscoWorks desktop (**Server > Security**), or in ACS. This depends on the method you use for user authentication.

For more information about working with ACS user permissions, see [Setting up ACS User Groups and Permissions for QPM, page 3-9](#).

You might also encounter display problems if the browser version on the client system does not meet the client system requirements.

## Changed Database Password

**Problem**—If you change the QPM database password in CiscoWorks Common Services, and then try to start QPM without restarting the QPM server, the connection to the database is lost.

**Recommended Action**—After changing the QPM database password, restart the QPM server.

### Unknown Cause

**Problem** You are not able to launch QPM for any reasons other than those mentioned above.

**Recommended Action**—Restart the QPM server.

## Obtaining Information for Troubleshooting and Cisco Technical Support

The following topics describe how to obtain information for troubleshooting and Cisco Technical Support:

- [Obtaining System Status Information for Troubleshooting, page A-3](#)
- [Obtaining Debug Information for Cisco Technical Support, page A-3](#)

### Obtaining System Status Information for Troubleshooting

To send the diagnostics results to a TAC representative, you can run the MDCSupport utility. This utility collects configuration and system information in a tar file, called `mdcsupportinformation.tar`.

The MDC Support Information file includes any problems that occurred during the installation or while running QPM. You can send this file to the Cisco Technical Assistance Center (TAC) support staff to assist in diagnosing the problems.

To send the diagnostics results to a TAC representative:

---

**Step 1** At the command line of `/opt/CSCOpX/MDC/bin` (where `/opt/CSCOpX` is the default installation directory), enter **mdcsupport** and press **Enter**.

A tar file named `mdcsupportinformation.tar` is created under `/opt/CSCOpX/MDC/etc`.

**Step 2** Send this file to the TAC representative as an Email.

---

### Obtaining Debug Information for Cisco Technical Support

If Cisco Technical Support requests that you gather additional debug information in the trace files, you can set the QPM trace logging mode to collect the information.

Collecting debug information reduces the performance of your server, and the collected data can only be interpreted by the Cisco Engineering Team.

Owing to this, do not collect debug information unless requested. After you have collected the information, reset the logging mode to only collect informational messages.

To set the QPM trace logging mode for collecting information:

---

**Step 1** Go to the `/opt/CSCOpX/MDC/qpm/bin` where `/opt/CSCOpX` is the default installation directory, and enter this command to begin collecting debug information:

```
setqpmloggermode -debug
```

Wait for five minutes before proceeding to the next step. This is to allow time for the system to prepare for collecting debug messages.

- Step 2** Repeat the activities you were doing in QPM that led to the problems you encountered.
- Step 3** When sufficient debug information has been collected under */opt/CSCOPx/MDC/log*, compress the *log* folder (to *.zip* or *.tar*), and email it to your Cisco Technical Support representative.
- Step 4** Enter the following command to reset the logging mode so that only informational messages are collected (the default behavior):

```
setqpmloggermode -info
```

---



## INDEX

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### A

- ACS (Cisco Access Control Server)
  - for user authentication in QPM [1-1](#)
  - user permissions [3-5](#)
- audience for this document [1-v](#)
- authentication
  - using CiscoWorks for [3-2](#)

---

### C

- cautions
  - significance of [1-v](#)
- CiscoWorks Common Services, See Common Services [1-1](#)
- CiscoWorks user permissions and authentication [3-2](#)
- Common Services
  - and QPM [1-1](#)
  - install before QPM [1-4](#)
  - troubleshooting problems starting [A-2](#)

---

### D

- debug information, obtaining [A-3](#)
- Diagnostic Tool
  - for obtaining system status information [A-3](#)
- documentation [1-vi](#)
  - audience for this [1-v](#)
  - related to this product [1-vii](#)
  - typographical conventions in [1-v](#)

---

### E

- exporting
  - from QPM 4.0 on Solaris [4-5](#)

---

### H

- hardware requirements, See system requirements

---

### I

- importing
  - to QPM 4.0 on Solaris [4-6](#)
- installing
  - on Solaris
    - order of [2-2](#)
    - ports used by QPM [2-1](#)
    - QPM procedure [2-5](#)
  - prerequisites [1-3](#)
  - recommended paths [1-5](#)
  - system requirements [1-2](#)
  - troubleshooting [A-1](#)
  - upgrading from QPM 3.2 or 3.2.x [4-1](#)
  - verifying [2-7](#)

---

### M

- migrating QPM 4.0 data
  - on Solaris [4-1](#)

---

### P

- ports used by QPM

on Solaris [2-1](#)

ACS [3-5](#)

CiscoWorks [3-2](#)

using ACS device groups and [3-9](#)

working with [3-1](#)

---

## Q

QPM, overview of [1-1](#)

QPM 4.0 Export Utility

on Solaris [4-5](#)

QPM 4.0 Import Utility

on Solaris [4-6](#)

QPM database

exporting on Solaris [4-5](#)

importing on Solaris [4-6](#)

---

## S

setqpmloggermode command [A-3](#)

setting trace logging mode [A-3](#)

software requirements, See system requirements

system requirements [1-2](#)

---

## T

trace logging mode, setting [A-3](#)

troubleshooting [A-1](#)

obtaining debug information [A-3](#)

obtaining system status information using Diagnostic Tool [A-3](#)

problems installing QPM [A-1](#)

problems starting Common Services [A-2](#)

problems starting QPM [A-2](#)

typographical conventions in this document [1-v](#)

---

## U

uninstalling QPM

on Solaris [2-6](#)

upgrading

QPM 3.2 or 3.2.x to 4.0 [4-1](#)

user permissions

---

## V

verifying QPM installation [2-7](#)