



Installation Guide for QoS Policy Manager 3.1

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Preface

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. You should know how to use Microsoft Windows 2000.

Conventions

This document uses the following conventions:

Item	Convention
Commands and keywords	boldface font
Variables for which you supply values	<i>italic font</i>
Displayed session and system information	screen font
Information you enter	boldface screen font
Variables you enter	<i>italic screen font</i>

Item	Convention
Menu items and button names	boldface font
Selecting a menu item in paragraphs	Option > Network Preferences
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 3.1</i>	<ul style="list-style-type: none"> • Printed document that was included with the product. • On Cisco.com: <ol style="list-style-type: none"> a. Log into Cisco.com. b. Select Products & Services > Network Management CiscoWorks > CiscoWorks QoS Policy Manager > Technical Documentation > Release and Installation Notes.
<i>Quick Start Guide for CiscoWorks QoS Policy Manager 3.1</i>	<ul style="list-style-type: none"> • Printed document that was included with the product. • On Cisco.com: <ol style="list-style-type: none"> a. Log into Cisco.com. b. Select Products & Services > Network Management CiscoWorks > CiscoWorks QoS Policy Manager > Technical Documentation > Quick Start.
<i>Installation Guide for CiscoWorks QoS Policy Manager 3.1</i>	<ul style="list-style-type: none"> • PDF on the product CD-ROM. • On Cisco.com: <ol style="list-style-type: none"> a. Log into Cisco.com. b. Select Products & Services > Network Management CiscoWorks > CiscoWorks QoS Policy Manager > Technical Documentation > Installation Guide Books. • Printed document available by order (part number DOC-7815484=).¹

Table 1 Product Documentation (continued)

Document Title	Available Formats
<i>Getting Started Guide for CiscoWorks QoS Policy Manager 3.1</i>	<ul style="list-style-type: none"> • PDF on the product CD-ROM and from the CiscoWorks QoS Policy Manager online help. • On Cisco.com: <ol style="list-style-type: none"> a. Log into Cisco.com. b. Select Products & Services > Network Management CiscoWorks > CiscoWorks QoS Policy Manager > Technical Documentation > Getting Started Guide Books. • Printed document available by order (part number DOC-7815533=).¹
<i>User Guide for CiscoWorks QoS Policy Manager 3.1</i>	<ul style="list-style-type: none"> • PDF on the product CD-ROM and from the CiscoWorks QoS Policy Manager online help. • On Cisco.com: <ol style="list-style-type: none"> a. Log into Cisco.com. b. Select Products & Services > Network Management CiscoWorks > CiscoWorks QoS Policy Manager > Technical Documentation > User Guide Books. • Printed document available by order (part number DOC-7815532=).¹
<i>Supported Devices for CiscoWorks QoS Policy Manager 3.1</i>	<ol style="list-style-type: none"> 1. Log into Cisco.com. 2. Select Products & Services > Network Management CiscoWorks > CiscoWorks QoS Policy Manager > Technical Documentation > Device Support Tables.
Context-sensitive online help	<ul style="list-style-type: none"> • Select an option from the navigation tree, then click Help. • Click the Help button in the dialog box.

1. See the “[Obtaining Documentation](#)” section on page 9.

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.

QPM runs on the CiscoWorks Common Services Server. Documentation for CiscoWorks Common Services is available on Cisco.com at http://www.cisco.com/en/US/products/sw/cscowork/ps3996/tsd_products_support_series_home.html?q=

Obtaining Documentation

Cisco provides several ways to obtain documentation, technical assistance, and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation on the World Wide Web at this URL:

<http://www.cisco.com/univercd/home/home.htm>

You can access the Cisco website at this URL:

<http://www.cisco.com>

International Cisco websites can be accessed from this URL:

http://www.cisco.com/public/countries_languages.shtml

Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which may have shipped with your product. The Documentation CD-ROM is updated regularly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual or quarterly subscription.

Registered Cisco.com users can order a single Documentation CD-ROM (product number DOC-CONDOCCD=) through the Cisco Ordering tool:

http://www.cisco.com/en/US/partner/ordering/ordering_place_order_ordering_tool_launch.html

All users can order monthly or quarterly subscriptions through the online Subscription Store:

<http://www.cisco.com/go/subscription>

Ordering Documentation

You can find instructions for ordering documentation at this URL:

http://www.cisco.com/univercd/cc/td/doc/es_inpk/pdi.htm

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Networking Products Marketplace:

<http://www.cisco.com/en/US/partner/ordering/index.shtml>

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, U.S.A.) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

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You can e-mail your comments to bug-doc@cisco.com.

You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems
Attn: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Obtaining Technical Assistance

Cisco provides Cisco.com, which includes the Cisco Technical Assistance Center (TAC) website, as a starting point for all technical assistance. Customers and partners can obtain online documentation, troubleshooting tips, and sample configurations from the Cisco TAC website. Cisco.com registered users have complete access to the technical support resources on the Cisco TAC website, including TAC tools and utilities.

Cisco.com

Cisco.com offers a suite of interactive, networked services that let you access Cisco information, networking solutions, services, programs, and resources at any time, from anywhere in the world.

Cisco.com provides a broad range of features and services to help you with these tasks:

- Streamline business processes and improve productivity
- Resolve technical issues with online support
- Download and test software packages
- Order Cisco learning materials and merchandise
- Register for online skill assessment, training, and certification programs

To obtain customized information and service, you can self-register on Cisco.com at this URL:

<http://tools.cisco.com/RPF/register/register.do>

Technical Assistance Center

The Cisco TAC is available to all customers who need technical assistance with a Cisco product, technology, or solution. Two types of support are available: the Cisco TAC website and the Cisco TAC Escalation Center. The type of support that you choose depends on the priority of the problem and the conditions stated in service contracts, when applicable.

We categorize Cisco TAC inquiries according to urgency:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration. There is little or no impact to your business operations.
- Priority level 3 (P3)—Operational performance of the network is impaired, but most business operations remain functional. You and Cisco are willing to commit resources during normal business hours to restore service to satisfactory levels.
- Priority level 2 (P2)—Operation of an existing network is severely degraded, or significant aspects of your business operations are negatively impacted by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.
- Priority level 1 (P1)—An existing network is “down,” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Cisco TAC Website

The Cisco TAC website provides online documents and tools to help troubleshoot and resolve technical issues with Cisco products and technologies. To access the Cisco TAC website, go to this URL:

<http://www.cisco.com/tac>

All customers, partners, and resellers who have a valid Cisco service contract have complete access to the technical support resources on the Cisco TAC website. Some services on the Cisco TAC website require a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to this URL to register:

<http://tools.cisco.com/RPF/register/register.do>

If you are a Cisco.com registered user, and you cannot resolve your technical issues by using the Cisco TAC website, you can open a case online at this URL:

<http://www.cisco.com/tac/caseopen>

If you have Internet access, we recommend that you open P3 and P4 cases online so that you can fully describe the situation and attach any necessary files.

Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses priority level 1 or priority level 2 issues. These classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer automatically opens a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to this URL:

<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>

Before calling, please check with your network operations center to determine the Cisco support services to which your company is entitled: for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). When you call the center, please have available your service agreement number and your product serial number.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- The *Cisco Product Catalog* describes the networking products offered by Cisco Systems, as well as ordering and customer support services. Access the *Cisco Product Catalog* at this URL:

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- Cisco Press publishes a wide range of networking publications. Cisco suggests these titles for new and experienced users: *Internetworking Terms and Acronyms Dictionary*, *Internetworking Technology Handbook*,

Internetworking Troubleshooting Guide, and the *Internetworking Design Guide*. For current Cisco Press titles and other information, go to Cisco Press online at this URL:

<http://www.ciscopress.com>

- *Packet* magazine is the Cisco quarterly publication that provides the latest networking trends, technology breakthroughs, and Cisco products and solutions to help industry professionals get the most from their networking investment. Included are networking deployment and troubleshooting tips, configuration examples, customer case studies, tutorials and training, certification information, and links to numerous in-depth online resources. You can access *Packet* magazine at this URL:

<http://www.cisco.com/go/packet>

- Internet Protocol Journal is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

http://www.cisco.com/en/US/about/ac123/ac147/about_cisco_the_internet_protocol_journal.html

- Training—Cisco offers world-class networking training. Current offerings in network training are listed at this URL:

http://www.cisco.com/en/US/learning/le31/learning_recommended_training_list.html



Introduction

This chapter contains the following topics:

- [Overview of QPM, page 1-1](#)
- [Hardware and Software Requirements, page 1-2](#)
- [Preparing for Installation, page 1-4](#)
- [Installation Sequence to Upgrade from QPM 3.0.x, page 1-4](#)

Overview of QPM

QoS Policy Manager (QPM) lets you analyze traffic throughput by application or service class, and then leverage that information to configure QoS policies to differentiate traffic and to 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, thus making more efficient and economical use of your existing network resources. 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 facilitates management of large networks by providing advanced user authorization capabilities through integration with Cisco Access Control Server (ACS).

QPM runs on the CiscoWorks Common Services 1.0 server, which can be installed as a standalone server, or as an add-on to CD One 5th Edition. CiscoWorks Common Services 1.0 provides the infrastructure required by QPM to run from the CiscoWorks desktop environment, and also provides management of user roles and privileges, allowing you to control who gets access to specific tasks in QPM.

Hardware and Software Requirements

It is recommended to use a dedicated server for QPM to realize maximum performance.

Do not install Common Services 1.0 or QPM CDs on a Windows server running any of the following services:

- Terminal server
- Primary domain controller
- Backup domain controller

Do not install QPM on the same server as CiscoWorks Management Center for Routers (Router MC).

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



Caution

If the QPM 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

Hardware	<ul style="list-style-type: none"> • IBM PC-compatible computer with Pentium IV, 1 GHz or faster processor.
Memory (RAM)	<ul style="list-style-type: none"> • 1 GB minimum

Table 1-1 Server Hardware and Software Requirements (continued)

Available disk drive space	<ul style="list-style-type: none"> 7 GB minimum. (The available disk space required depends on the tasks you want to do in QPM.) <p>Note CiscoWorks Common Services 1.0 installation requires 2 GB free disk space, therefore you should ensure that you have a minimum of 9 GB free disk space before you install CiscoWorks Common Services 1.0.</p>
Software	<p>One of the following:</p> <ul style="list-style-type: none"> Windows 2000 Professional with Service Pack 2. Windows 2000 Server with Service Pack 2.
Browser	<ul style="list-style-type: none"> Microsoft Internet Explorer 5.5 or higher.

Table 1-2 shows the requirements for client systems.

Table 1-2 Client Requirements

Hardware	<ul style="list-style-type: none"> IBM PC-compatible computer with Pentium, 300 MHz, or faster processor.
Operating System	<p>One of the following:</p> <ul style="list-style-type: none"> Windows 98 Windows NT 4.0 Workstation Windows NT 4.0 Server Windows 2000 Professional Windows 2000 Server
Browser	<ul style="list-style-type: none"> Microsoft Internet Explorer 5.5 or higher

Preparing for Installation

**Note**

If you are upgrading from QPM 3.0.x, see [Installation Sequence to Upgrade from QPM 3.0.x, page 1-4](#) for the recommended installation sequence.

Before you install QPM, ensure the following:

- CiscoWorks Common Services 1.0 is already installed on the machine on which you are going to install QPM. (CiscoWorks Common Services 1.0 installs the CiscoWorks desktop, if is not already installed.)
- The machine on which you are going to install QPM meets the requirements for running QPM. See [Hardware and Software Requirements, page 1-2](#).

**Note**

You can install QPM 3.1 on a machine that has QPM 2.x installed. You do not need to uninstall QPM 2.x.

If you want to use your QPM 2.1.x policy databases in QPM 3.1, you must first export them from QPM 2.1.x, using the QPM 2.1.x export utility. See [Appendix B, “Exporting QPM 2.1.x Databases”](#) for more information.

Installation Sequence to Upgrade from QPM 3.0.x

If QPM 3.0.x is already installed on the server, use the following installation sequence to upgrade from QPM 3.0.x:

1. (Recommended) Export QPM database and configuration information from QPM 3.0.x using the export.exe utility on the QPM 3.1 installation CD. See [Exporting QPM 3.x Information, page 3-1](#) for details.
2. (Required) Uninstall QPM 3.0.x.
3. (Required) Install QPM 3.1. See [Installing QPM, page 2-1](#) for details.

4. QPM permission roles have changed in QPM 3.1. Before you begin to work with QPM, ensure that you have the appropriate permissions. See [Working with User Permissions, page A-1](#) for details.

If you are working with ACS user permissions, register the new QPM user permissions in CiscoWorks and ACS. See [Updating QPM 3.1 User Permissions in ACS, page 2-6](#) for details.

5. (Optional) Import QPM 3.0.x data into QPM 3.1 using the import.exe utility on the QPM 3.1 installation CD, or on the QPM server. See [Importing QPM 3.x Information, page 3-3](#) for details.

**Note**

Imported QPM 3.0.x IP telephony templates will overwrite any QPM 3.1 updated templates with the same name. To reinstall the updated templates after import, delete the old templates, and rerun the IP Telephony wizard. For details of changes to IP Telephony templates in QPM 3.1, see the Release Notes for QPM 3.1.



Installing and Uninstalling QPM

This chapter contains the following topics:

- [Installing QPM, page 2-1](#)
- [Working with ACS Device Groups and User Permissions, page 2-4](#)
- [Verifying QPM Installation, page 2-7](#)
- [Troubleshooting QPM Installation, page 2-8](#)
- [Uninstalling QPM, page 2-13](#)

Installing QPM

QPM is automatically installed in the CiscoWorks Common Services 1.0 installation folder.

The installation process also copies the QPM 3.1 export and import utilities to the QPM server. For more information about these utilities, see [Chapter 3, “Migrating QPM Information.”](#)

Before You Begin

- Ensure that CiscoWorks Common Services 1.0 is installed on your computer before you begin to install QPM.

CiscoWorks Common Services 1.0 ships with a 90-day evaluation license that you can use to install the software. If you install CiscoWorks Common Services 1.0 without a license, you will still be able to start QPM. Please refer to the Supplemental License Agreement in the *Quick Start Guide for QoS Policy Manager* for usage restrictions for QPM.

- If you are upgrading from QPM 3.0.x, see [Installation Sequence to Upgrade from QPM 3.0.x, page 1-4](#).

Procedure

Step 1 Insert the QoS Policy Manager CD-ROM into your CD-ROM drive.



Note We do not recommend installing QPM from a network CD-ROM drive.

Step 2 Select **Start>Run**, and enter `d:\QPM-K9.exe`, where *d* is your CD-ROM drive.

If QPM 3.0.x is already installed on the computer, installation will not proceed, and the following message appears:


```
QPM has detected QPM version 3.0.x already installed on this machine.
Use the following installation sequence to upgrade from QPM 3.0.x:
1. (Recommended) Export QPM database and configuration information
from QPM 3.0.x using the export.exe utility on the QPM 3.1
installation CD.
2. (Required) Uninstall QPM 3.0.x.
3. (Required) Install QPM 3.1.
4. (Optional) Import QPM 3.0.x data into QPM 3.1 using the import.exe
utility on the QPM 3.1 installation CD.
```

For more information about the export and import utilities, see [Chapter 3, “Migrating QPM Information.”](#)

If QPM 3.0 is not installed on the computer, the Welcome window opens.

Step 3 Click **Next** to continue. The Select Program Folder window opens.

Step 4 In the Select Program Folder window, specify or select a program group, if you do not want to use the default name. Click **Next**.

- Step 5** Enter the password for the QoS Policy Manager Database, and confirm your password. The QPM database password is required internally by the system to ensure database security. You do not need to use the password. You can change the password through Common Services 1.0 in the CiscoWorks desktop. Select **VPN/Security Management Solution > Administration > Configuration > Database Credentials**.
- Click **Next**.
- Step 6** In the Setup Type window, enter the percentage of disk space to keep free for backup purposes on the current partition. If you intend to perform QPM monitoring tasks, we recommend that you keep a larger amount of disk space free for backup purposes. When you run out of available disk space, QPM notifies you and you can compact your database using the QPM Rebuild Database utility on the QPM server. Before using this utility you must back up your QPM database.
- Click **Next**.
- Step 7** Review your selections in the Start Copying Files window. If you want to make changes, click **Back** until you come to the window that has selections you want to change.
- When you have the selections you want, click **Next** to start installing QPM on your system. This process takes a few minutes.
- After QPM is installed, the Wizard Complete window opens.
- Step 8** Select whether you want to restart your computer now or later, and click **Finish** to complete the setup. You must restart your computer before you begin to work with QPM.
- The QPM services start automatically whenever you start your computer.
-  **Note** Remove the QPM CD-ROM before you restart your computer.
- Step 9** If you intend to work with ACS device groups and user permissions, configure settings in ACS and CiscoWorks as described in [Working with ACS Device Groups and User Permissions, page 2-4](#). For more information about QPM user permissions, see [Appendix A, “QPM User Permissions.”](#)

Step 10 After setup is complete, verify the QPM installation. See [Verifying QPM Installation, page 2-7](#) for details.

If you encounter problems starting QPM, see [Troubleshooting QPM Installation, page 2-8](#).

Working with ACS Device Groups and User Permissions

The following topics describe how to configure CiscoWorks Common Services 1.0 to use ACS authorization and authentication on a new QPM 3.1 installation, and after upgrading from QPM 3.0.x.

- [Setup for Working with ACS Device Groups and User Permissions, page 2-4](#)
- [Updating QPM 3.1 User Permissions in ACS, page 2-6](#)

Setup for Working with ACS Device Groups and User Permissions

If you want to use ACS device groups and permissions for QPM, ACS 3.1 must be installed on the network.

To work with ACS device groups and user permissions, you must register the QPM server with ACS and configure CiscoWorks Common Services 1.0 to use ACS authorization and authentication.

Step	Task	Procedure
Step 1	Define the QPM server in ACS.	<ol style="list-style-type: none"> 1. In ACS, select Network Configuration. 2. Add the QPM server to a device group, or add it as an individual device, depending on the ACS setup. 3. Enter the ACS shared key in the Key field.

Step	Task	Procedure
Step 2	Define the Login Module in CiscoWorks as TACACS+.	<ol style="list-style-type: none"> 1. In the CiscoWorks desktop, select Server Configuration > Setup > Security > Select Login Module. 2. Select TACACS+, if it is not already selected. Click Next. 3. Enter the ACS server name. You do not need to enter a key. 4. Click Finish.
Step 3	Synchronize CiscoWorks Common Services 1.0 with the ACS server configuration.	<ol style="list-style-type: none"> 1. In the CiscoWorks desktop, select VPN/Security Management Solution > Administration > Configuration > AAA Server. 2. In the AAA Server Information dialog box, click Synchronize. 3. Add Login details. Enter the ACS shared key that you defined for QPM server in ACS. 4. Click Register. 5. Select qpm, and click the Add button, to add the QPM permission roles in ACS. Click OK. 6. Click Finish.
Step 4	Define usernames, device groups and user groups in ACS.	<ol style="list-style-type: none"> 1. In ACS, select User Setup to define usernames. 2. Select Group Setup to define permissions for device groups. <p>Note You can define permissions for all network device groups, or per device group. This means that roles can be defined for all devices, or per network device group.</p>

**Note**

To change the authorization and authentication mode back to CiscoWorks permissions, you must configure CiscoWorks Common Services 1.0 to use local authorization and authentication. For details of this procedure, see the user guide or online help for CiscoWorks Common Services 1.0.

For more information about configuring ACS authorization authentication, see the user guide or online help for CiscoWorks Common Services 1.0.

Updating QPM 3.1 User Permissions in ACS

The user permissions for QPM 3.1 have been changed. See [ACS User Permissions, page A-5](#) for details of the new permissions.

If QPM 3.0.x was previously installed on the QPM 3.1 server, and you worked with ACS device groups and user permissions, you must update ACS with the new QPM 3.1 user permissions.



Note

If QPM 3.1 is installed on a different server from QPM 3.0.x, follow the procedure in [Setup for Working with ACS Device Groups and User Permissions, page 2-4](#).

Step	Task	Procedure
Step 1	Remove the old QPM permission roles from the ACS server.	<ol style="list-style-type: none"> 1. In the ACS server select Shared Profile Components > CiscoWorks QPM. 2. Select each QPM user role and delete.
Step 2	Unregister the old QPM permission roles in CiscoWorks.	<ol style="list-style-type: none"> 1. In the CiscoWorks desktop, login with username admin and password admin. 2. Select VPN/Security Management Solution > Administration > Configuration > AAA Server. 3. In the AAA Server Information dialog box, click Unregister. 4. Log out of the CiscoWorks desktop.

Step	Task	Procedure
Step 3	Add the new QPM permission roles to ACS	<ol style="list-style-type: none"> 1. Log into CiscoWorks with username admin and password admin. 2. Select VPN/Security Management Solution > Administration > Configuration > AAA Server. 3. In the AAA Server Information dialog box, click Synchronize. 4. Add Login details. Enter the ACS shared key that you defined for QPM server in ACS. 5. Click Register. 6. Select qpm, and click the Add button, to add the QPM permission roles in ACS. Click OK. 7. Click Finish. 8. Log out of CiscoWorks.
Step 4	Define usernames, device groups and user groups in ACS.	<ol style="list-style-type: none"> 1. In ACS, select User Setup to define usernames. 2. Select Group Setup to define permissions for device groups. <p>Note You can define permissions for all network device groups, or per device group. This means that roles can be defined for all devices, or per network device group.</p>

Verifying QPM Installation

QoS Policy Manager is accessed from the CiscoWorks desktop.

Procedure

- Step 1** In your web browser, start CiscoWorks. The default URL is `http://<QPMinstall>:1741`, where `<QPMinstall>` is the name of the computer with the QPM installation.

The CiscoWorks desktop is displayed.



Note The first time you start CiscoWorks on a CiscoWorks server or a client machine, the Java Runtime Environment is automatically installed.

Step 2 Verify on the front page that Java, 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 navigation tree appears in the left pane.

Step 4 Click **QoS Policy Manager** in the navigation tree.

Step 5 Click **QPM** under the QoS Policy Manager drawer.
A Security Alert window opens. Click **Yes** to proceed.
QPM opens in a separate browser window.

If you encounter problems starting QPM, see [Troubleshooting QPM Installation, page 2-8](#), for possible causes and solutions.

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 2-9](#)
- [Troubleshooting Problems Starting Common Services 1.0, page 2-9](#)
- [Troubleshooting Problems Starting QPM, page 2-10](#)
- [Obtaining System Status Information for Troubleshooting, page 2-12](#)

Troubleshooting Problems During Installation

Problem—Installation process fails. An error message appears telling you that you cannot install QPM because the “qpm” installation subdirectory already exists under the Common Services installation directory.

Explanation—The “qpm” installation directory was not completely deleted during a previous uninstall operation.

Recommended Action—Delete the “qpm” installation directory and start the installation process again. If some of the files are locked and cannot be deleted, restart the computer, and then delete.

Troubleshooting Problems Starting Common Services 1.0

Common Services 1.0 might not start for any of the following reasons:

- [Terminal Services is Enabled, page 2-9](#)
- [Port Conflict, page 2-9](#)
- [Changing Windows Account, page 2-10](#)

Terminal Services is Enabled

Problem—If Terminal Services is enabled, Common Services 1.0 will not work. If you installed Common Services 1.0 on a machine where Terminal Services was enabled, and then disabled before you uninstalled Common Services 1.0, Common Services 1.0 might still not work.

Recommended Action—Do not enable Terminal Services before or after installation of Common Services 1.0.

Port Conflict

Problem—You cannot start Common Services 1.0 because port 1741, which is used by Common Services 1.0, 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.

Changing Windows Account

Problem—If you install Common Services 1.0 and QPM using a specific admin account/password, everything works as planned. However, if you change the password to this Windows account, then installed services fail to start.

Recommended Action—Change the password for all services to match the current password of the account which they were installed. Common Services 1.0 includes Tomcat, fms, lm, and da-framework services.

Troubleshooting Problems Starting QPM

QPM might not start for any of the following reasons:

- [QPM Server Does Not Meet System Requirements, page 2-10](#)
- [Old Version of Java Plug-In, page 2-10](#)
- [Incorrect User Permissions, page 2-11](#)
- [Changed Database Password, page 2-11](#)
- [Unknown Cause, page 2-11](#)

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.

Old Version of Java Plug-In

Problem—QPM might not start if there is a older version of the Java plug-in than the one required by QPM.

Recommended Action—Uninstall the old Java plug-in. When you start CiscoWorks, it automatically installs the new Java plug-in.

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 Configuration > Setup > Security**), or in ACS (depending on the method you are using for user authentication). For more information about working with ACS user permissions, see [Working with ACS Device Groups and User Permissions, page 2-4](#).



Note 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 and then try to start QPM without restarting the QPM server, the connection to the database is lost.

Recommended Action—Restart the QPM server after changing the QPM database password.

Unknown Cause

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 2-12](#)
- [Obtaining Debug Information for Cisco Technical Support, page 2-12](#)

Obtaining System Status Information for Troubleshooting

If QPM does not run after installation, or if unusual exceptions occur or error windows are displayed while running QPM, you can obtain system status information by running the QPM Diagnostic Tool on the QPM server. This tool generates a report in a browser window of the system status with its diagnostics and suggests possible solutions where applicable.

If you want to send the diagnostics results to a TAC representative, you can run the MDCSupport.exe command-line utility, which collects configuration and system information in a zip file called MDCSupportInformation.zip. This zip file includes any problems that occurred during the installation or the running of QPM. You can send this file to the Cisco Technical Assistance Center (TAC) support staff to assist in diagnosing the problems.

Procedure

- Step 1** On the QPM server, select **Start > Programs > Cisco Systems > QoS Policy Manager > Diagnostic Tool**.

A report is generated and displayed in a browser window for you to view.

- Step 2** To send the diagnostics results to a TAC representative:

- a. At the command line, enter **MDCSupport.exe** and press **Enter**.

A zip file named MDCSupportInformation.zip is created under c:\Program Files\CSCOpX\MDC\etc.

- b. Email this file to the TAC representative.
-

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. Because collecting debug information will reduce the performance of your server, and the collected data can only be interpreted by Cisco, do not collect debug information unless requested. After you have collected the information, reset the logging mode to only collect informational messages.

Procedure

- Step 1** From the *QPM-install-directory*\CSCOPx\MDC\qpm\bin directory (where *QPM-install-directory* is the directory in which you installed QPM), enter this command to begin collecting debug information:
- setqpmloggermode -debug**
- Step 2** When sufficient debug information has been collected, send these files to your Cisco Technical Support representative (paths are relative to the QPM installation directory):
- CSCOPx\MDC\log\jonas_last_run.trace
 - CSCOPx\MDC\log\tomcat_last_run.trace
 - CSCOPx\MDC\log\pdp_last_run.trace
- Step 3** Reset the logging mode so that only informational messages are collected (the default behavior):
- setqpmloggermode -info**
-

Uninstalling QPM

You can uninstall QPM directly from the QPM setup or from the CiscoWorks Common Services 1.0 setup. If you are uninstalling only QPM, it is easier to uninstall from the QPM setup. If you want to uninstall QPM and CiscoWorks Common Services 1.0, use the CiscoWorks Common Services 1.0 setup to uninstall both applications in a single procedure.



Note

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

Procedure from QPM Setup

- Step 1** Select **Start > Settings > Control Panel > Add/Remove Programs**. The Add/Remove Programs window opens.

- Step 2** Select **QoS Policy Manager 3.1**, and click **Change/Remove**.
The QPM uninstallation process starts, and QPM is removed from your computer.
- Step 3** Restart your computer.
- Step 4** Ensure that the QPM directory under the CiscoWorks Common Services 1.0 installation directory has been completely deleted.



Note You cannot reinstall QPM if the QPM installation directory exists.

Procedure from CiscoWorks Common Services 1.0 Setup

- Step 1** Select **Start > Settings > Control Panel > Add/Remove Programs**. The Add/Remove Programs window opens.
- Step 2** Select **CiscoWorks2000**, and click **Change/Remove**.
- Step 3** In the Uninstallation dialog box, clear the check boxes for the applications you do not want to uninstall. Leave **QoS Policy Manager** selected. Click **Next**.
The QPM uninstallation process starts, and QPM is removed from your computer.
- Step 4** Restart your computer.
- Step 5** Ensure that the QPM directory under the CiscoWorks Common Services 1.0 installation directory has been completely deleted.



Note You cannot reinstall QPM if the QPM installation directory exists.



Migrating QPM Information

QPM 3.1 includes an export utility and an import utility, which enable you to:

- Migrate and upgrade QPM 3.0.x information to QPM 3.1
- Migrate QPM information from one QPM 3.1 server to another



Note

The export and import utilities are available on the QPM 3.1 CD-ROM, and are copied to the QPM server in the installation process.

The following topics describe how to use the QPM 3.1 export and import utilities.

- [Exporting QPM 3.x Information, page 3-1](#)
- [Importing QPM 3.x Information, page 3-3](#)



Note

For information about exporting QPM 2.1.x database information, see [Appendix B, “Exporting QPM 2.1.x Databases.”](#)

Exporting QPM 3.x Information

You can export all the information from QPM 3.0.x or QPM 3.1 including:

- QPM database containing device and policy information
- QPM reports
- QPM configuration information

Use the export utility when you want to migrate and upgrade QPM 3.0.x information to QPM 3.1, or when you want to migrate QPM 3.1 from one server to another.

You specify the destination folder to which you want the information exported.

**Note**

When upgrading QPM 3.0.x information, you must use the export utility from the QPM 3.1 installation CD-ROM, *before* you uninstall QPM 3.0.x. See [Installation Sequence to Upgrade from QPM 3.0.x, page 1-4](#).

Procedure**Step 1**

Open a Command window:

- a. Select **Start>Run**. The Run dialog box opens.
- b. Enter **cmd**, and click **OK**. The Command window opens.

**Timesaver**

To run the export utility from the QPM server, in Windows Explorer go to the installation folder. Right-click on the MDC\qpm\bin folder, and select **Cmd prompt here**. The Command window opens in the folder containing the export utility.

Step 2

Run the export utility:

- To start the utility from the QPM 3.1 installation CD-ROM, in the Command window, enter `d:\export.exe <destination folder> <Enter>`, where *d* is your CD-ROM drive, and *<destination folder>* is the full path of an existing folder to which you want to export the data.
- To start the utility from the QPM server, in the Command window:
 - If necessary, change to the drive on which QPM is installed and then change directory to the CSCOpX\MDC\qpm\bin folder in the QPM installation folder.
 - Enter `export.exe <destination folder> <Enter>`, where *<destination folder>* is the full path of an existing folder to which you want to export the data.

The utility stops CiscoWorks services, and exports the QPM information to the specified destination folder. When the export process is finished, the CiscoWorks services are restarted.

Importing QPM 3.x Information

Use the import utility to import the information from the QPM 3.1 export utility into QPM 3.1. If you have exported information from QPM 3.0.x, the import utility automatically upgrades the information for QPM 3.1.



Note

When you use the import utility, any existing QPM information is overwritten. You should therefore import information before you begin working with QPM.

Procedure

Step 1

Open a Command window:

- a. Select **Start>Run**. The Run dialog box opens.
- b. Enter `cmd`, and click **OK**. The Command window opens.



Timesaver

To run the import utility from the QPM server, in Windows Explorer go to the installation folder. Right-click on the `MDC\qpm\bin` folder, and select **Cmd prompt here**. The Command window opens in the folder containing the import utility.

Step 2

Run the import utility:

- To start the utility from the QPM 3.1 installation CD-ROM, in the Command window, enter `d:\import.exe <export folder> <Enter>`, where *d* is your CD-ROM drive, and *<export folder>* is the full path of the folder to which you exported the data.

- To start the utility from the QPM server, in the Command window:
 - If necessary, change to the drive on which QPM is installed and then change directory to the CSCOPx\MDC\qpm\bin folder in the QPM installation folder.
 - Enter `import.exe <export folder> <Enter>`, where *<export folder>* is the full path of the folder to which you exported the data.

The utility stops CiscoWorks services, and imports the QPM information. When the import process is finished, the CiscoWorks services are restarted.

**Note**

Imported QPM 3.0.x IP telephony templates will overwrite any QPM 3.1 updated templates with the same name. To reinstall the updated templates after import, delete the old templates, and rerun the IP Telephony wizard. For details of changes to IP Telephony templates in QPM 3.1, see the Release Notes for QPM 3.1.



QPM User Permissions

The following sections describe the user permissions for QPM, which are handled by the CiscoWorks Common Services 1.0 application:

- [Working with User Permissions, page A-1](#)
- [CiscoWorks User Permissions, page A-2](#)
- [ACS User Permissions, page A-5](#)

Working with User Permissions

CiscoWorks Common Services 1.0 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 3.1 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 A-1](#) shows how QPM permissions are mapped to CiscoWorks roles.

Table A-1 QPM Permissions Mapped to CiscoWorks Roles

QPM Permissions	CiscoWorks Roles				
	System Admin	Network Admin	Network Operator	Approver	Help Desk
Device Inventory Tasks					
View	X	X	X	X	X
Modify	X	X	X	X	
Policy Configuration Tasks					
View	X	X	X	X	X
Modify		X	X	X	
Deployment Tasks					
View	X	X	X	X	X
Deploy		X			
Delete jobs and logs	X				
Reports Tasks					
View	X	X	X	X	X
Delete	X				
Run Real Time Analysis Tasks	X	X	X	X	X
Create Analysis Tasks		X	X	X	
Admin Tasks					
View Audit logs	X	X	X	X	X

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

QPM Permissions	CiscoWorks Roles				
	System Admin	Network Admin	Network Operator	Approver	Help Desk
Delete Audit logs	X				
Backup/Retrieve Backup	X				

**Note**

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

CiscoWorks roles have the following permissions in QPM:

- **System Admin**
 - View information in QPM
 - Make changes to devices in the QPM device inventory
 - Run monitoring tasks
 - Delete any QPM logs and reports
 - Create and retrieve backups of the QPM database

**Note**

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

- **Network Admin**
 - View information in QPM
 - Make changes to devices in the QPM device inventory
 - Create and edit policies
 - Deploy policies to devices
 - Create and run monitoring tasks



Note Network admin is the only user role that can deploy the QoS configurations to the devices on the network.

- **Network Operator**
 - View information in QPM
 - Make changes to devices in the QPM device inventory
 - Create and edit policies
 - Create and run monitoring tasks
- **Approver**
 - View information in QPM
 - Make changes to devices in the QPM device inventory
 - Create and edit policies
 - Create and run monitoring tasks
- **Help Desk**
 - Only view information in QPM

You can add your username for CiscoWorks authentication in the CiscoWorks desktop.

Procedure

-
- Step 1** In the CiscoWorks desktop, select **Server Configuration > Setup > Security > Add Users**.
- Step 2** Enter your username and password.
- Step 3** Select the CiscoWorks user role for the user. Click **Add**.

See *Getting Started with the CiscoWorks Server* for more information about setting CiscoWorks usernames and permissions.

CiscoWorks permissions cannot be customized. However, you can create a user who has the permissions of more than one CiscoWorks role, for example, System Admin and Approver.



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 1.0 to use ACS authorization and authentication, QPM adds permissions in ACS.

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

Table A-2 QPM Permissions Mapped to ACS Roles

QPM Permissions	ACS Roles				
	System Admin	Network Admin	Network Operator	Approver	Help Desk
Device Inventory Tasks					
View	X	X	X	X	X
Modify	X	X	X	X	
Policy Configuration Tasks					
View	X	X	X	X	X
Modify		X	X	X	
Deployment Tasks					
View	X	X	X	X	X
Deploy		X			
Delete jobs and logs	X				
Reports Tasks					
View	X	X	X	X	X

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

QPM Permissions	ACS Roles				
	System Admin	Network Admin	Network Operator	Approver	Help Desk
Delete	X				
Run Real Time Analysis Tasks	X	X	X	X	X
Create Analysis Tasks		X	X	X	
Admin Tasks					
View Audit logs	X	X	X	X	X
Delete Audit logs	X				
Backup/Retrieve Backup	X				

**Note**

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 1.0 server.

ACS roles have the following default permissions in QPM:

- **System Admin**
 - View information in QPM
 - Make changes to devices in the QPM device inventory
 - Run monitoring tasks
 - Delete any QPM logs and reports
 - Create and retrieve backups of the QPM database

**Note**

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

- **Network Admin**

- View information in QPM
- Make changes to devices in the QPM device inventory
- Create and edit policies
- Deploy policies to devices
- Create and run monitoring tasks



Note Network admin is the only user role that can deploy the QoS configurations to the devices on the network.

- **Network Operator**
 - View information in QPM
 - Make changes to devices in the QPM device inventory
 - Create and edit policies
 - Create and run monitoring tasks
- **Approver**
 - View information in QPM
 - Make changes to devices in the QPM device inventory
 - Create and edit policies
 - Create and run monitoring tasks
- **Help Desk**
 - Only view information in QPM

If you intend to work with ACS device groups and user permissions, you must perform the setup configuration described in [Working with ACS Device Groups and User Permissions, page 2-4](#).

**Note**

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 do the following:

1. Restart the ACS server.
 2. If QPM is open, log out and log in again to QPM to reflect the changes.
-



Exporting QPM 2.1.x Databases

You can export device and policy information from your QPM 2.1.x databases to an XML file, and then import the device information and the policies from the XML file into QPM 3.1.

The following topics describe how to install the QPM 2.1.2 patch that contains the QPM 2.1.x export utility and how to use the utility.

- [Installing QPM 2.1.x Export Utility, page B-1](#)
- [Using the QPM 2.1.x Export Utility, page B-2](#)



Note

For information about migrating QPM 3.x information, see [Chapter 3, “Migrating QPM Information.”](#)

Installing QPM 2.1.x Export Utility

The QPM 2.1.x export utility is contained in the QPM 2.1.2 patch, which is included on your QPM 3.1 installation CD-ROM. Use the following procedure to install the patch on the computer on which QPM 2.1 is installed.



Note

We do not recommend installing QPM 2.1.2 from a network CD-ROM drive.

Before You Begin

- If you have the Policy Manager or Distribution Manager windows open, we recommend that you close them.

Procedure

- Step 1** Insert the QoS Policy Manager CD-ROM into the CD-ROM drive on the computer on which QPM 2.1 is installed.
- Step 2** Select **Start > Run**, and enter `d:\QPM-PRO-Patch\QoSPolicyManager-Patch2.1.2g.exe`, where *d* is your CD-ROM drive.

This will start the installation on your system. Before replacing files, the installation will stop the Cisco QoS Manager service and will restart it after the installation completes.

Using the QPM 2.1.x Export Utility

Use the QPM 2.1.x export utility to export the contents of a QPM 2.1.x database to an XML file. The XML file will be required if you want to import device and policy information from QPM 2.1.x databases into QPM 3.1.

The XML file contains all the device and policy information in the database.

Procedure

- Step 1** In QPM 2.1, choose **File > Export Database to XML File**. The Export Database to XML File dialog box opens. QPM assigns a default name to the XML file based on the database name.
- Step 2** Navigate to the folder in which you want to save the XML file. Change the default name, if required.
- Step 3** Click **Save**. A message appears in the Status bar after the database has been exported to the XML file.

You can view the XML file in your browser.

See the *User Guide for QoS Policy Manager* for information about importing device information and policy information from the XML file to QPM 3.1.

**Note**

When importing policies from a QPM 2.1.x import file, QPM will create separate policy groups for each interface that has policies defined for it. This can result in a large number of policy groups if you defined policies for many interfaces. To avoid the creation of a large number of policy groups, consider uploading your policies from the devices rather than importing your QPM 2.1.x data. See the User Guide for QoS Policy Manager for more information about importing and uploading policies.



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