

HP Quality Center

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Installation Guide

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Welcome to This Guide

Welcome to HP Quality Center, the HP Web-based quality management solution. Quality Center helps you organize and manage all phases of the application testing process, including defining releases, specifying requirements, planning tests, executing tests, and tracking defects.

How This Guide is Organized

The Quality Center Installation Guide describes the system requirements and installation process for Quality Center.

It contains the following chapters:

Chapter 1 Before You Install

Provides an overview of the product, and specifies the system configurations for installing Quality Center. In addition, it provides an installation checklist and other related information to help make sure that you are fully prepared before starting the installation process.

Chapter 2 Installing Quality Center

Describes how to install Quality Center.

Chapter 3 Manually Deploying Quality Center on WebLogic

Describes how to manually deploy Quality Center on the WebLogic application server.

Chapter 4 Manually Deploying Quality Center on WebSphere

Describes how to manually deploy Quality Center on the WebSphere application server.

Chapter 5 Manually Integrating JBoss with Apache

Describes how to manually configure the Apache Web server to redirect requests to JBoss.

Chapter 6 Getting Started

Describes the contents of the Quality Center program folder, how to start and stop Quality Center services, and how to log in to Quality Center.

Chapter 7 Installing Quality Center Add-ins

Describes how to install Quality Center integrations with HP testing tools, and with third-party, synchronization and version control tools.

Chapter 8 Verifying the IIS Configuration

Describes how to verify the Internet Information Server component settings.

Chapter 9 Customizing Quality Center

Describes how to customize the names of Quality Center modules, various links, and Tools and Help menus.

Chapter 10 Changing the JBoss Heap Memory Size and Port

Describes how to change the default heap memory value and port number for a JBoss application server.

Chapter 11 Uninstalling Quality Center

Describes how to uninstall Quality Center from your server machine, and to uninstall the client application.

Appendix A Troubleshooting Quality Center Installation

Troubleshooting suggestions for dealing with issues relating to the Quality Center installation.

Documentation Library

The Documentation Library is an online help system that describes how to use Quality Center. You can access the Documentation Library in the following ways:

- ▶ Click **Documentation Library** in the Quality Center Help menu to open the Documentation Library home page. The home page provides quick links to the main help topics.
- ▶ Click **Help on this page** in the Quality Center Help menu to open the Documentation Library to the topic that describes the current page.

Documentation Library Guides

The Documentation Library consists of the following guides and references, available online, in PDF format, or both. PDFs can be read and printed using Adobe Reader, which can be downloaded from the Adobe Web site (<http://www.adobe.com>).

Getting Started explains how to use the Documentation Library and how it is organized. (Available online.)

What's New? describes the newest features in the latest version of Quality Center. (Available online and in PDF format.)

You can also access **What's New?** from the Quality Center **Help** menu. In addition, you can choose **Help > Product Feature Movies** to view short movies that demonstrate the main product features.

Readme provides last-minute news and information about Quality Center.

Quality Center Guides

HP Quality Center User's Guide explains how to use Quality Center to organize and execute all phases of the testing process. It describes how to define requirements, plan tests, run tests, and track defects. (Available online and in PDF format.)

HP Quality Center Administrator's Guide explains how to create and maintain projects using Site Administration, and how to customize projects using Project Customization. (Available online and in PDF format.)

HP Quality Center Tutorial is a self-paced guide teaching you how to use Quality Center to manage the software testing process. (Available in PDF format.)

HP Quality Center Installation Guide explains how to install Quality Center on a server machine in a cluster environment or as a stand-alone application. (Available in PDF format.)

Business Process Testing Guides

HP Business Process Testing User's Guide explains how to use Business Process Testing to create business process tests. (Available online and in PDF format.)

HP Business Process Testing Tutorial provides a self-paced guide that teaches you the basics of Business Process Testing in the Quality Center application. (Available in PDF format.)

API References

HP Quality Center Database Reference provides a complete online reference for the project database tables and fields. (Available online.)

HP Quality Center Open Test Architecture API Reference provides a complete online reference for the Quality Center COM-based API. You can use the Quality Center open test architecture to integrate your own configuration management, defect tracking, and home-grown testing tools with a Quality Center project. (Available online.)

HP Quality Center Site Administration API Reference provides a complete online reference for the Site Administration COM-based API. You can use the Site Administration API to enable your application to organize, manage, and maintain Quality Center users, projects, domains, connections, and site configuration parameters. (Available online.)

HP Quality Center Custom Test Type Guide provides a complete online guide for creating your own testing tool and integrating it into the Quality Center environment. (Available online.)

Additional Online Resources

The following additional online resources are available from the Quality Center **Help** menu:

Knowledge Base opens directly to the Knowledge Base landing page on the Mercury Customer Support Web site. Choose **Help > Knowledge Base**. The URL for this Web site is support.mercury.com/cgi-bin/portal/CSO/kbBrowse.jsp.

Customer Support Web site accesses the Mercury Customer Support Web site. This site enables you to browse the Mercury Support Knowledge Base and add your own articles. You can also post to and search user discussion forums, submit support requests, download patches and updated documentation, and more. Choose **Help > Customer Support Web site**. The URL for this Web site is support.mercury.com.

HP Software Web site accesses the HP Software Web site. This site provides you with the most up-to-date information on HP Software products. This includes new software releases, seminars and trade shows, customer support, and more. Choose **Help > HP Software Web site**. The URL for this Web site is www.hp.com/go/software.

Add-ins Page opens the HP Quality Center Add-ins Page, which offers integrations with HP testing tools, as well as third-party, synchronization, and version control tools. For more information, refer to the *HP Quality Center Installation Guide*.

Typographical Conventions

This guide uses the following typographical conventions:

UI Elements and Function Names	This style indicates the names of interface elements on which you perform actions, file names or paths, and other items that require emphasis. For example, “Click the Save button.” It also indicates method or function names. For example, “The wait_window statement has the following parameters:”
<i>Arguments</i>	This style indicates method, property, or function arguments and book titles. For example, “Refer to the <i>HP User’s Guide</i> .”
<Replace Value>	Angle brackets enclose a part of a file path or URL address that should be replaced with an actual value. For example, <MyProduct installation folder>\bin .
Example	This style is used for examples and text that is to be typed literally. For example, “Type Hello in the edit box.”
CTRL+C	This style indicates keyboard keys. For example, “Press ENTER.”
[]	Square brackets enclose optional arguments.
{ }	Curly brackets indicate that one of the enclosed values must be assigned to the current argument.
...	In a line of syntax, an ellipsis indicates that more items of the same format may be included. In a programming example, an ellipsis is used to indicate lines of a program that were intentionally omitted.
	A vertical bar indicates that one of the options separated by the bar should be selected.

1

Before You Install

This chapter provides an overview of the installation process, and specifies the requirements for installing Quality Center.

This chapter includes:

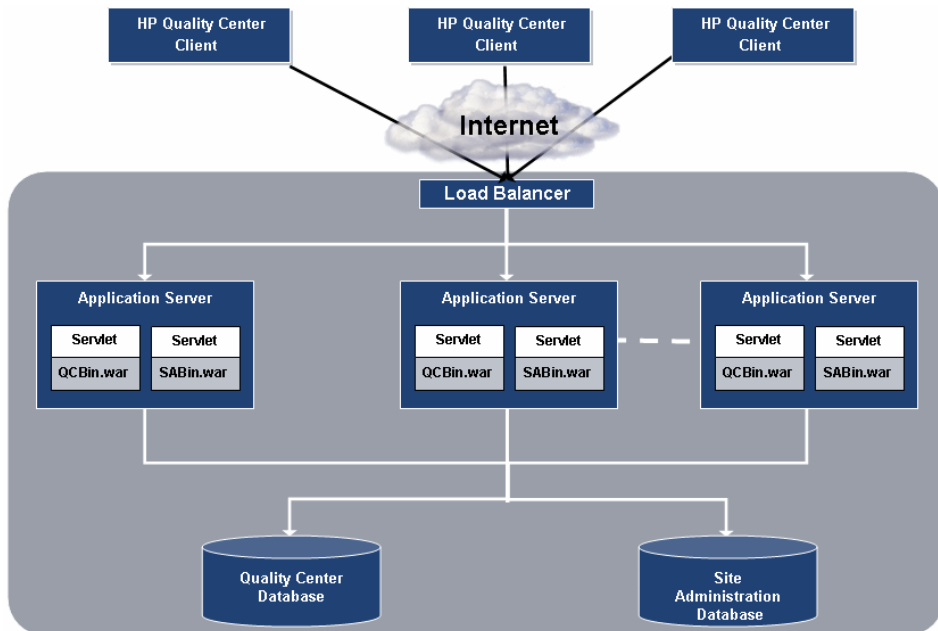
- ▶ About the Quality Center Technology on page 14
- ▶ The Installation Process on page 16
- ▶ System Configurations on page 18
- ▶ Installation Checklist on page 24
- ▶ Quality Center Server-Side Prerequisites on page 26
- ▶ Quality Center Client-Side Prerequisites on page 43
- ▶ Working with Previously Created Projects on page 46
- ▶ Text Search Configuration on page 48

About the Quality Center Technology

Quality Center is an enterprise-wide application that is based on Java 2, Enterprise Edition (J2EE) technology. J2EE technology provides a component-based approach to the design, development, assembly, and deployment of enterprise applications. Within the J2EE framework, Quality Center supports clustering. A **cluster** is a group of application servers that run Quality Center as if they were a single entity. Each application server in a cluster is referred to as a **node** or a **cluster node**.

Clusters provide mission-critical services to ensure maximum scalability and high availability. The load balancing technique within the cluster is used to distribute client requests across multiple application servers, making it easy to scale to an infinite number of users. The cluster of servers can run on Windows, Linux, Solaris, and AIX based platforms.

The following diagram illustrates how Quality Center client requests are transmitted within a cluster.



- ▶ **HP Quality Center Client.** When users log in to Quality Center or Site Administration from their client machine, client components are downloaded to their client machine. Quality Center uses the Component Object Model (COM) interface as an interprocess communicator among the components.
- ▶ **Internet.** Client requests are transmitted via the HTTP protocol to the server.
- ▶ **Load Balancer.** When working with a load balancer, client requests are transmitted to the load balancer and distributed according to server availability within the cluster.
- ▶ **Application Server.** Client requests are dispatched by servlets to the deployed Quality Center application on the application server. Quality Center supports JBoss, WebLogic, and WebSphere.

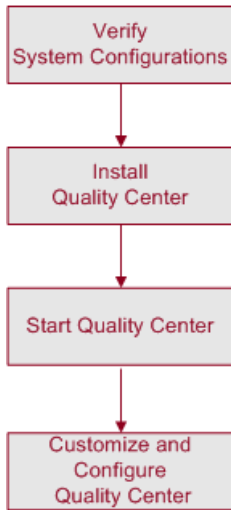
The deployed application contains Quality Center, Site Administration, and associated files which are packaged into Web Application Archive (WAR) files. Client requests from Quality Center are dispatched to the **QCBin.war** file. Client requests from Site Administration are dispatched to the **SABin.war** file.

The Java Database Connectivity (JDBC) interface is used to communicate between the application server and the databases.

- ▶ **Databases.** The Quality Center schema stores project information. The Site Administration schema stores domain, project, and user data. The schemas can reside on Oracle or Microsoft SQL Server.

The Installation Process

Installing Quality Center includes the following steps:



Verify System Configurations

Before you install Quality Center, verify that your server and client machines meet hardware and software specifications. To verify system specifications for Quality Center, see “System Configurations” on page 18.

In addition to verifying the system specifications, ensure that you have all the information for installing Quality Center on a server machine (see “Installation Checklist” on page 24). For more information on the privileges, permissions, and other information required to install and run Quality Center, see “Quality Center Server-Side Prerequisites” on page 26 and “Quality Center Client-Side Prerequisites” on page 43.

To work with previously created projects, you must upgrade or migrate them to your current version of Quality Center. For more information, see “Working with Previously Created Projects” on page 46.

Install Quality Center

Install Quality Center on your server. You can install Quality Center on one of the following platforms: Windows, Solaris, Linux, or AIX. For more information, see Chapter 2, “Installing Quality Center.”

If you are using JBoss, Quality Center is automatically deployed on your application server. If you are using a WebLogic or WebSphere application server, you must deploy Quality Center manually. For more information, see Chapter 3, “Manually Deploying Quality Center on WebLogic” or Chapter 4, “Manually Deploying Quality Center on WebSphere.”

To use Quality Center with an Apache Web server, you need to manually configure the Apache Web server to redirect requests to the JBoss application server. For more information, see Chapter 5, “Manually Integrating JBoss with Apache.”

For information on how to uninstall Quality Center from your server machine, see Chapter 11, “Uninstalling Quality Center.”

Start Quality Center

After you install Quality Center, you can launch it from your Web browser. For more information, see Chapter 6, “Getting Started.”

Customize and Configure Quality Center

You can customize and configure Quality Center as follows:

- ▶ You can install Quality Center add-ins to enhance the existing functionality. For more information, see Chapter 7, “Installing Quality Center Add-ins.”
- ▶ You can customize the names of the Quality Center modules, and the Tools and Help menus. For more information, see Chapter 9, “Customizing Quality Center”.
- ▶ You can update the heap memory value on the JBoss application server if there is a change in the number of active projects or concurrent user sessions in Quality Center. You can also change the JBoss default port number. For more information, see Chapter 10, “Changing the JBoss Heap Memory Size and Port”.

- ▶ If you encounter a problem in the Internet Information Server (IIS) component after you install Quality Center on Windows, you should check the IIS configuration settings. For more information, see Chapter 8, “Verifying the IIS Configuration”.
- ▶ Additional suggestions for dealing with issues relating to the Quality Center installation are described in Appendix A, “Troubleshooting Quality Center Installation”.

System Configurations

This section describes the system configurations required for installing Quality Center.

Important: Refer to <http://www.mercury.com/us/products/quality-center/testdirector/requirements.html> for the most updated Quality Center system configurations.

This section includes the following topics:

- ▶ Server System Configurations on page 19
- ▶ Client System Configurations on page 21
- ▶ Citrix Configurations on page 23
- ▶ VMware ESX Configurations on page 23

Server System Configurations

This section describes the server system configurations for installing Quality Center on Windows, Linux, Solaris, and AIX.

CPU	<p>Windows: Pentium IV or equivalent x86 compatible processor</p> <p>Linux: Pentium IV or equivalent x86 compatible processors</p> <p>Solaris: UltraSPARC-III+ / 900 MHz</p> <p>AIX: Version 5.3</p>
Memory (RAM)	<p>1 GB minimum (2 GB memory for AIX)</p> <p>Note: Additional memory may be required if you increase the default JBoss heap size.</p>
Free Disk Space	3 GB minimum
Database	<ul style="list-style-type: none"> ▶ Oracle 9.2.0.6 Standard/Enterprise Edition ▶ Oracle 10.0g Release 2 Standard/Enterprise Edition ▶ Microsoft SQL Server 2000 Standard/Enterprise Edition with Service Pack 4 ▶ Microsoft SQL Server 2005 Standard/Enterprise Edition with Service Pack 1 ▶ MSDE 2000 Release A (Limited up to 2 GB of memory. Supports up to 5 concurrent users.)
Web Server	<ul style="list-style-type: none"> ▶ IIS 6.0 (Windows with JBoss application server only) ▶ Apache 2.0.54 ▶ JBoss, WebLogic, or WebSphere HTTP server included with the application server

Operating System	Application Server	Java Virtual Machine
Windows 2000 Server with Service Pack 4 or Windows 2003 Server with Service Pack 1 Standard/Enterprise Edition	JBoss 4.0.2 (included with Quality Center)	JVM 1.5
	WebLogic 8.1.5	► BEA JRockit 1.4.2_04-8130 ► Sun SDK 1.4.2_04
	WebSphere 5.1.1.8	IBM Java 1.4.2.04
	WebSphere 6.1	IBM Java 1.4.2.05
Red Hat Enterprise Linux AS/ES, version 3 or Red Hat Enterprise Linux AS/ES, version 4 Note: Quality Center supports Red Hat Enterprise Linux on Intel-based systems only.	JBoss 4.0.2 (included with Quality Center)	JVM 1.5
	WebLogic 8.1.5	► BEA JRockit 1.4.2_04-8130 ► Sun SDK 1.4.2_04
	WebSphere 5.1.1.8	IBM Java 1.4.2.04
	WebSphere 6.1	IBM Java 1.4.2.05
SUSE Linux Enterprise Server 10	JBoss 4.0.2 (included with Quality Center)	JVM 1.5
	WebSphere 5.1.1.8	IBM Java 1.4.2.04
	WebSphere 6.1	IBM Java 1.4.2.05
Solaris 9 OE or Solaris 10 OE Note: Quality Center supports Solaris on SPARC-based systems only.	JBoss 4.0.2 (included with Quality Center)	JVM 1.5
	WebLogic 8.1.5	► BEA JRockit 1.4.2_04-8130 ► Sun SDK 1.4.2_04
	WebSphere 5.1.1.8	IBM Java 1.4.2.04
	WebSphere 6.1	IBM Java 1.4.2.05
AIX 5.3	WebSphere 5.1.1.8	IBM Java 1.4.2.04
	WebSphere 6.1	IBM Java 1.4.2.05

Notes:

- ▶ You can configure JBoss and WebLogic to work with HTTPS. For more information, refer to the Customer Support Knowledge Base (<http://support.mercury.com/cgi-bin/portal/CSO/kbBrowse.jsp>), and select **TestDirector for Quality Center**. For JBoss, search for Article Number 40463. For WebLogic, search for Article Number 47907.
- ▶ In Linux, Solaris, and AIX environments, verify that you have a supported kernel by running `uname -a`.

Client System Configurations

This section describes the client system configurations for Quality Center:

CPU	Pentium III (or higher) or equivalent x86 compatible processor
Memory (RAM)	512 MB minimum
Free Disk Space	300 MB minimum
Operating System	<ul style="list-style-type: none"> ▶ Windows 2000 Server/Professional with SP4 ▶ Windows XP 32-bit Professional/Home Edition with SP2 <p>Notes:</p> <ul style="list-style-type: none"> ▶ If you are integrating Quality Center with other HP testing tools, you must modify the DCOM permissions on your client machine. For more information, refer to the Customer Support Knowledge Base (http://support.mercury.com/cgi-bin/portal/CSO/kbBrowse.jsp), select TestDirector for Quality Center, and search for Article Number 33501. ▶ You can work with the Quality Center client using a remote desktop.
Client Software	Microsoft .NET Framework 2.0 or later
Display	<ul style="list-style-type: none"> ▶ Color palette setting of 256 colors or higher (65536 colors or higher recommended) ▶ Resolution 1024x768 minimum

CPU	Pentium III (or higher) or equivalent x86 compatible processor
Browser	<ul style="list-style-type: none"> ▶ Microsoft Internet Explorer 6.0 with SP1 ▶ Microsoft Internet Explorer 7.0 ▶ Quality Center Explorer
Microsoft Word	The Document Generator, rich text for requirements, and Risk-Based Quality Management reports are available only if Microsoft Word 2000, XP, or 2003 is installed on your machine.
Microsoft Excel	Excel reports and Risk-Based Quality Management reports are available only if Microsoft Excel 2000, XP, or 2003 is installed on your machine.

Notes:

- ▶ Quality Center client-side installation is packaged in Windows Installer (MSI) format, and is available from the **\Utilities\ClientSideInstallation** folder on the installation DVD. This facilitates MSI package customization for customers using remote or mass distribution mechanisms.
 - ▶ If a user connects using a terminal server to a machine running a Quality Center client on Windows 2000 Server, the color depth is downgraded. This is a Windows 2000 Server limitation that restricts the color palette of Terminal Server clients to 256 colors. For greater color depth, you should install MetaFrame and use the ICA protocol on Windows 2000 Terminal Server, or upgrade to Windows 2003 Server.
-

Citrix Configurations

To run Quality Center on Citrix, you need the following configurations.

Citrix Server	Citrix Presentation Server 4, on: <ul style="list-style-type: none"> ▶ Windows 2000 Server with Service Pack 4 ▶ Windows Server 2003 Standard/Enterprise Edition
Citrix Client	Program Neighborhood, Version 8, on: <ul style="list-style-type: none"> ▶ Windows 2000 Server/Professional with Service Pack 4 ▶ Windows XP Professional/Home Edition with Service Pack 2
Quality Center Server	Supports all environments

For more information on the Citrix configuration, refer to the Customer Support Knowledge Base (<http://support.mercury.com/cgi-bin/portal/CSO/kbBrowse.jsp>), select **TestDirector for Quality Center** and search for Article Number 38333.

VMware ESX Configurations

Quality Center can be deployed on a VMware ESX 3.0.1 Server. The system configurations of each virtual machine are the same as the Quality Center server system configurations. For more information, see “Server System Configurations” on page 19.

Installation Checklist

Review and verify the following checklist before installing Quality Center on your server machine. The checklist outlines the information that you must supply during the installation process. For more detailed information on the installation configurations, including permissions and privileges, see “Quality Center Server-Side Prerequisites” on page 26.

Check	Information Required
Installation Machine	<ul style="list-style-type: none"> ➤ Operating system version ➤ CPU type ➤ Free disk space ➤ Free memory <p>Where to get information?</p> <p>For the list of supported versions, see “System Configurations” on page 18.</p>
License Key	<ul style="list-style-type: none"> ➤ License file ➤ Maintenance key <p>Where to get information?</p> <p>The license file was sent to you by e-mail. The maintenance key appears on the box.</p>
Cluster Description	<ul style="list-style-type: none"> ➤ Is clustering used? ➤ Cluster hosts
Application Server	<ul style="list-style-type: none"> ➤ Server type (JBoss, WebLogic, or WebSphere) ➤ Server version <p>If you use JBoss:</p> <ul style="list-style-type: none"> ➤ Port number <p>To run JBoss as a service on Windows machines:</p> <ul style="list-style-type: none"> ➤ JBoss service user name ➤ JBoss service user password ➤ JBoss service user domain

Check	Information Required
Web Server	<ul style="list-style-type: none"> ➤ Server type (IIS or JBoss) <p>If you use IIS:</p> <ul style="list-style-type: none"> ➤ IIS version ➤ Web site
Mail Server	<ul style="list-style-type: none"> ➤ Server type ➤ Server host
Demo Project	<ul style="list-style-type: none"> ➤ Is the demo project required?
Database Server	<ul style="list-style-type: none"> ➤ Database type ➤ Database version ➤ Database server name ➤ Database administrator user name ➤ Database administrator user password ➤ Database port <p>If you use Oracle:</p> <ul style="list-style-type: none"> ➤ Database SID ➤ Default tablespace ➤ Temp tablespace
Site Administration	<ul style="list-style-type: none"> ➤ Site Administrator user name ➤ Site Administrator password
Existing Quality Center Installation	<p>If there is an existing Site Administration schema, provide the following information for the existing version:</p> <ul style="list-style-type: none"> ➤ Quality Center version ➤ Quality Center host ➤ Will the schema be used in the new version? ➤ Database server name ➤ Database administrator user name ➤ Database administrator password ➤ Site Administration database schema name ➤ Site Administration database schema password ➤ Repository folder
Repository	<ul style="list-style-type: none"> ➤ Repository folder

Quality Center Server-Side Prerequisites

The following prerequisites must be met before you can install Quality Center on your server machine.

✓	Topics	Page:
	System Configurations	27
	Permissions Required to Install Quality Center	27
	License File and Maintenance Key	29
	Clustering Configuration	29
	Application Server Information	29
	Web Server Information	31
	Quality Center Demo Project and Mercury Tours	31
	Mail Server Information	32
	Database Prerequisites for Oracle	32
	Database Prerequisites for Microsoft SQL:	38
	Quality Center Site Administration Login Credentials	42
	Quality Center Repository Path	42

For the Quality Center server installation checklist, see “Installation Checklist” on page 24.

System Configurations

Verify that your server machine meets the Quality Center system configurations. For more information on system requirements and supported configurations for Quality Center, see “Server System Configurations” on page 19.

Permissions Required to Install Quality Center

Verify you have the required permissions to install Quality Center on a Windows, Solaris, Linux, or AIX server machine.

Installing on Windows

To install on Windows, you must be logged on as a local or domain user with administrator permissions. The user name of the logged on user installing Quality Center must not include a pound sign (“#”).

Note: If you are a local user and the repository is on a remote machine, you must have full read and write permissions on the shared repository directory.

You must have the following file system permissions:

- ▶ Full read and write permissions for all the files and directories under the directory in which Quality Center is installed. The installation directory path is specified by the user during installation. By default, Quality Center writes the installation files to **C:\Program Files\Mercury\Quality Center**.
- ▶ Full read and write permissions to the **Repository** directory which contains the Site Administration and Quality Center directories. The repository path is specified by the user during installation. By default, it is located in the Quality Center installation directory. For more information on the repository, refer to the *HP Quality Center Administrator's Guide*.

- ▶ Full read and write permissions to the system root (**%systemroot%**) directory. The installer program writes the product information to the **vpd.properties** file in the system root directory. If you do not have these permissions, you can still install Quality Center, but you cannot install any patches.
- ▶ Full read and write permissions to the Temp (**%TEMP%** or **%TMP%**) directory. The installer program writes installation and log files to this directory. Verify that you have at least 500 MB free space on this directory to perform the installation.

You must have the following registry key permission:

Full read and write permissions to all the keys under
HKEY_LOCAL_MACHINE\SOFTWARE\Mercury Interactive

Installing on Solaris, Linux, or AIX

To install on Solaris, Linux, or AIX, you must have the following file system permissions:

- ▶ Full read and write permissions for all the files and directories under the directory in which Quality Center is installed. By default, the Quality Center installation files are written to **/opt/Mercury/QualityCenter**. If users do not have the required permissions on **/opt**, Quality Center can be installed in a different folder.
- ▶ Full read and write permissions to the Repository directory which contains the Site Administration and Quality Center directories. The repository path is specified by the user during installation. By default, it is located in the Quality Center installation directory. For more information on the repository, refer to the *HP Quality Center Administrator's Guide*.
- ▶ Full read and write permissions to the user home directory (~). The installer program writes the product information (the **vpd.properties** file) and the installation log files to the user home directory, which is typically located at **/home/<installer user name>**. If you do not have these permissions, you can still install Quality Center, but you cannot later uninstall Quality Center or install any patches.

- ▶ Full read and write permissions to the Temp directory. The installer program writes the source files, JVM, and log files to a temporary directory. The location of this directory is usually `/tmp/Mercury` or `/var/tmp/Mercury`. Verify that you have at least 500 MB free space on this directory to perform the installation.

License File and Maintenance Key

Verify that you have the Quality Center license file and maintenance key.

- ▶ You need to specify the path to the license file. The license file was sent to you by e-mail and has a `.license` file extension by default. If you do not have a valid license file, you can submit a request for a Quality Center license key from the Customer Support Web site (<http://support.mercury.com>).
- ▶ The maintenance key was supplied to you with the product package when you purchased Quality Center. This field is not mandatory.

Clustering Configuration

Verify whether you are installing Quality Center on a single node or as a cluster (ask your system administrator). For more information on cluster nodes, see Chapter 2, “Installing Quality Center.”

If you are installing Quality Center on cluster nodes, verify which machine you should use as the first node to start the installation, and the number of machines you should use. This depends on the number of users and availability considerations. When installing Quality Center on additional nodes, you must install the same version of Quality Center on all nodes, and insert the same repository and database details that you used on the first node.

Application Server Information

Verify which application server to use. You can use JBoss, WebLogic or WebSphere.

If you are using JBoss, Quality Center is deployed automatically when the installation process finishes.

If you are using a WebLogic or WebSphere application server, you must deploy Quality Center manually after you install Quality Center. For more information on manual deployment, see “Manually Deploying Quality Center on WebLogic” on page 83, and “Manually Deploying Quality Center on WebSphere” on page 87.

JBoss Application Server

If you are using a JBoss application server, you must verify the following issues:

- ▶ For JBoss on Windows, verify that the user account set to run JBoss as a service is the same as the user account that is used to install Quality Center. The user must have full administrator privileges on the Quality Center server machine, as described in “Permissions Required to Install Quality Center” on page 27.
- ▶ For JBoss on Solaris, Linux, or AIX, verify that the user has full control permissions to run JBoss, as described in “Permissions Required to Install Quality Center” on page 27.
- ▶ Verify that the JBoss application server heap memory size is sufficient (the default is up to 1024 MB). Note that the maximum JBoss heap value cannot exceed your maximum memory (RAM) size. You can change the JBoss memory heap size during installation from the JBoss Advanced Options dialog box. For information on changing the heap size after installation, see “Changing the JBoss Heap Memory Size and Port” on page 117.
- ▶ Verify that the default JBoss port (8080) is not reserved or already in use. You can change the JBoss port during installation from the JBoss Advanced Options dialog box. For information on changing the port after installation, see “Changing the JBoss Port Number” on page 121.
- ▶ If you are upgrading from a previous version of Quality Center on the same machine, verify that you have the same Windows user name, password, and domain that you previously used to enable JBoss to run as a service using your local network. If you are upgrading from a different machine, you can use any user, provided that the user has permissions on the shared repository.

WebLogic/WebSphere Application Server

If you are using a WebLogic/WebSphere application server, you must verify the following issues:

- ▶ Verify that the user account that is used to install and run Quality Center has full permissions on the Quality Center installation directory.
- ▶ If upgrading from a previous version of Quality Center, verify that the user account that is used to install and run Quality Center has full permissions on the existing Quality Center repository directory.

Web Server Information

Verify and consider the following issues:

- ▶ If you are using a JBoss application server, you can integrate JBoss with the IIS Web server or with the JBoss Web server during installation.
- ▶ If you are using an application server other than JBoss, or JBoss with an Apache Web server, you must deploy the Web server after installation.
- ▶ If you are using an Apache Web server to integrate Quality Center with Apache, you can manually configure the Apache Web server to redirect requests to JBoss. The Quality Center installation DVD includes the appropriate Apache installation files and the integration files. For information on how to integrate Quality Center with Apache, see Chapter 5, “Manually Integrating JBoss with Apache.”

Quality Center Demo Project and Mercury Tours

Verify which additional Quality Center components you want to install:

- ▶ **Quality Center Demo Project.** This helps you get started with Quality Center. You must install the demo project to work with the Quality Center Tutorial.
- ▶ **Mercury Tours.** This is a sample Web-based travel reservation application that you must install to work with the Quality Center Tutorial.

Mail Server Information

Verify which mail server to use. Ask your system administrator for assistance. If you are using an SMTP Server, check that you have the SMTP Server name. The installer checks that the specified mail server name is valid and that the mail server is running.

Database Prerequisites for Oracle

Verify that you have the following Oracle database information.

Database type and version	Verify that Quality Center supports your database type and version. For the list of supported databases, see “System Configurations” on page 18.
Database server name	Verify the name of the database server.
Database user permissions	Verify that you have the database permissions required to install Quality Center on the Oracle database server. For a list of required permissions, see “User Permissions for Installing Quality Center on an Oracle Database” on page 34.

<p>Database schema name and password</p>	<ul style="list-style-type: none"> ▶ The default Site Administration database schema name is qcsiteadmin_db. If you want to rename the schema, you can change the name in the Advanced Database Server Configuration dialog box. For more information, see step 22 on page 69. ▶ You can create your own Quality Center user password for accessing the database schema. ▶ If there is an existing database schema, verify whether you want to: <ul style="list-style-type: none"> ▶ Upgrade the existing schema and switch all users to Quality Center 9.2. ▶ Create a copy of the existing schema and upgrade the copy. This enables you to work with Quality Center 9.2 and previous versions of Quality Center simultaneously (recommended option). ▶ To install Quality Center on an existing database schema (second node or upgrade), you must have: <ul style="list-style-type: none"> ▶ The existing database schema name and the database administrator permissions required to install Quality Center on the database server. ▶ Full read/write permissions on the existing repository (see “Permissions Required to Install Quality Center” on page 27). ▶ If you are using an existing Site Administration user, the password should be the same as the one in the previous version of Quality Center (see “Quality Center Site Administration Login Credentials” on page 42). ▶ The Quality Center server must have access to the previous Site Administration schema repository path. ▶ The Quality Center user have full read/write permissions to the previous Site Administration schema repository path.
---	--

<p>Database tablespace name and size</p>	<ul style="list-style-type: none"> ➤ Verify the name of the database server, and check the connection to the database server. Ping the database server machine name to test DNS resolution. ➤ Verify you have the tablespace names (default and temporary) and the minimum tablespace sizes for storing the Quality Center schema. To avoid insufficient tablespace for installing Quality Center, it is recommended to have at least 60 MB of free space in the default storage location, and 30 MB of free space in the temporary storage location. ➤ Verify that the tablespace is not locked.
---	--

User Permissions for Installing Quality Center on an Oracle Database

To install Quality Center on an Oracle database server, the installing database user must have sufficient permissions to perform certain administrative tasks in Oracle. These tasks include creating the Quality Center project user schema, copying data between projects, and checking that there is sufficient storage in a specific tablespace.

If you have the Oracle `system` user, you can use this user to install Quality Center. If you are unable to use the Oracle `system` user due to security reasons, it is recommended that your database administrator create a Quality Center database administrative user, for example `qc_admin_db`, with the specific privileges required to install Quality Center.

Your database administrator can create a Quality Center database administrative user using the example script, `qc_admin_db__oracle.sql`, which is located in the `\utilities\databases\scripts` directory on the installation DVD. This script creates the Quality Center database administrative user with the recommended grants required on the database. Your database administrator should run the script and create this user on the staging database server.

Following are the recommended privileges required by the Quality Center database administrative user. Additional explanations about these privileges can be found in the notes at the end of the table.

Privilege	Description
CREATE SESSION WITH ADMIN OPTION ⁽¹⁾	Quality Center uses this privilege to connect to the database as the Quality Center database administrative user.
CREATE USER	Required to create a new project user schema when creating a new Quality Center project.
DROP USER	When deleting a Quality Center project, Quality Center attempts to remove the database schema from the database server. If there is an insufficient privileges error, Quality Center ignores the error and requests that the user notify the database administrator to delete (drop) the database user schema.
CREATE TABLE WITH ADMIN OPTION ⁽¹⁾	Required for granting this permission to a newly created Quality Center project user schema.
CREATE VIEW WITH ADMIN OPTION ⁽¹⁾	Required to create views for Quality Center projects.
CREATE TRIGGER WITH ADMIN OPTION ⁽¹⁾	Required to create triggers for Quality Center projects. Quality Center uses database triggers to collect change history for specific tables.
CREATE SEQUENCE WITH ADMIN OPTION ⁽¹⁾	Required to create sequences for Quality Center projects.
CREATE PROCEDURE WITH ADMIN OPTION ⁽¹⁾	Required to create stored packages for Quality Center projects. Quality Center uses packages to collect change history for specific tables.
CTXAPP Role WITH ADMIN OPTION ⁽¹⁾	Enables Quality Center to use the Oracle text searching feature. This role exists only if the Oracle text search component was installed and enabled on the database server.

Privilege	Description
SELECT ON DBA_FREE_SPACE (2)	Required to check free space on the database server prior to creating a new database schema for Site Administration or a new project.
SELECT ON SYS.DBA_TABLESPACES (2)	Required to collect a list of tablespaces that exist on the database server prior to creating a new database schema for Site Administration or a new project.
SELECT ON SYS.DBA_USERS (2)	Required to verify the existence of specific database project users. For example, you might want to verify the existence of an Oracle CTXSYS user before creating a new Quality Center project.
SELECT ON SYS.DBA_REGISTRY (2)	Required to verify that the text search component is installed on the database server.
SELECT ON SYS.DBA_ROLES (2)	Required to verify that the text search role (CTXAPP) is installed on the database server.
SELECT ANY TABLE WITH ADMIN OPTION (1)	Required for various administrative operations when upgrading the Site Administration schema during installation using the copy and upgrade method, and for enhancing performance when copying a project that has the same source and target database server.
INSERT ANY TABLE	Required for various administrative operations when upgrading the Site Administration schema during installation using the copy and upgrade method, and for enhancing performance when copying a project that has the same source and target database server.
<p>Notes:</p> <ul style="list-style-type: none"> ➤ (1) A Quality Center database administrative user must have privileges with Admin Option. ➤ (2) The SELECT ON SYS privileges can be given directly by the table owner, or through a database application role. To avoid giving these privileges each time, you can grant this role to the Quality Center database administrative user. The recommended name for this role is QC_SELECT_ON_SYS_OBJECTS. You can create this role using the qc_sys_db__oracle.sql example script, which is located in the \utilities\databases\scripts directory on the installation DVD. You should run this script before you run the qc_admin_db__oracle.sql script. 	

When creating a new project or restoring an existing one, Quality Center creates a project user schema. This user schema hosts all the tables that are used by the project for storing and retrieving data. Following are the required privileges for a Quality Center project user schema:

Project User Schema Privilege	Description
QUOTA UNLIMITED ON <default tablespace>	Required for creating database objects that are owned by the Quality Center project user schema. This requirement allows users to create tables in the default tablespace. It replaces the UNLIMITED TABLESPACE system privilege that gave users system privileges to create tables in any tablespace, including the SYSTEM tablespace.
CREATE SESSION	Quality Center uses this privilege to connect to the database user schema to perform required operations, for example creating database objects such as tables, and using them to insert, retrieve, and delete data from them.
<ul style="list-style-type: none"> ➤ CREATE TABLE ➤ CREATE VIEW ➤ CREATE TRIGGER ➤ CREATE SEQUENCE ➤ CREATE PROCEDURE ➤ CTXAPP Role 	For a description of these privileges, see the table of required Quality Center database administrative user privileges on page 35.

Tip: The installation DVD contains an example script that describes the recommended permissions required for the Quality Center database project user schema. This script contains information, and does not need to be run. It is located at `\utilities\databases\scripts\qc_project_db__oracle.sql`.

Database Prerequisites for Microsoft SQL

Verify that you have the following Microsoft SQL database information.

Database type and version	<ul style="list-style-type: none">▶ Verify that Quality Center supports your database type and version. For the list of supported databases, see “System Configurations” on page 18.▶ Verify the database server authentication type: Windows or SQL Server authentication.▶ For Microsoft SQL Server Windows Authentication, check that you can log in to the database. If you upgrade a project to Quality Center 9.2, you must use the same type of SQL Server authentication that you used before the upgrade.
Database server name	Verify the name of the database server.

Database user permissions	Verify that you have the database permissions required to install Quality Center on the SQL database server (not applicable for Microsoft SQL Server Windows Authentication). For a list of required permissions, see “User Permissions for Installing Quality Center on a Microsoft SQL Server” on page 40.
Database schema name and password	<ul style="list-style-type: none"> ▶ The default Site Administration database schema name is qcsiteadmin_db. If you want to rename the schema, you can change the name in the Advanced Database Server Configuration dialog box. For more information, see step 22 on page 69. ▶ You can create your own Quality Center user password for accessing the database schema. ▶ If there is an existing database schema, verify whether you want to: <ul style="list-style-type: none"> ▶ Upgrade the existing schema and switch all users to Quality Center 9.2. ▶ Create a copy of the existing schema and upgrade the copy. This enables you to work with Quality Center 9.2 and previous versions of Quality Center simultaneously (recommended option). ▶ To install Quality Center on an existing database schema (second node or upgrade), you must have: <ul style="list-style-type: none"> ▶ The existing database schema name and the database administrator permissions required to install Quality Center on the database server. ▶ Full read and write permissions on the existing repository (see “Permissions Required to Install Quality Center” on page 27). ▶ If you are using an existing Site Administration user, the password should be the same as the one in the previous version of Quality Center (see “Quality Center Site Administration Login Credentials” on page 42).

User Permissions for Installing Quality Center on a Microsoft SQL Server

To install Quality Center on a Microsoft SQL database server, the installing database user must have sufficient permissions to perform certain administrative tasks in SQL.

If you have the SQL `sa` user, you can use this user to install Quality Center. If you are unable to use the SQL `sa` user due to security reasons, it is recommended that your database administrator create a Quality Center database administrative user, for example `qc_db_admin`, with the specific privileges required to install Quality Center.

The Quality Center database administrative user must have the **Database Creators** role. You can also grant the user the **Security Administrators** role. This allows you to create a `qc` user with only those privileges required for running Quality Center. Alternatively, you can create a `qc` user before installing Quality Center. To create a `qc` user, follow steps 1-3 below, and enter `qc` as the user name. It is important that the `qc` user does not have any server role.

To create a Quality Center database administrative user on Microsoft SQL Server 2000:

- 1** Open the **Enterprise Manager**.
- 2** Navigate to **Console Root > Microsoft SQL Servers > SQL Server Group > <machinename> > Security > Logins**.
- 3** Right-click **Logins**, and select **New Login**.
- 4** Enter `qc_db_admin` as the user name, and select the authentication type (enter password if necessary).
- 5** Click the **Server Roles** tab, and select the **Database Creators** option.
- 6** Click **OK**.

To create a Quality Center database administrative user on Microsoft SQL Server 2005:

- 1** Open the **SQL Server Management Suite**.
- 2** Under **Database Engine**, right-click the machine name, and select **Connect > Object Explorer**.
- 3** In the Object Explorer window, click **Security**, right-click **Logins**, and select **New Login**.
- 4** Enter qc_db_admin as the user name, and select the authentication type (enter password if necessary).
- 5** Click the **Server Roles** tab, and select the **dbcreator** option.
- 6** Click **OK**.

To test the Quality Center database administrative user (SQL Server Authentication):

- To verify the select sysdatabases table permission in the master database:
SELECT name FROM sysdatabases where name=<db_name>
- To verify the create database permission:
CREATE DATABASE <dbName> -- the database name must not already exist
- To verify the drop database permission:
DROP DATABASE <database_name> -- the database name must exist
- To verify the select syslogins permission:
SELECT COUNT(*) FROM master..syslogins WHERE name=<dbOwnerName>

Note: The dbOwnerName must be set to **td**.

To test the Quality Center database administrative user (Windows Authentication):

- ▶ To verify the change database context permission:
USE <dbName>
- ▶ To verify the create database permission:
CREATE DATABASE <dbName> -- the database name must not already exist
- ▶ To verify the select on syslogins permission:
SELECT COUNT(*) FROM master..syslogins WHERE name='<dbOwnerName>'
- ▶ To verify the select on sysusers permission:
SELECT COUNT(*) FROM master..sysusers WHERE name='<dbOwnerName>'
- ▶ To verify the grant all to td user permission:
GRANT ALL TO <dbOwnerName>

Quality Center Site Administration Login Credentials

You define the site administrator name and password when you log in to Quality Center Site Administration for the first time.

- ▶ For a clean installation, you can use any valid Quality Center Site Administration user name and password.
- ▶ For an existing database schema, if you are using an existing Site Administration user, the password should be the same as the one in the previous version of Quality Center. When upgrading from Quality Center 8.x, you can use any existing Quality Center 8.x user credentials (preferably a user that is an administrator). In addition, the project directory should point to your existing domain repository.

Quality Center Repository Path

The location of the repository directory is specified by the user during installation. The default location is **C:\Program Files\Mercury\Quality Center\repository**. You must have full control permissions on the Quality Center repository path as described in “Permissions Required to Install Quality Center” on page 27.

Quality Center Client-Side Prerequisites

The following prerequisites must be met before you can download Quality Center to your client machine.

✓	Topics	Page:
	System Configurations	43
	Permissions Required to Download Quality Center	43
	Internet Explorer Configuration	44
	.NET Framework Installation	45

System Configurations

Verify that your client machines meet the Quality Center system configurations. For more information on client system requirements for Quality Center, see “Client System Configurations” on page 21.

Permissions Required to Download Quality Center

To download Quality Center on a client machine, you must be logged on as a local or domain user with administrator privileges, and have the file system and registry permissions listed below. After you have installed Quality Center on a client machine, a user with minimum privileges (for example, **Users** group privileges) can start the Quality Center client.

You must have the following file system permissions:

- Full read and write permissions on **C:\Program Files\Common Files\Mercury Interactive**. This is where the Quality Center ActiveX files and executables are stored.
- Full read and write permissions on **C:\WINNT** (or **C:\Windows** on Windows XP). This is where the **mercury.ini** file is stored.
- Full read and write permissions to the Temp (%TEMP% or %TMP%) directory. The installer program writes installation and log files to this directory. This is generally located at **C:\Documents and Settings\\Local Settings\Temp**.

You must have full read and write permissions on the following registry keys:

- HKEY_CLASSES_ROOT\AppID
- HKEY_CLASSES_ROOT\CLSID
- HKEY_CLASSES_ROOT
- HKEY_CLASSES_ROOT\Interface
- HKEY_CLASSES_ROOT\TypeLib
- HKEY_CURRENT_USER\Software
- HKEY_LOCAL_MACHINE\SOFTWARE
- HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Cryptography\RNG

Internet Explorer Configuration

Before you download Quality Center on a client machine, you must configure the Custom Level security settings on the Web browser of the client machine. The Custom Level security setting should be configured for the specific zone of the Quality Center server.

To configure security settings on the client machine:

- 1** In Internet Explorer, select **Tools > Internet Options**. The Internet Options dialog box opens.
- 2** Click the **Security** tab. The Web content zone of the Quality Center server (**Internet** or **Local intranet**) is automatically selected. Click **Custom Level**.
- 3** In the Security Settings dialog box, configure the following settings.

Under **.NET Framework-reliant components**:

- Set **Run components not signed with Authenticode** to **Enable**.
- Set **Run components signed with Authenticode** to **Enable**.

Under **ActiveX controls and plug-ins**:

- ▶ Set **Run ActiveX controls and plug-ins** to **Enable**.
- ▶ Set **Download signed ActiveX controls** to **Enable** or **Prompt**.

Note: You do not need to enable **Download signed ActiveX controls** if you install the Quality Center client by selecting **Quality Center Client Side Setup** in the HP Quality Center Add-ins page. For more information on installing add-ins, see Chapter 7, “Installing Quality Center Add-ins.”

4 Click **OK**.

.NET Framework Installation

To install a Quality Center client, Microsoft .NET Framework 2.0 must be installed on the client machine. If it is not already installed, Quality Center prompts you to install it during the client installation. To perform the installation, follow the instructions in the Software Update Installation Wizard (if Windows Installer 3.1 is not installed) and the Microsoft .NET Framework 2.0 Setup.

The first time you run Quality Center, the user interface and configuration files for running Quality Center using Microsoft .NET framework are downloaded to **C:\Program Files\Common Files\Mercury Interactive\Quality Center\Client\Client.cab** on the client machine. If .NET Framework 2.0 was not previously installed on the machine, **dotnetfx.exe** is also downloaded to **C:\Program Files\Common Files\Mercury Interactive\Quality Center**.

Working with Previously Created Projects

To work with projects created in TestDirector or previous versions of Quality Center, you must migrate or upgrade the projects. For more details, including guidelines for upgrading and migrating projects, refer to the *HP Quality Center Administrator's Guide*.

If you are upgrading from Quality Center, and an existing Site Administration database schema exists on your database server machine, you must choose one of the following schema upgrade options during the installation process:

- ▶ **Upgrade existing schema.** Uses the existing Site Administration database schema. Choose this option if you want to upgrade the existing schema and switch all users to Quality Center 9.2. If you choose this option, you cannot work with projects or users created in previous versions of Quality Center until you upgrade them to Quality Center 9.2.
- ▶ **Upgrade a copy of the existing schema.** Creates a copy of the existing Site Administration database schema, and upgrades the copy. This is the recommended option as it enables you to work in Quality Center 9.2 with new and upgraded projects, and in your previous version of Quality Center with projects that have not been upgraded. This enables you to upgrade your existing projects incrementally. For further notes and guidelines on upgrading a copy of the existing schema, see “Guidelines for Upgrading a Copy of the Existing Schema” on page 47.

Note: The new database schema is created in the same tablespace as the existing Site Administration database.

For more information on using an existing database schema, see “Database Prerequisites for Oracle” on page 32, or “Database Prerequisites for Microsoft SQL” on page 38.

Guidelines for Upgrading a Copy of the Existing Schema

If a Site Administration database schema exists on your database server machine and you choose to upgrade a copy of the existing schema, consider the following guidelines:

Project upgrade	Before you upgrade a project to Quality Center 9.2, you must deactivate the project and remove it from the projects list in your previous version of Site Administration.
Quality Center users	After you install Quality Center 9.2, if you add or delete users, or update user details in your previous version of Quality Center, you must make the same changes in Quality Center 9.2.
Quality Center configuration parameters	After you install Quality Center 9.2, if you modify configuration parameters in your previous version of Quality Center, you must make the same changes in Quality Center 9.2.
Server node configuration	If you are working with server nodes, in the Servers tab in Site Administration for Quality Center 9.2, you must reconfigure the settings for the Quality Center server log file and the maximum number of database connections.
Quality Center repository path	The repository path in your previous version must be defined as a network path, so that it can be accessed by both the previous Quality Center server and by the Quality Center 9.2 server.
DATACONST table	The following constants must be set as network paths in the DATACONST table: <code>db_directory</code> , <code>tests_directory</code> , <code>unix_db_directory</code> , and <code>unix_tests_directory</code> . This enables them to be accessed by both the previous Quality Center server and by the Quality Center 9.2 server.
Operating System	Quality Center 9.2 must be installed on the same operating system as your previous version of Quality Center.
Version control	You must check in all tests before you upgrade a version control project. If version control is enabled in your previous version of Quality Center, you must also install the same version control add-in on the Quality Center 9.2 server.

Text Search Configuration

Text search is available only if the text searching feature has been installed and configured on an Oracle or SQL database server.

- ▶ For Microsoft SQL 2005 SP1 and Oracle 10g, the text search feature is installed by default, and no configuration is required.
- ▶ For Oracle 9i, you must install and configure the text searching feature on your Oracle database server. For more information on enabling the text search feature on the Oracle 9i database server and in Quality Center, refer to the *HP Quality Center Administrator's Guide*.
- ▶ For Microsoft SQL 2000, Quality Center does not support the text search feature.

2

Installing Quality Center

This chapter describes how to install Quality Center 9.2 on Windows, Linux, Solaris, and AIX. It also describes how to run the Quality Center setup to install silently (in the background).

This chapter includes:

- ▶ About Installing Quality Center on page 49
- ▶ Mounting the File System Repository in a Clustered Environment on page 50
- ▶ Installing Quality Center on page 53
- ▶ Installing Quality Center in Silent Mode on page 79

About Installing Quality Center

You can install Quality Center on a single node or as a cluster. When you install Quality Center on cluster nodes, all nodes must be identical. For example, all nodes must use the same application server, operating system, Quality Center directory location, and Site Administration database. In addition, you must install the same version of Quality Center on all nodes.

If you are working in a clustered environment in Solaris, Linux, or AIX, you must mount the file system repository before you start the Quality Center installation process. For more information, see “Mounting the File System Repository in a Clustered Environment” on page 50.

Note: When you are installing Quality Center on a secondary node of a cluster, you are not required to set up the database, because it was set up when you installed the primary node. Some of the dialog boxes described in this installation procedure are needed only for the primary node and are not displayed if you are installing a secondary node.

Mounting the File System Repository in a Clustered Environment

When working in a clustered environment in Solaris, Linux, or AIX, you must mount the file system repository before you start the Quality Center installation process. The mount to the file system repository should not use any cache mechanisms.

To mount a file system repository in Linux:

- ▶ **NFS mounts:** When using NFS mounts, modify the `/etc/fstab` file as follows:

```
<source> <target> nfs sync,noac 0 0
```

- ▶ **SMBFS mounts:** When using SMBFS (mounted from a Windows machine), modify the `/etc/fstab` file as follows:

```
<source> <target> smbfs  
credentials=/root/.smbpasswd,rw,gid=<GID>,uid=<UID>,  
fmask=0777,dmask=0777 0 0
```

For example:

```
//qcserver/QCrepository /mnt/QCrepository smbfs  
credentials=/root/.smbpasswd,rw,gid=10,uid=qcadmin,  
fmask=0777,dmask=0777 0 0
```

Where:

- `//qcserver/QCrepository` is the UNC of the source path
- `uid=qcadmin` is a domain user. Note that `qcadmin` must be a user on the Windows server, and must belong to the Administrators group.
- `/mnt/QCrepository` is the local folder

The `qcadmin` in this example must be defined in the credential file (`/root/.smbpasswd`) as follows:

```
username = qcadmin
password = <qcadmin-password>
```

You must also edit the `/etc/samba/smb.conf` file and change the **workgroup** value to a domain name (for example: MERCURY).

To mount a file system repository in Solaris:

NFS mounts: When using NFS mounts, modify the `/etc/vfstab` file as follows:

```
<source> - <target> nfs - yes sync,noac
```

To mount a file system repository in AIX:

- **SMB mount:** When using SMB mounts, do the following:

```
mount -v cifs -n server/user/pass -o uid=<UID>,fmode=750 /<SHARE NAME> /mnt
```

If `cifs` is not installed, you will have to use `smit` install (with the installation DVD inserted) to install it.

- **NFS mounts:** When using NFS mounts, modify the `/etc/fstab` file as follows:

```
mount <remote machine>:<remote path> <local path>
```

For example:

```
#> mount venus:target /vol/vol1/a-m/apollo

* Pathname of mount point      [/target]      /
* Pathname of remote directory [vol/vol1/a-m/apollo]
* Host where remote directory resides [venus]
Mount type name                []
* Security method              [sys]
* Mount now, add entry to /etc/filesystems or both? both
* /etc/filesystems entry will mount the directory yes
* Mode for this NFS file system      read-write
* Attempt mount in foreground or background      background
Number of times to attempt mount      []
Buffer size for read                [4096]
Buffer size for writes               [4096]
NFS timeout. In tenths of a second    []
NFS version for this NFS filesystem    any
Transport protocol to use            tcp
Internet port number for server       []
* Allow execution of setuid and setgid programs      yes
* Allow device access via this mount?              yes
* Server supports long device numbers?             yes
* Mount file system soft or hard                   hard
Minimum time, in seconds, for holding      [3]
attribute cache after file modification
Allow keyboard interrupts on hard mounts?      yes
Maximum time, in seconds, for holding        [60]
Minimum time, in seconds, for holding        [30]
Maximum time, in seconds, for holding        [60]
attribute cache after directory modification
Minimum & maximum time, in seconds, for      []
The maximum number of biod daemons allowed    [6]
* Use acls on this mount?                      no
Number of NFS retransmits                   []
* Exchange POSIX pathconf information?          no
* Inherit group IDs?                           no
```

This will mount **/target** from **venus:/vol/vol1/a-m/apollo** and add the following lines to the **/etc/filesystem**:

```
/target:
  dev      = "/vol/vol1/a-m/apollo"
  vfs      = nfs
  nodename = venus
  mount    = true
  options  = bg,hard,intr,rsize=4096,wsiz=4096,proto=tcp,sec=sys
  account  = false
```

The mount point will be automatically mounted on reboot.

Installing Quality Center

This section describes how to install Quality Center 9.2.

Tips:

- ▶ Before installing Quality Center, it is recommended that you verify that you meet the installation requirements in the “Quality Center Server-Side Prerequisites” on page 26.
 - ▶ If you encounter problems during the Quality Center installation process, see Appendix A, “Troubleshooting Quality Center Installation,” for troubleshooting suggestions.
-

To install Quality Center:

- 1** If you are working in a clustered environment in Solaris, Linux, or AIX, mount the file system repository. For more information, see “Installing Quality Center in Silent Mode” on page 79.
- 2** If you have been working with a previous version of Quality Center, back up your existing projects before installing the new version. For more information, refer to the *HP Quality Center Administrator's Guide*.

- 3 Log in to the Quality Center server machine with the appropriate permissions. For a list of required permissions, see “Permissions Required to Install Quality Center” on page 27.
- 4 If Quality Center is installed on the machine, uninstall it. For more information, see Chapter 11, “Uninstalling Quality Center.”

Note: After you uninstall Quality Center, check that the `<Quality Center home>\application` directory was deleted. If it was not deleted, delete the directory before you install Quality Center again.

- 5 Insert the HP Quality Center 9.2 Software installation DVD into the DVD drive and run the appropriate file.

Platform	To install:
Windows	Run the <code>setup.exe</code> file.
Solaris, Linux, or AIX (console mode)	<ul style="list-style-type: none"> ▶ To install on a Solaris platform, type: <code>./setupSolaris.bin -console</code> ▶ To install on a Linux platform, type: <code>./setupLinux.bin -console</code> ▶ To install on an AIX platform, type: <code>./setupAix.bin -console</code>
Solaris, Linux, or AIX (UI mode)	<p>Make sure that the DISPLAY environment variable is properly configured on the Quality Center host machine, and that the machine from which you are installing is running an X-server (for example, Exceed).</p> <ul style="list-style-type: none"> ▶ To install on a Solaris platform, type: <code>./setupSolaris.bin</code> ▶ To install on a Linux platform, type: <code>./setupLinux.bin</code> ▶ To install on an AIX platform, type: <code>./setupAix.bin</code>

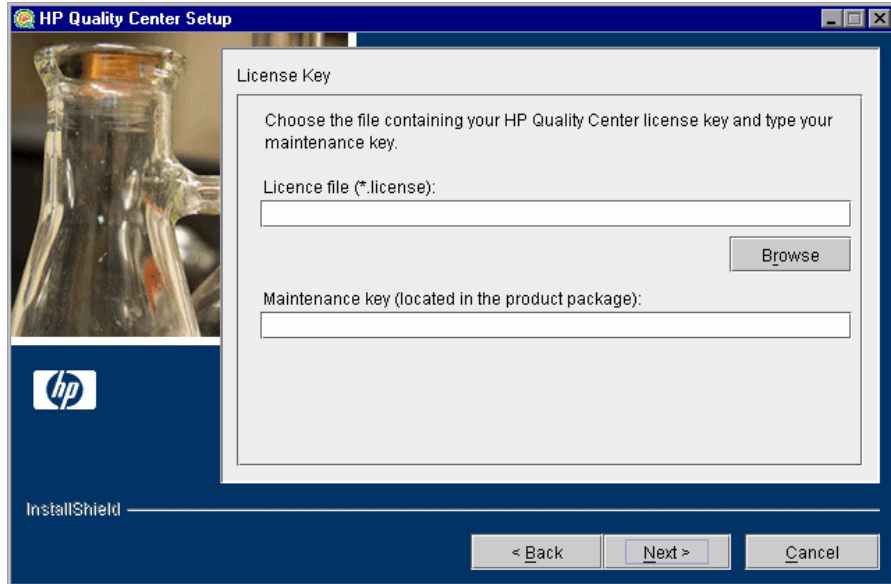
- 6 The Welcome dialog box opens. Click **Next**.

7 The License Agreement dialog box opens.

Read the license agreement. To accept the terms of the license agreement, select **I accept the terms of the license agreement**.

Click **Next**.

8 The License Key dialog box opens.



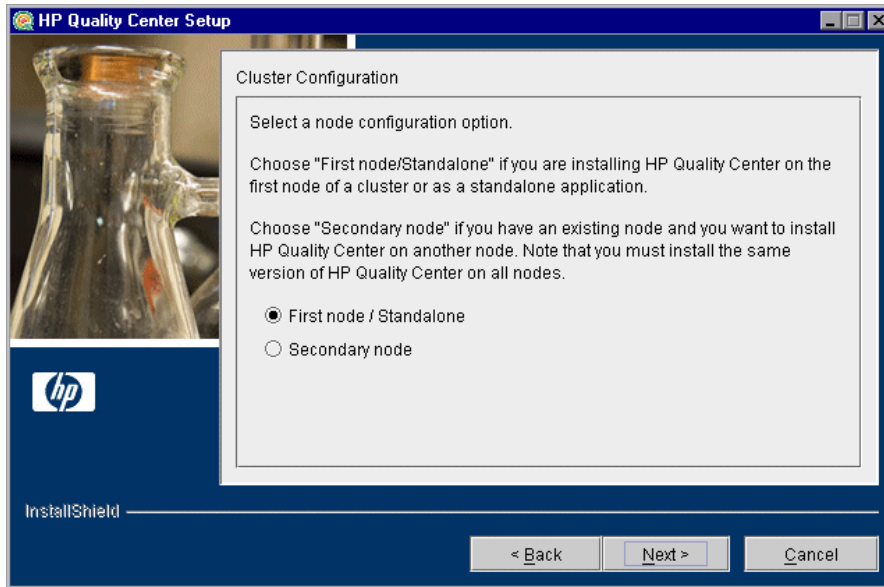
License file. Select the Quality Center license file path.

Maintenance key. Type the maintenance number supplied to you when you purchased Quality Center.

For more information on the license file and maintenance key, see “License File and Maintenance Key” on page 29.

Click **Next**.

9 The Cluster Configuration dialog box opens.



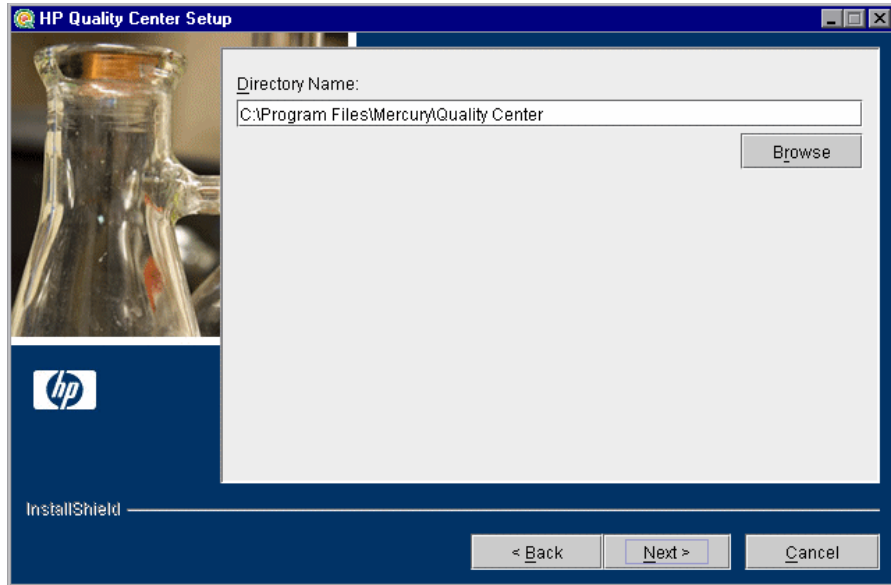
Select a node configuration option:

- ▶ **First node/Standalone.** Installs Quality Center on the first node of a cluster or as a stand-alone application.
- ▶ **Secondary node.** If you have an existing node, installs Quality Center on another node to create a cluster.

For more information on cluster configuration, see “Clustering Configuration” on page 29.

Click **Next**.

10 The Directory Name dialog box opens.

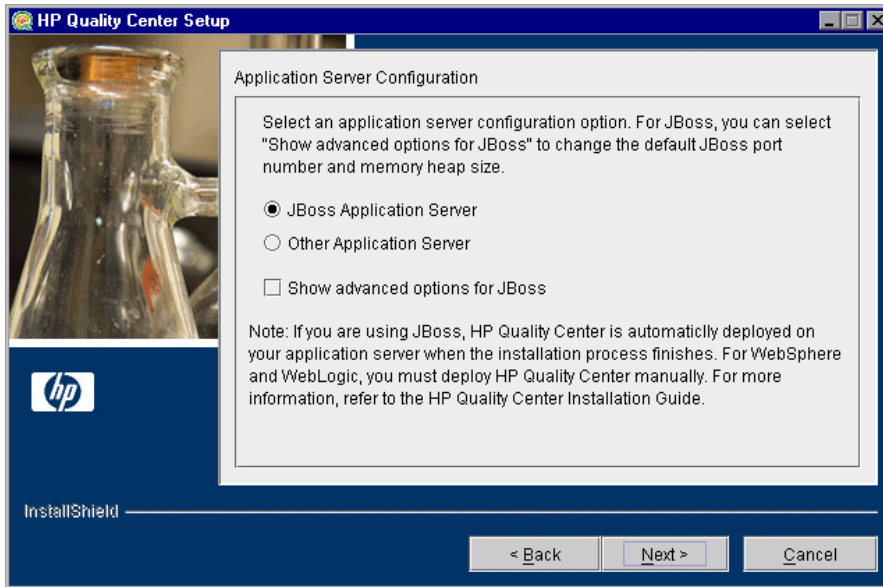


Specify the location where you want to install Quality Center. To browse possible locations, click the **Browse** button, select a location, and click **OK**.

For more information on the required installation directory permissions, see “Permissions Required to Install Quality Center” on page 27.

Click **Next**.

11 The Application Server Configuration dialog box opens.



Select one of the following application server configuration options:

- ▶ **JBoss Application Server.** Select this option to work with JBoss.
To change the default JBoss port number or change the JBoss memory heap size, select **Show advanced options for JBoss**.
- ▶ **Other Application Server.** Select this option to work with WebLogic or WebSphere.

For more information on the application server options, see “Application Server Information” on page 29.

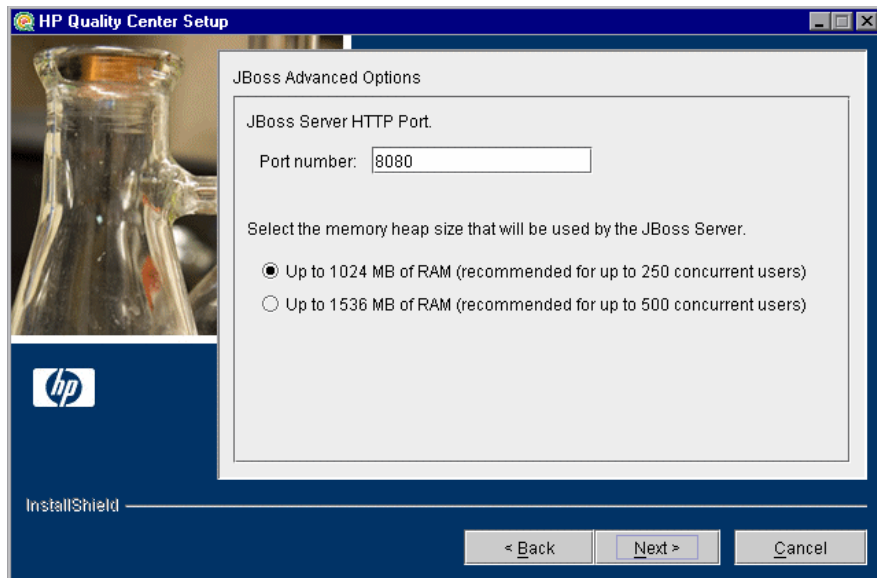
Click **Next**.

12 If you selected **JBoss Application Server**, proceed to step 13 on page 59.

If you selected **Other Application Server**, proceed to step 18 on page 64.

- 13** If you did not select **Show advanced options for JBoss**, proceed to step 14 on page 60.

If you selected **Show advanced options for JBoss**, the JBoss Advanced Options dialog box opens.



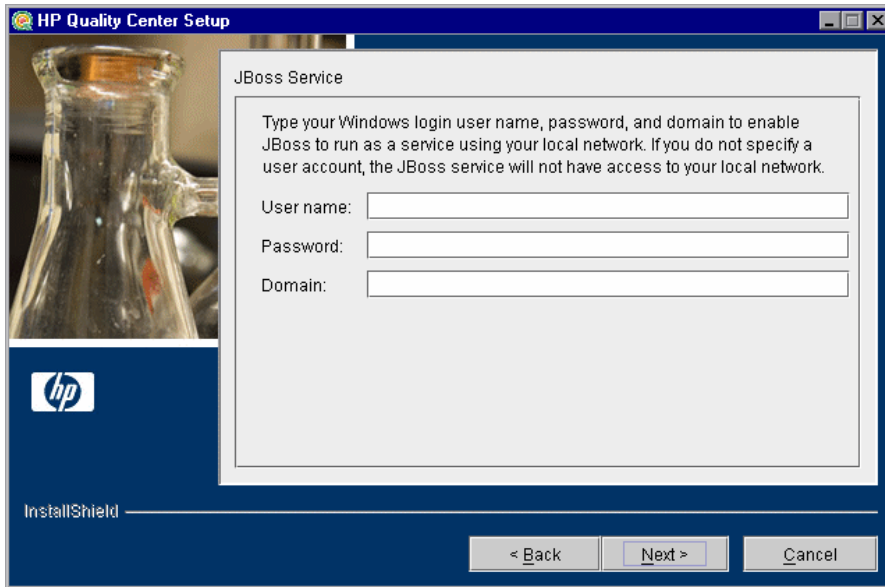
In the **Port number** box, you can change the JBoss server HTTP port number. The default port is 8080.

Select the JBoss memory heap size to be used by the JBoss server. The default setting is up to 1024 MB. Note that the maximum JBoss heap value cannot exceed your maximum memory (RAM) size. For more information on JBoss performance tuning, refer to the JBoss documentation.

Click **Next**.

Note: You can update the heap memory value and port number on the JBoss application server after you have installed Quality Center. For details, see Chapter 10, “Changing the JBoss Heap Memory Size and Port.”

14 If you selected **JBoss Application Server**, the JBoss Service dialog box opens.



Type the **User name**, **Password**, and **Domain** to be used to run JBoss as a service. This enables the JBoss service to access your local network.

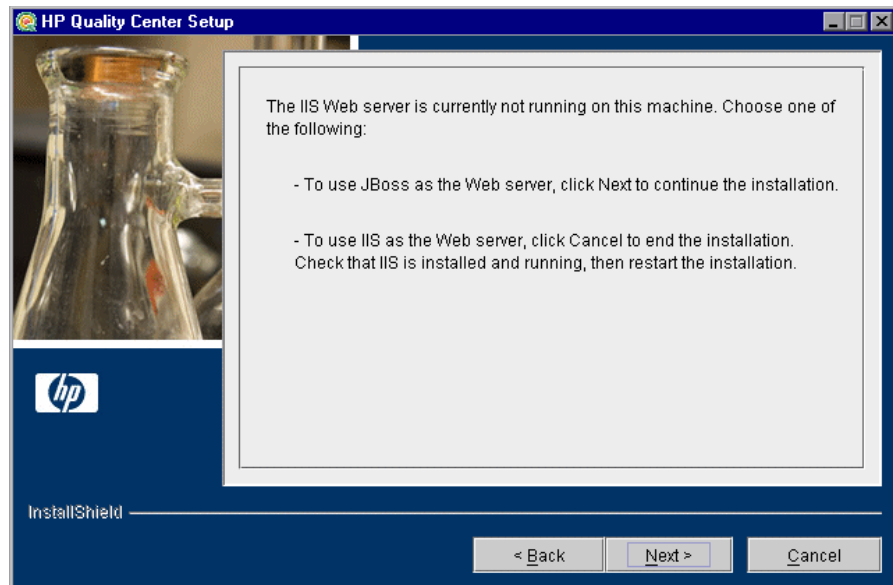
If you leave this blank, the local system account is used to run the JBoss service, and the JBoss service does not have access to your local network. This means that the repository and the database must be on the local machine.

For more information about user permissions, see “JBoss on Windows” on page 30.

Click **Next**.

- 15** If the IIS Web server is installed on your machine, proceed to step 16 on page 62.

If the IIS Web server is not installed on your machine, the following dialog box opens.

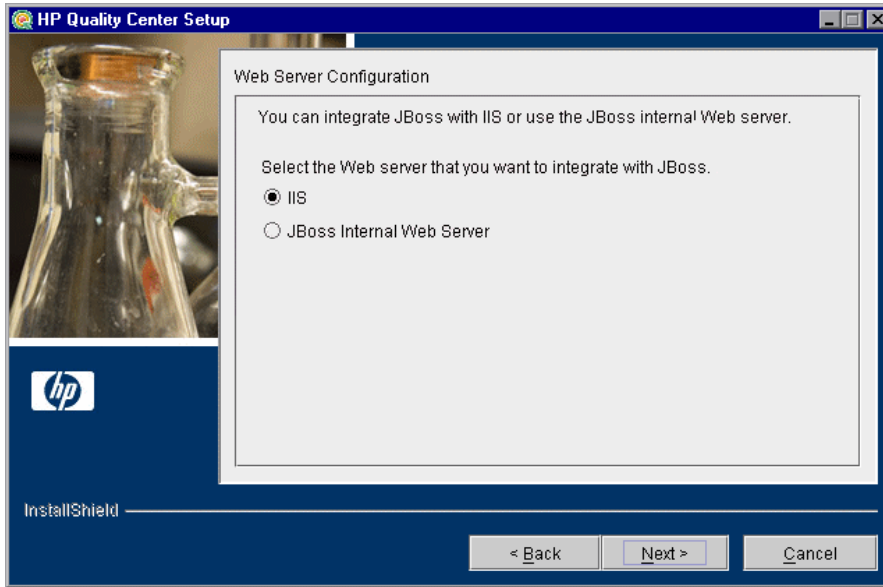


The Quality Center installer can integrate JBoss with the IIS Web server or with the JBoss Web server. Alternatively, you can manually integrate JBoss with the Apache Web server. For more information, see Chapter 5, “Manually Integrating JBoss with Apache.” By default, Quality Center integrates JBoss with the IIS Web server.

Choose one of the following options:

- ▶ To use JBoss as the Web server, click **Next** to continue the installation. Proceed to step 18 on page 64.
- ▶ To use IIS as the Web server, click **Cancel** to end the installation. Check that IIS is installed and running, then restart the installation.

- 16** If the IIS Web server is installed on your machine, the Web Server Configuration dialog box opens.

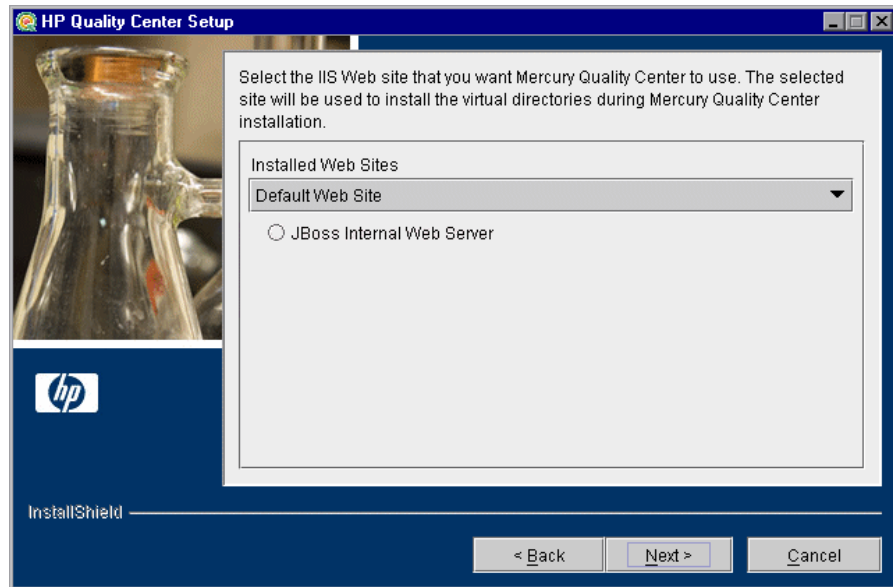


Select the Web server that you want to integrate with JBoss. For more information on the Web server options, see “Web Server Information” on page 31.

Note: For information on how to redirect requests to JBoss from an IIS server on a remote machine, refer to the Customer Support Knowledge Base (<http://support.mercury.com/cgi-bin/portal/CSO/kbBrowse.jsp>), select **TestDirector for Quality Center**, and search for Article Number 37817.

Click **Next**.

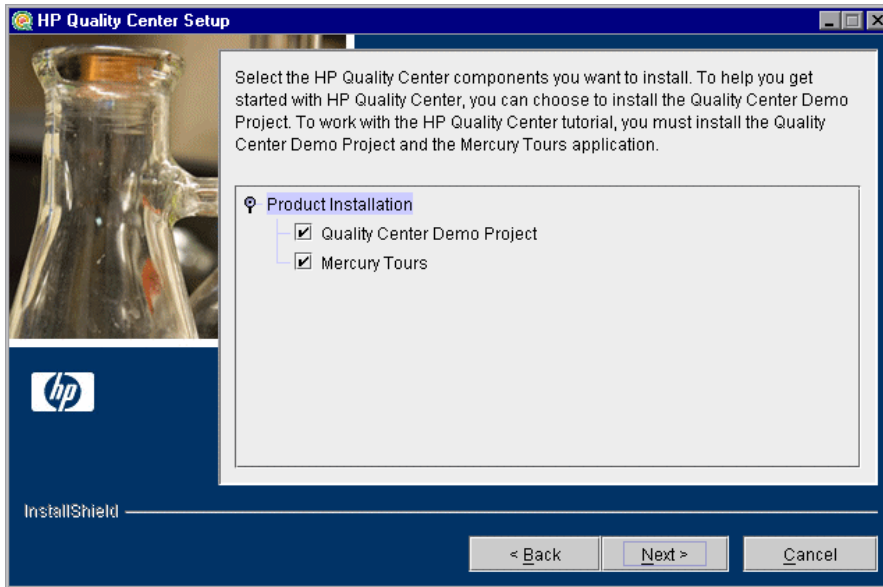
- 17** If you selected **JBoss Internal Web Server**, proceed to step 18 on page 64.
If you selected **IIS**, the IIS Web Site dialog box opens.



Select the IIS Web site that you want Quality Center to use. It is recommended that you use the **Default Web Site**.

Click **Next**.

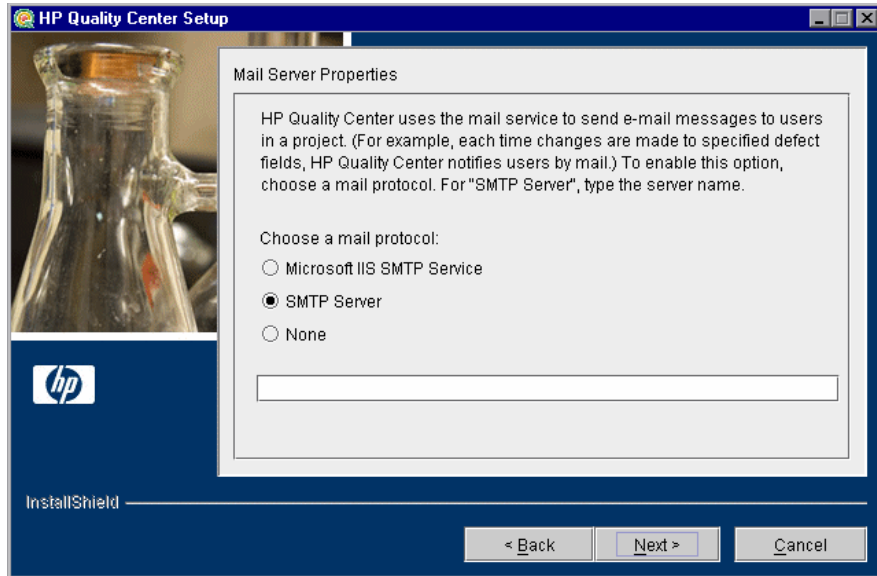
18 The HP Quality Center Components dialog box opens.



To help you get started with Quality Center, you can choose to install the Quality Center Demo Project. To work with the Quality Center Tutorial, you must install the Quality Center Demo Project and its accompanying sample Web-based travel reservation application.

Click **Next**.

19 The Mail Server Properties dialog box opens.



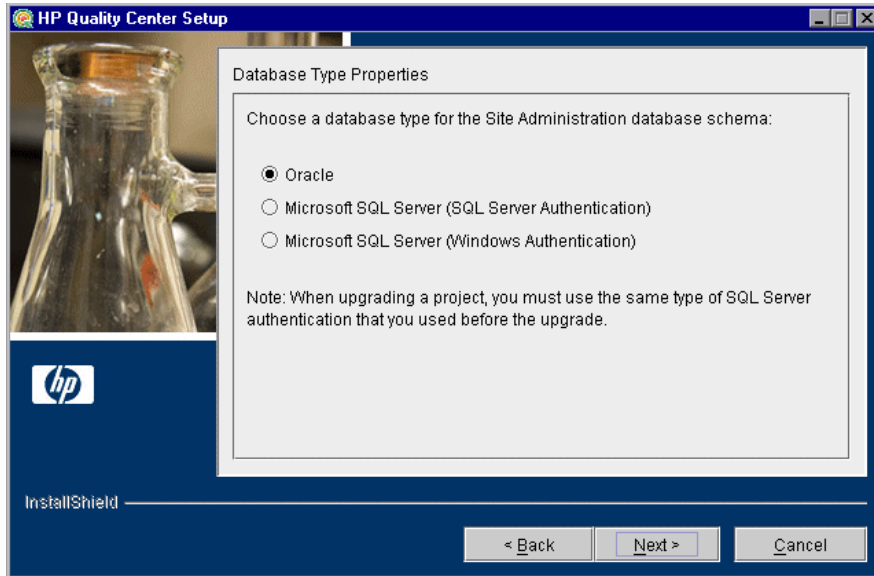
To enable Quality Center to send e-mails to users in a Quality Center project, choose a mail protocol. For **SMTP Server**, type the server name.

Click **Next**.

Note: To work with Microsoft IIS SMTP Service, perform the following steps:

- Open the Internet Information Services (IIS) Manager window.
 - In the Tree pane, right-click **Default SMTP Virtual Server** and choose **Properties**. The Default SMTP Virtual Server Properties dialog box opens.
 - In the Access tab, click the **Connection** button. The Connection dialog box opens. Choose **All except the list below** and click **OK**.
 - Click the **Relay** button. The Relay Restrictions dialog box opens. Choose **All except the list below** and click **OK**.
 - Click **OK** to close the Default SMTP Virtual Server Properties dialog box.
-

20 The Database Type Properties dialog box opens.



Select a database type for the Site Administration database schema.

If you select a Microsoft SQL Server, choose the authentication type:

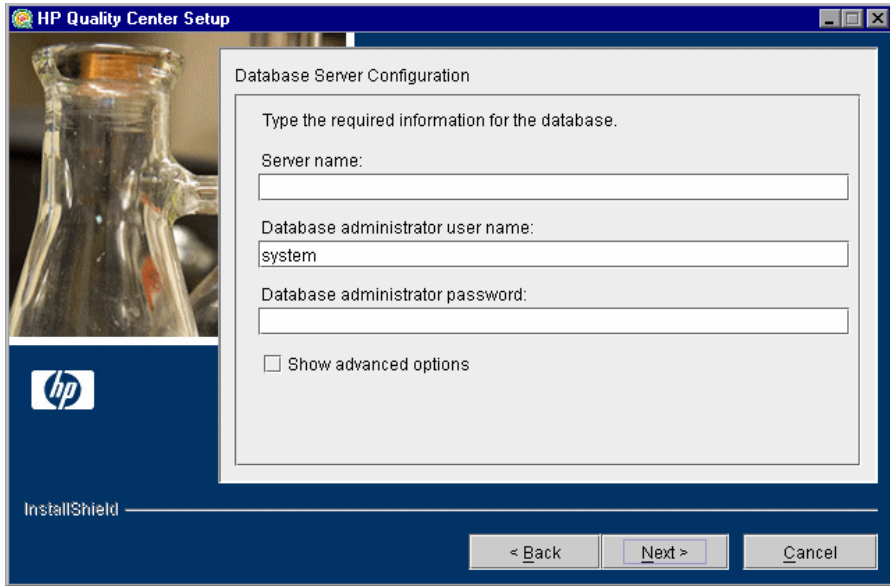
- ▶ **Microsoft SQL Server (SQL Server Authentication).** Authenticates the user to the database using a database user name and password.
- ▶ **Microsoft SQL Server (Windows Authentication).** Windows authentication relies on the user being authenticated by the operating system.

For more information on database requirements, see “Database Prerequisites for Oracle” on page 32, and “Database Prerequisites for Microsoft SQL” on page 38.

Note: When upgrading a project to Quality Center 9.2, you must use the same type of SQL authentication that you used before the upgrade.

Click **Next**.

21 The Database Server Configuration dialog box opens.



Specify the following database connection information:

- **Server name.** Type the database server name. For example, dbsrv01.
- **Database administrator user name.** Type the name of the user with the administrative permissions required to install Quality Center on the database server. Not applicable for **Microsoft SQL Server (Windows Authentication)**.
- **Database administrator password.** Type the database administrator password. Not applicable for **Microsoft SQL Server (Windows Authentication)**.
- **Show advanced options.** Select this option to define advanced options for your database type. These advanced options include the Site Administration database schema name and password, the database port, and the Oracle system identifier.

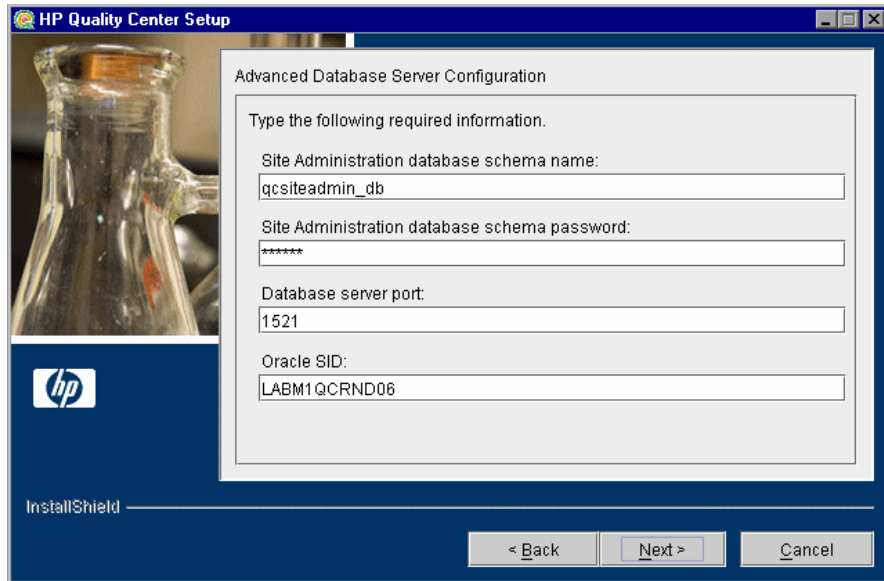
For more information on database requirements, see “Database Prerequisites for Oracle” on page 32, and “Database Prerequisites for Microsoft SQL” on page 38.

Note: If you are installing Quality Center using a named instance of SQL Server, you must install Quality Center using a non-named instance and then change it afterwards. For more information on how to use a named instance of SQL Server with Quality Center, refer to the Customer Support Knowledge Base (<http://support.mercury.com/cgi-bin/portal/CSO/kbBrowse.jsp>), select **TestDirector for Quality Center**, and search for Article Number 41443.

Click **Next**.

- 22** If you did not select **Show advanced options**, proceed to step 23 on page 70.

If you selected **Show advanced options**, the Advanced Database Server Configuration dialog box opens.



Specify the following advanced database connection information:

- **Site Administration database schema name.** Type a Site Administration database schema name, or accept the default schema name.

Note: When upgrading an existing Site Administration database schema to work in Quality Center 9.2, you must use the same name that you used before the upgrade.

- **Site Administration database schema password.** Type the password for accessing the Site Administration database. This is a required field. Not applicable for **Microsoft SQL Server (Windows Authentication)**.
- **Database server port.** Type the database server port number, or accept the default port number.

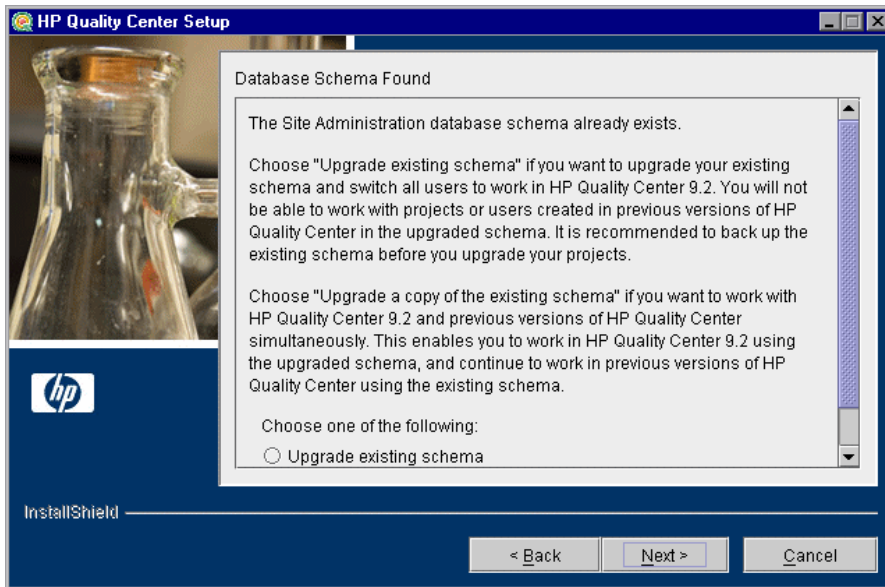
- **Oracle SID.** Type the Oracle system identifier. This is an Oracle parameter that identifies the specific Oracle instance on the host machine on which the Oracle server is installed. Not applicable for **Microsoft SQL Server**.

Click **Next**.

- 23** For **Oracle**, if the Site Administration database does not exist, proceed to step 25 on page 72.

For **Microsoft SQL Server**, if the Site Administration database does not exist, proceed to step 26 on page 74.

If the Site Administration database already exists, the Database Schema Found dialog box opens.



Choose one of the following schema upgrade options:

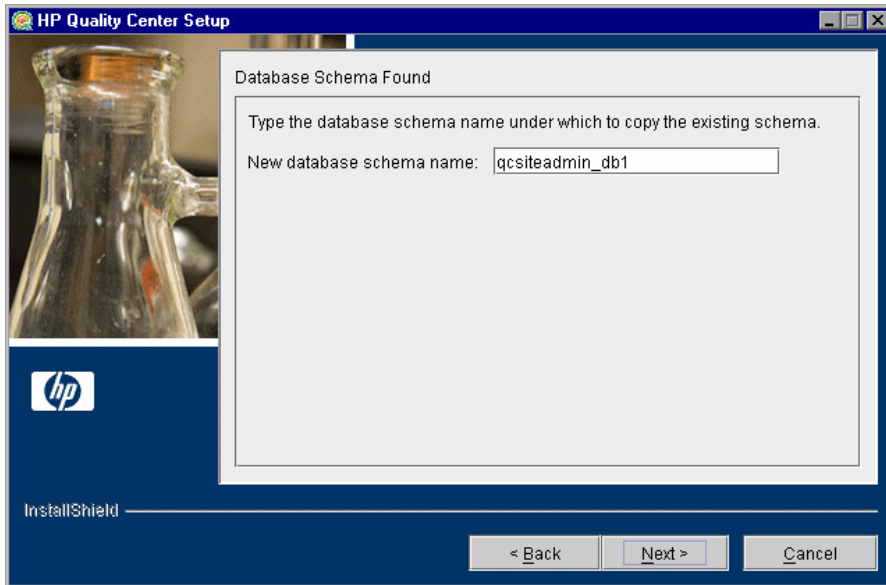
- ▶ **Upgrade existing schema.** Uses the existing Site Administration database schema. Choose this option if you want to upgrade the existing schema and switch all users to Quality Center 9.2.
- ▶ **Upgrade a copy of the existing schema.** Creates a copy of the existing Site Administration database schema, and upgrades the copy. Choose this option to work in Quality Center 9.2 and previous versions of Quality Center simultaneously.

Important: Consider carefully before deciding which schema upgrade option to use. For more details on the schema upgrade options, and additional notes and guidelines, see “Working with Previously Created Projects” on page 46.

Click **Next**.

24 If you selected **Upgrade existing schema**, proceed to step 26 on page 74.

If you selected **Upgrade a copy of the existing schema**, the Database Schema Found dialog box opens.



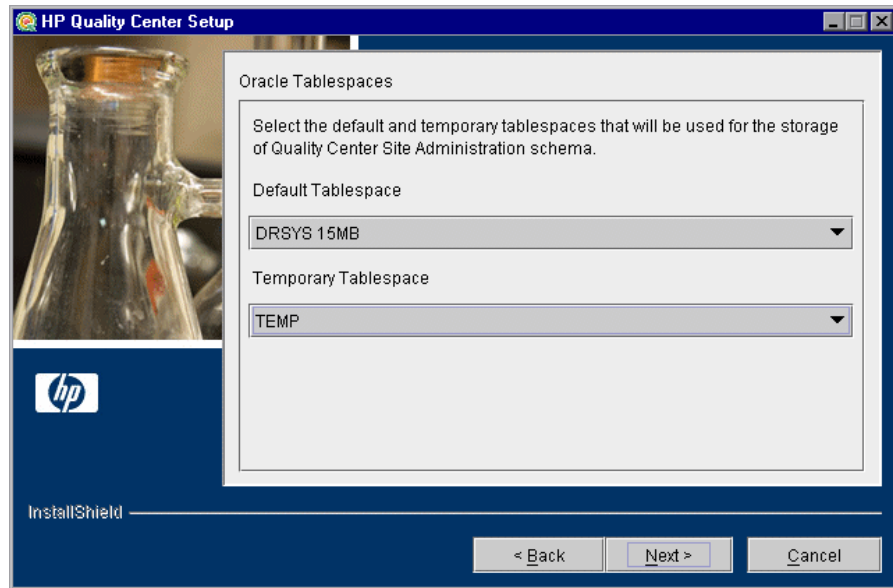
Choose a schema name under which to copy the existing Site Administration database. By default, Quality Center saves it with an incremental number suffix (for example, qcsiteadmin_db1).

Click **Next**, and proceed to step 26 on page 74.

25 If you are installing Quality Center on a **Microsoft SQL Server**, proceed to step 26 on page 74.

If you are installing Quality Center on a second node, or if the Site Administration database already exists, the new database schema is created in the same tablespace as the existing schema. Proceed to step 26 on page 74.

If you are installing Quality Center on **Oracle**, the Oracle Tablespaces dialog box opens.



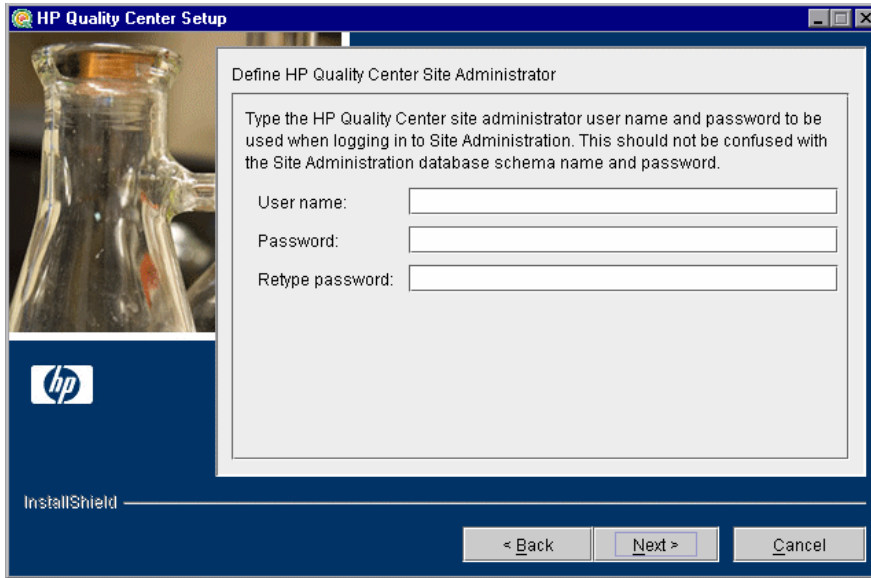
Under **Default Tablespace**, select a default storage location from the list.

Under **Temporary Tablespace**, select a temporary storage location from the list.

Note: To avoid insufficient tablespace for installing Quality Center, it is recommended to have at least 60 MB of free space in the default storage location, and 30 MB of free space in the temporary storage location.

Click **Next**.

26 The Define HP Quality Center Site Administrator dialog box opens.



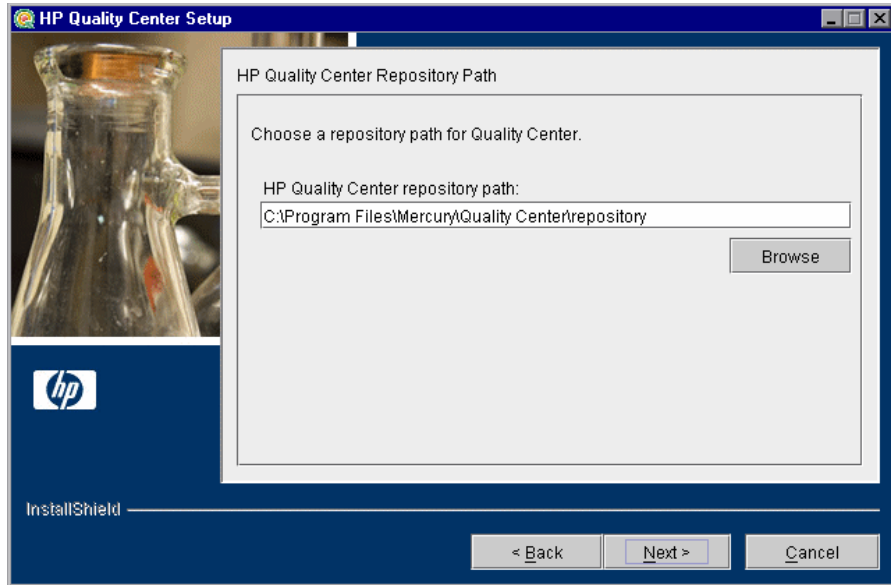
You use the site administrator name and password that you define in this dialog box to log in to Quality Center Site Administration for the first time. After installation, you can change the site administrator or add other site administrators from Site Administration.

Type a site administrator **User name** and **Password**, and retype the password to confirm.

Notes:

- It is important that you remember the site administrator user name and password as otherwise you cannot log in to Site Administration.
 - For an existing database schema, if you are using an existing user, the password should be the same as the one in the previous version of Quality Center. For more information, see “Quality Center Site Administration Login Credentials” on page 42.
-

Click **Next**.

27 The HP Quality Center Repository Path dialog box opens.

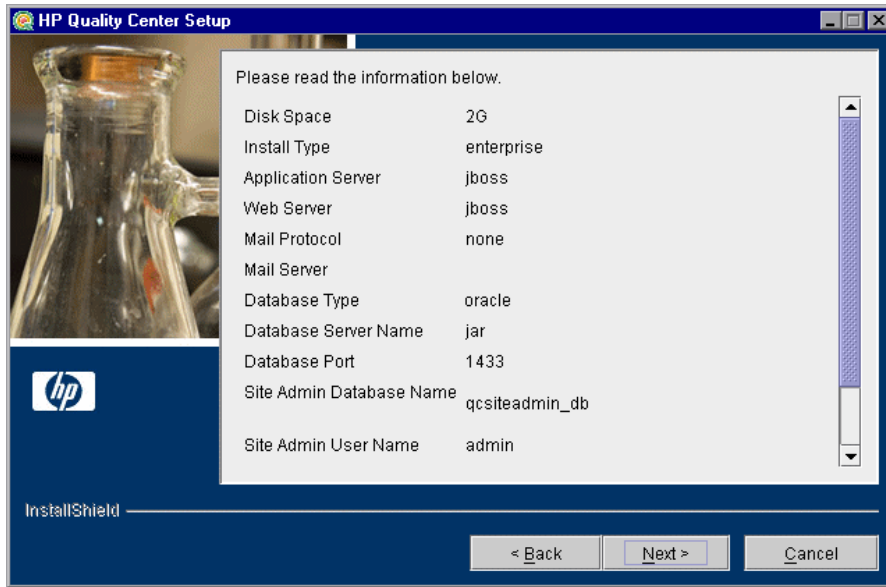
In the **HP Quality Center repository path** box, click the browse button to choose a repository path, or accept the default path.

For more information on the Repository path, see “Quality Center Repository Path” on page 42.

Note: To work with cluster nodes, make sure that all nodes have access to this path.

Click **Next**.

28 The Installation Summary dialog box opens.

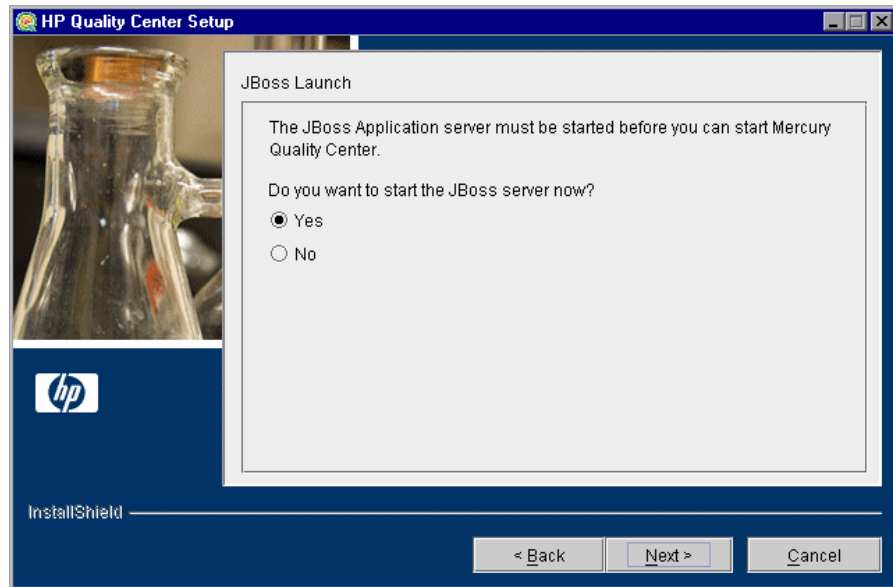


To review or change any settings, click **Back**.

To accept the settings and start the installation process, click **Next**. The installation process starts.

29 If your application server is other than JBoss, proceed to step 30.

If your application server is JBoss, the JBoss Launch dialog box opens.



Choose one of the following options:

- ▶ **Yes.** To start the JBoss server now.
- ▶ **No.** To manually start the JBoss server later.

Click **Next**.

30 When the installation process completes, the Installation Complete dialog box opens. Click **Finish**.

Note: If you are using JBoss, Quality Center is automatically deployed on your application server. If you are using another application server, you must deploy Quality Center manually. For more information on manually deploying Quality Center, see “Manually Deploying Quality Center on WebLogic” on page 83, and “Manually Deploying Quality Center on WebSphere” on page 87.

- 31** If you are prompted to restart your computer, you can choose to restart your computer at a later time, but you must restart your computer before you configure or use Quality Center. If you are prompted to restart, it is strongly recommended that you restart your computer as soon as possible. You must also restart your computer before you install any Quality Center related files, such as integration add-ins.

Note: To work with Quality Center, you might need to disable conflicting applications that are running on the Quality Center server machine. For a list of these applications, refer to the Customer Support Knowledge Base (<http://support.mercury.com/cgi-bin/portal/CSO/kbBrowse.jsp>), select **TestDirector for Quality Center**, and search for Article Number 20022.

- 32** You can use the Quality Center Checker to verify that the main Quality Center server components are successfully installed. You can also verify information such as directory paths, operating systems, permissions, resources, and port availability. For more information on the Quality Center Checker, refer to the *HP Quality Center Administrator's Guide*.

Installing Quality Center in Silent Mode

You can install Quality Center using a silent installation. A silent installation runs the entire setup process in the background without requiring you to navigate through the setup screens and input your selections. Instead, all configuration parameters are allocated values you define in a response file. To run silent installations for different configurations, you can create multiple response files.

This section includes the following topics:

- ▶ Notes and Limitations
- ▶ Running a Silent Installation

Notes and Limitations

Before running a silent installation, consider the following issues:

- ▶ When running an installation in silent mode, no messages are displayed. Instead, you can view installation information in the log file, including information on whether the installation was successful. The installation log file can be found under the `%tmp%\Mercury` directory for Windows platforms. The log file can also be found under the home directory (`~`) of the user installing Quality Center for Solaris, Linux, and AIX platforms.
- ▶ The parameter `-silent` should appear only once, either in the response file or in the command line. If it appears in both the response file and the command line, the installation does not run. No error message displays.
- ▶ To troubleshoot installation issues, you can generate a log file for the launcher by adding the following command line to the launcher:
`-is:log <path of output log>`
For example:
`-is:log c:\temp\launcher.log`

This log file provides additional information not otherwise displayed, such as errors that may occur when launching the installation.

Running a Silent Installation

You run a silent installation using a response file. You can create a response file using a response file template or by recording installation values during an installation.

To run a silent installation:

- 1 Uninstall any previous installations of Quality Center from the server machine.
- 2 You can create a response file using a response file template or by recording installation values during an installation.
 - To create a response file template, and then modify it to meet your installation needs, run the command line:

Platform	Command
Windows	setup.exe --options-template <response file full path>
Solaris	setupSolaris.bin --options-template <response file full path>
Linux	setup_Linux.bin --options-template <response file full path>
AIX	setup_AIX.bin --options-template <response file full path>

- To create a response file by recording installation values during an installation, run the command line:

Platform	Command
Windows	setup.exe --options-record <response file full path>
Solaris	setupSolaris.bin --options-record <response file full path>
Linux	setup_Linux.bin --options-record <response file full path>
AIX	setup_AIX.bin --options-record <response file full path>

- 3** To run a silent installation using a response file, run the command line:

Platform	Command
Windows	setup.exe –silent –options <response file full path>
Solaris	setupSolaris.bin –silent –options <response file full path>
Linux	setup_Linux.bin –silent –options <response file full path>
AIX	setup_AIX.bin –silent –options <response file full path>

3

Manually Deploying Quality Center on WebLogic

To work with Quality Center on a WebLogic application server, you must manually deploy Quality Center after installation. You also need to manually undeploy and redeploy Quality Center when installing patches or updating Quality Center files.

Notes:

- ▶ For the latest updates on the information in this chapter, refer to the Customer Support Knowledge Base (<http://support.mercury.com/cgi-bin/portal/CSO/kbBrowse.jsp>), select **TestDirector for Quality Center**, and search for Article Number 35712.
 - ▶ You can change the WebLogic user name without having to reinstall Quality Center. For more information, refer to the Customer Support Knowledge Base (<http://support.mercury.com/cgi-bin/portal/CSO/kbBrowse.jsp>), select **TestDirector for Quality Center**, and search for Article Number 42841.
-

This chapter includes:

- ▶ Manually Deploying Quality Center on WebLogic on page 84
- ▶ Manually Undeploying Quality Center on WebLogic on page 85

Manually Deploying Quality Center on WebLogic

You must manually deploy Quality Center on the WebLogic application server.

To manually deploy Quality Center on WebLogic:

- 1** Navigate to the Quality Center home directory, and open the `\application` folder. By default, the home directory is `C:\Program Files\Mercury\Quality Center` on Windows, and `/opt/Mercury/QualityCenter` on Solaris, Linux, and AIX.
- 2** Copy the `mtours.war`, `qcbn.war`, and `sabin.war` files to the `<WEBLOGIC_HOME>/server` directory.

Note: The `mtours.war` file is only available if you installed Mercury Tours for the Quality Center Demo project.

- 3** Log in to the WebLogic Management Console and perform the following:
 - a** Navigate to **MyServer > Deployments > Web Application Modules**, and click the **Configurations** tab.
 - b** Click the **Deploy a new Web Application Module** link.
 - c** In the `<WEBLOGIC_HOME>/server` directory, select the `sabin.war` file, and start the WebLogic application server.
 - d** Click **Target Module**, and then click **Deploy**.
 - e** Repeat to deploy `qcbn.war` and `mtours.war`.
- 4** When the deployment process completes, start Quality Center. For more information, see “Starting Quality Center.”

Manually Undeploying Quality Center on WebLogic

If you install a patch or update the `qcbn.war` or `sabin.war` files, you need to undeploy and redeploy the war files for the changes to take effect in Quality Center.

To manually undeploy Quality Center on WebLogic:

- 1** Log in to the WebLogic Management Console and perform the following:
 - a** Navigate to **MyServer > Deployments > Web Application Modules**, and click the **Configurations** tab.
 - b** Click the **Delete** button adjacent to **qcbn**.
 - c** Click **Yes** to confirm.
 - d** Click the **Continue** link.
 - e** Repeat to undeploy **sabin** and **mtours**.
- 2** Delete the war files from `<WEBLOGIC_HOME>/server`.

Note: Do not delete the subdirectories under the `\application` directory. These subdirectories are required for third-party integration add-ins like Version Control.

4

Manually Deploying Quality Center on WebSphere

To work with Quality Center on a WebSphere application server, you must manually deploy Quality Center after installation. You also need to manually undeploy and redeploy Quality Center when installing patches or updating Quality Center files.

Note: For the latest updates on the information in this chapter, refer to the Customer Support Knowledge Base (<http://support.mercury.com/cgi-bin/portal/CSO/kbBrowse.jsp>), select **TestDirector for Quality Center**, and search for Article Number 38493.

This chapter includes:

- ▶ Manually Deploying Quality Center on WebSphere on page 88
- ▶ Manually Undeploying Quality Center on WebSphere on page 90

Manually Deploying Quality Center on WebSphere

You must manually deploy Quality Center on the WebSphere application server.

Note: You should verify the default maximum upload file size on the WebSphere application server. If the **qcbn.war** or **sabin.war** file size is larger than the default file size, you must increase the default maximum upload file size accordingly.

To manually deploy Quality Center on WebSphere:

- 1** Start the WebSphere application server.
- 2** Launch the WebSphere Administrative Console and perform the following steps to deploy the Quality Center **sabin.war**, **qcbn.war**, and **mtours.war** files:
 - a** In the Administrative Console, choose **Applications > Install New Application**.
 - b** Enter the local path of the **sabin.war** file, that was created during the installation of Quality Center. For example:
C:\Program Files\Mercury\Quality Center\application\sabin.war
 - c** Enter **sabin** as the context root of the Web module, and click **Next**.
 - d** On the subsequent screens, choose the default options, and click **Next** until you get to the last screen. Click **Finish**.
 - e** After deployment has finished, click **Save to Master Configuration**, and then click **Save**.

f Repeat to deploy **qcbn.war** and **mtours.war**.

Notes:

- ▶ It takes more time to deploy **qcbn.war** than **sabin.war**.
 - ▶ The **mtours.war** file is only available if you installed Mercury Tours for the Quality Center Demo project.
-

- 3** Set the Web applications class loader policy for the **sabin.war**, **qcbn.war**, and **mtours.war** files:
 - a** Choose **Applications > Enterprise Applications > sabin_war**.
 - b** Click the **Local Topology** tab and choose **sabin_war > Web Module > sabin.war**.
 - c** Set **Classloader Mode** to **PARENT_LAST**. Click **OK**.
 - d** Click the **Save** link.
 - e** Click the **Save** button.
 - f** Repeat for **qcbn.war** and **mtours.war**.
 - 4** Stop and restart the WebSphere application server.
 - 5** Start the deployed applications (Site Administrator and Quality Center) from **Applications > Enterprise Applications**.
 - 6** When the deployment process completes, start Quality Center. For more information, see “Starting Quality Center” on page 100.
-

Note: For information on how to install a Quality Center version control add-in on a WebSphere application server, refer to the Customer Support Knowledge Base (<http://support.mercury.com/cgi-bin/portal/CSO/kbBrowse.jsp>), select **TestDirector for Quality Center**, and search for Article Number 38951.

Manually Undeploying Quality Center on WebSphere

If you install a patch or update the **qcbn.war** or **sabin.war** files, you need to undeploy and redeploy the war files for the changes to take effect in Quality Center.

To manually undeploy Quality Center on WebSphere:

- 1** Start the WebSphere application server.
- 2** Launch the WebSphere Administrative Console and perform the following steps to undeploy the war files:
 - a** In the Administrative Console, choose **Applications > Enterprise Application**.
 - b** Select **sabin.war** and **qcbn.war** and click **Stop**.
 - c** Select **sabin.war** and **qcbn.war** and click **Uninstall**.

Note: Do not delete the JBoss installation. JBoss deployment is required for third-party integration add-ins like Version Control.

5

Manually Integrating JBoss with Apache

To use Quality Center with an Apache Web server, you need to manually configure the Apache Web server to redirect requests to the JBoss application server.

This chapter includes:

- ▶ About Manually Integrating JBoss with Apache on page 91
- ▶ Integrating JBoss with Apache on Windows on page 92
- ▶ Integrating JBoss with Apache on Solaris or Linux on page 93
- ▶ Apache-JBoss Integration Configuration Files on page 94

About Manually Integrating JBoss with Apache

When you install Quality Center, it does not automatically configure Apache to redirect requests to the JBoss application server. You must perform this configuration manually. The Quality Center installation DVD contains all the required files to enable you to configure the Apache-JBoss integration on Windows, Solaris, and Linux platforms.

All requests handled by the Apache Web server are redirected to a Tomcat server (which is a Servlet container delivered with JBoss). The communication between Apache and JBoss is implemented by using the AJP13 protocol, using an appropriate connector (called **mod_jk**).

Integrating JBoss with Apache on Windows

You must manually integrate JBoss on the Apache Web server.

To integrate JBoss with Apache on Windows:

- 1** Install Quality Center with JBoss as the application server and Web server.
- 2** Install the Apache Web server. Quality Center supports Apache 2.0.54 (which is also included on the installation DVD in the **Apache Integration** folder). To install from the DVD, run the **apache_2.0.54-win32-x86.exe** file, and follow the on-screen instructions.
- 3** Navigate to **<Apache Home directory>\conf**, and unzip the **apache_jboss_win32.zip** file which is included on the installation DVD in the **Apache Integration** folder. This creates a new directory called **qc_integration** under the **<Apache Home directory>\conf** directory.
- 4** Add the following lines to the **httpd.conf** file in the **<Apache Home directory>\conf** directory:

```
#Quality Center integration:This includes points to the Jboss-Apache  
#configuration file (for Quality Center)
```

```
#Load mod_jk module
```

```
LoadModule jk_module conf\qc_integration\mod_jk.dll
```

```
Include conf\qc_integration\mod_jk.conf
```

- 5** Restart the Apache Web server.

You can now connect to your Quality Center site using the following URL:
http://<Quality_Center_server_name>/qcbn.

For more details regarding the Apache-Jboss integration configuration files, see “Apache-JBoss Integration Configuration Files” on page 94.

Integrating JBoss with Apache on Solaris or Linux

You must manually integrate JBoss on the Apache Web server for Solaris or Linux.

To integrate JBoss with Apache on Solaris or Linux:

- 1** Install Quality Center with JBoss as the application server and Web server.
- 2** Install the Apache Web server. Quality Center supports Apache 2.0.54 (which is also included in the **Apache Integration** folder on the installation DVD).

Platform	To install:
Solaris	Uncompress apache_2.0.54_solaris.tar under the /opt/ directory (referred to here as <install dir>). This creates a new directory called apache2 under <install dir>.
Linux	Uncompress apache_2.0.54_linux.tar under the /opt/ directory (referred to here as <install dir>). This creates a new directory called apache2 under <install dir>.

- 3** Restart the Apache Web server.

You can now connect to your Quality Center site using the following URL:
http://<Quality_Center_server_name>/qcbn.

For more details regarding the Apache-Jboss integration configuration files, see “Apache-JBoss Integration Configuration Files” below

Apache-JBoss Integration Configuration Files

The following files are related to the Apache-JBoss integration:

- ▶ In Windows, **mod_jk.dll**, and in Solaris or Linux, **mod_jk.so**. This file is the connector between the Apache Web server and the Tomcat component delivered with JBoss.
- ▶ **httpd.conf**. This file is the connector between the Apache Web server and the Tomcat component delivered with JBoss.

The following lines can be found at the end of the file:

On Windows:

```
LoadModule jk_module conf\qc_integration\mod_jk.dll
Include conf\qc_integration\mod_jk.conf
```

On Solaris or Linux:

```
LoadModule jk_module conf/qc_integration/mod_jk.so
Include conf/qc_integration/mod_jk.conf
```

- ▶ **workers.properties**. This file defines a Tomcat instance that waits to execute requests on behalf of a Web server (in this case Apache).

The content of the file defines a worker (an instance of Tomcat) that handles Quality Center requests (in this case the worker name is `jboss0_ajp13_qc`.)

```
# Defining a worker named jboss0_ajp13_qc and of type ajp13
# Note that the name and the type do not have to match.
worker.list=jboss0_ajp13_qc
worker.jboss0_ajp13_qc.port=8009
worker.jboss0_ajp13_qc.type=ajp13
worker.jboss0_ajp13_qc.host=localhost
worker.jboss0_ajp13_qc.lbfactor=50
worker.jboss0_ajp13_qc.cachesize=10
worker.jboss0_ajp13_qc.cache_timeout=600
worker.jboss0_ajp13_qc.socket_keepalive=1
worker.jboss0_ajp13_qc.socket_timeout=300
```

- **mod_jk.conf.** This is a configuration file containing information describing which requests should be redirected from Apache to the Tomcat instance. It also contains the path to the **workers.properties** file and general configuration issues.

On Windows:

```
# Where to find workers.properties
# Update this path to match your conf directory location (put workers.properties
next to httpd.conf)
JkWorkersFile conf\qc_integration\workers.properties
# Where to put jk logs
# Update this path to match your logs directory location (put mod_jk.log next to
access_log)
JkLogFile conf\qc_integration\log\mod_jk.log
# Set the jk log level [debug/error/info]
JkLogLevel info
# Select the log format
JkLogStampFormat "[%a %b %d %H:%M:%S %Y] "
# JkOptions indicate to send SSL KEY SIZE,
JkOptions +ForwardKeySize +ForwardURICompat -ForwardDirectories
# JkRequestLogFormat set the request format
JkRequestLogFormat "%w %V %T"
# Send everything for context /examples to worker named worker1 (ajp13)
JkMount /memory jboss0_ajp13_qc
JkMount /memory/* jboss0_ajp13_qc
JkMount /jk jboss0_ajp13_qc
JkMount /jk/* jboss0_ajp13_qc
JkMount /sabin jboss0_ajp13_qc
JkMount /sabin/* jboss0_ajp13_qc
JkMount /qcbn jboss0_ajp13_qc
JkMount /qcbn/* jboss0_ajp13_qc
```

► On Solaris or Linux:

```
# Where to find workers.properties
# Update this path to match your conf directory location (put workers.properties next
to httpd.conf)
JkWorkersFile conf/qc_integration/workers.properties
# Where to put jk logs
# Update this path to match your logs directory location (put mod_jk.log next to
access_log)
JkLogFile    conf/qc_integration/log/mod_jk.log
# Set the jk log level [debug/error/info]
JkLogLevel   info
# Select the log format
JkLogStampFormat "[%a %b %d %H:%M:%S %Y] "
# JkOptions indicate to send SSL KEY SIZE,
JkOptions    +ForwardKeySize +ForwardURICompat -ForwardDirectories
# JkRequestLogFormat set the request format
JkRequestLogFormat "%w %V %T"
# Send everything for context /examples to worker named worker1 (ajp13)
JkMount /memory jboss0_ajp13_qc
JkMount /memory/* jboss0_ajp13_qc
JkMount /jk jboss0_ajp13_qc
JkMount /jk/* jboss0_ajp13_qc
JkMount /sabin jboss0_ajp13_qc
JkMount /sabin/* jboss0_ajp13_qc
JkMount /qcbn jboss0_ajp13_qc
JkMount /qcbn/* jboss0_ajp13_qc
```


6

Getting Started

This chapter introduces Quality Center options and resources. It also explains how to start Quality Center.

This chapter includes:

- ▶ Browsing the Quality Center Program Folder on page 97
- ▶ Starting and Stopping Quality Center Services on page 98
- ▶ Starting Quality Center on page 100

Browsing the Quality Center Program Folder

In Windows, after the Quality Center setup process is complete, the following items are added to your HP Quality Center program folder (**Start > Programs > HP Quality Center**):

Option	Description
HP Quality Center	Opens the Quality Center application. For more information, refer to the <i>HP Quality Center User's Guide</i> .
Mercury Tours Demo	Opens a sample flight reservation Web application. This Web application is used as a basis for the Quality Center Tutorial. For more information, refer to the <i>HP Quality Center Tutorial</i> . Note: This application is only available if you selected it during the Quality Center installation.
Readme	Opens the Quality Center Readme, which provides the latest news and information about Quality Center.

Option	Description
Documentation Library	Opens an online help system that provides access to Quality Center guides and references that are available online, in PDF format, or both.
Quality Center Checker	A diagnostic tool that tests many of the Quality Center server components used by Quality Center. Running the Quality Center Checker can pinpoint the cause of many server side problems associated with accessing Quality Center. For more information, refer to the <i>HP Quality Center Administrator's Guide</i> .
Site Administration	Opens the Site Administration application. For more information, refer to the <i>HP Quality Center Administrator's Guide</i> .

Note: If you are using an application server other than JBoss, only HP Quality Center, Mercury Tours Demo, and Quality Center Checker are available in the program folder.

Starting and Stopping Quality Center Services

This section describes how to start or stop Quality Center services from Windows, Linux, Solaris, and AIX.

To start or stop Quality Center services from Windows:



In the system tray, right-click the Quality Center icon and choose **Start Quality Center** or **Stop Quality Center**.

Tip: If you are working with JBoss, you can also start and stop Quality Center from the **Mercury Quality Center** service in the Services manager.

To start or stop Quality Center services from Linux, Solaris, or AIX:

- ▶ If you are working with JBoss, run the following commands:

To start:	<QC installation directory>/jboss/bin/run.sh start
To stop:	Use one of the following options: <ul style="list-style-type: none"> ▶ <QC installation directory>/jboss/bin/run.sh stop (or Ctrl-C in console) ▶ kill <jboss process ID>

- ▶ If you are working with WebLogic, run the following commands:

To start:	<WebLogic installation directory>/user_projects/domains/ <QC domain name>/startWeblogic.sh
To stop:	Use one of the following options: <ul style="list-style-type: none"> ▶ <WebLogic installation directory>/user_projects/domains/ <QC domain name>/stopWeblogic.sh ▶ kill <weblogic process ID>

- ▶ If you are working with WebSphere, run the following commands:

To start:	<WebSphere installation directory>/WebSphere/AppServer/bin/startServer.sh <WebSphere server name>
To stop:	<WebSphere installation directory>/WebSphere/AppServer/bin/stopServer.sh <WebSphere server name>

Starting Quality Center

You launch Quality Center on your workstation from your Web browser.

Note: Multiple instances of Quality Center using the same browser process are unsupported. To open another instance of Quality Center, you must launch a new browser process.

To start Quality Center:

- 1 Open your Web browser and type your Quality Center URL
`http://<Quality Center server name>[:<port number>]/qcbn`.

The Quality Center Options window opens.



The Quality Center Options window contains the following links:

Option	Description
Quality Center	Opens the Quality Center application. For more information, refer to the <i>HP Quality Center User's Guide</i> .
Site Administration	Opens the Site Administration application. For more information, refer to the <i>HP Quality Center Administrator's Guide</i> .
Add-ins Page	Opens the Quality Center Add-ins page. For more information, see "Installing Quality Center Add-ins" on page 105.
Readme	Opens the Quality Center Readme, which provides the latest news and information about Quality Center.

- 2** Click the **Quality Center** link. The first time you run Quality Center, the following files are downloaded to your computer:

File Name	Description
American.adm & Roget.adt	Enables spell checking and thesaurus capabilities.
bp_exec_agent.exe	Contains the Business Process Execution Agent.
bp_test.ocx	Contains the Business Process Test Module.
BPTReports.cab	Contains the files for creating Business Process reports in QuickTest Professional and WinRunner.
Client.cab	Contains the user interface and configuration files for running Quality Center using Microsoft .NET framework.
comp_type.ini	Enables the various types of tests included in the Business Components module.
dotnetfx.exe	Installs Microsoft .NET Framework 2.0 (only downloaded if .NET Framework 2.0 is not already installed on your machine).

File Name	Description
dsoframer.ocx	Contains the Rich Content Editor.
ExtensibilityAPI.dll	Contains the Quality Center client user interface Extensibility API.
Free_MSR_Player.exe	Enables the Micro Player.
MerResourceLogger.dll	Enables a common view for log files.
OTAClient.dll	Contains the Open Test Architecture API for Quality Center projects.
OTAXml.dll & OTaReport.dll	Enables reporting capabilities.
QCClientUI.ocx	Contains the Quality Center user interface.
QCRasUI.ocx	Contains the Excel Reports.
sr_exec_agnt.exe	Contains the System Test Remote Agent.
SRunner.ocx	Enables VAPI-XP.
TdComandProtocol.exe	Enables the connection between the mail service and Quality Center.
TDTmpl.tcf	The template for the Document Generator.
test_type.ini	Enables the various types of tests included in the Test Plan module.
WebClient.dll	Contains a gate for Quality Center client/server communication.
wexctrl.exe	Enables automated test execution.
WindowsInstaller-KB893803-v2-x86.exe	Installs a Windows software update that enables the installation of Microsoft .NET Framework (only downloaded if Windows Installer 3.1 is not already installed on your machine).
XGO.ocx	Enables the Execution Flow tab in the Test Lab module.

Each time Quality Center is run, it carries out a version check. If it detects a newer version, it downloads the necessary files to your machine.

Note: Quality Center prompts you to install Microsoft .NET Framework 2.0 if it is not already installed on your machine. To perform the installation, follow the instructions in the Software Update Installation Wizard (if Windows Installer 3.1 is not installed) and in the Microsoft .NET Framework 2.0 Setup.

After the Quality Center version has been checked and files have been updated if necessary, the Quality Center Login window opens.



The screenshot shows the Quality Center login interface. It features a dark blue header with the HP logo and the text "Quality Center". Below the header is a light gray area containing a login form. The form includes the following elements:

- Login Name:
- Password:
- Automatically log in to my last domain and project on this machine
- Authenticate button
- Domain:
- Project:
- Login button

- 3 In the **Login Name** box, type your user name.
- 4 In the **Password** box, type the password.
- 5 Select the **Automatically log in to my last domain and project on this machine** check box if you want Quality Center to automatically log in to the last project in which you were working.
- 6 Click **Authenticate**. Quality Center verifies your user name and password and determines which domains and projects you can access. If you specified automatic login, Quality Center opens.

If authentication fails, check your user name and password are correct and try again.

- 7 In the **Domain** list, select a domain. By default, the last domain in which you were working is displayed.
- 8 In the **Project** list, select a project. By default, the last project in which you were working is displayed.

If the demonstration project was installed on the Quality Center server, you can select the **QualityCenter_Demo** project (make sure that you select **DEFAULT** in the **Domain** list). The project helps introduce you to Quality Center and includes sample requirements, tests, test sets, test runs, and defects. For more information, refer to the *HP Quality Center Tutorial*.

- 9 Click **Login**. Quality Center opens and displays the module (Releases, Requirements, Test Plan, Test Lab, or Defects) in which you last worked during your previous session.

7

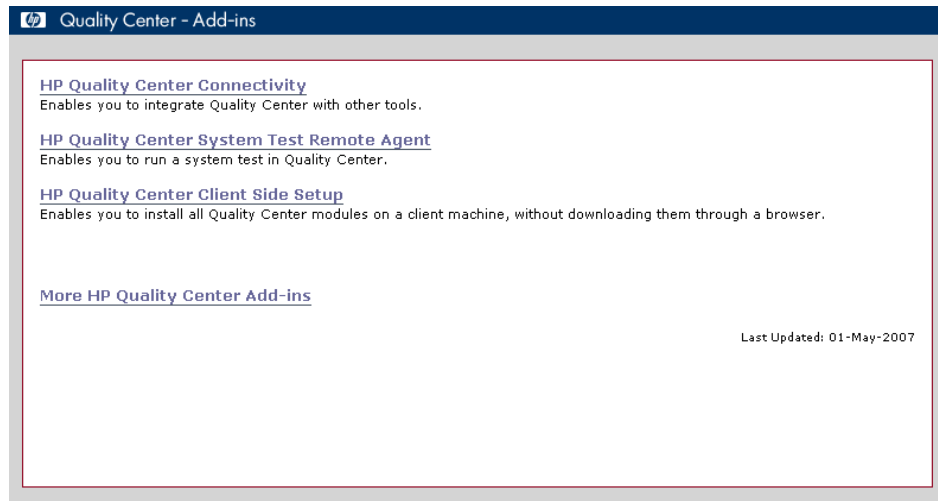
Installing Quality Center Add-ins

Quality Center offers integrations with HP testing tools as well as third-party, synchronization, and version control tools. To integrate Quality Center with other tools, you may need to install appropriate add-ins from the Quality Center Add-ins page.

Note: If you are integrating Quality Center with another tool, you can verify that you are using a supported version. On the Add-ins page, click the **More Quality Center Add-ins** link, and choose the appropriate Quality Center integrations matrix.

To install a Quality Center add-in:

- 1 Click **Add-ins Page** in the Quality Center Options window or choose **Help > Add-ins Page** in the Quality Center main window. The Quality Center Add-ins page opens.



The following Quality Center add-ins are available:

- ▶ **HP Quality Center Connectivity.** Enables you to integrate Quality Center with other tools.
- ▶ **HP Quality Center System Test Remote Agent.** Enables you to run a system test on a machine. You can run a system test to retrieve a machine's system information, view a captured desktop image of a test run on a machine, or restart a machine.
- ▶ **HP Quality Center Client Side Setup.** Enables you to install all Quality Center modules on a client machine, without downloading them through a browser.
- ▶ **More HP Quality Center Add-ins.** Enables you to install additional add-ins. This page is continuously updated by HP. The add-ins include integrations with HP tools and third-party tools.

- 2** Click an add-in link. A page with additional information about the add-in opens. If you click the More Quality Center Add-ins link, the More Quality Center Add-ins page opens, enabling you to select additional add-ins.
- 3** Click the add-in guide link (where applicable) for instructions on using the add-in.
- 4** Click the **Download Add-in** link to download and install the add-in. Follow the instructions on your screen.

8

Verifying the IIS Configuration

If you encounter a problem in the Internet Information Server (IIS) component after you install Quality Center on Windows, you should check the IIS configuration settings.

This chapter includes:

- IIS Account Settings on page 109
- Quality Center Virtual Directory Settings on page 111

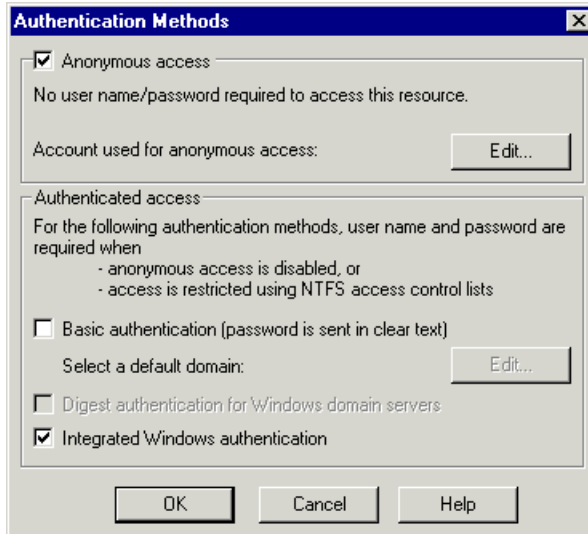
IIS Account Settings

The Quality Center installation creates the IUSR_<COMPUTER NAME> account. IIS uses this account to redirect users from IIS to Quality Center when they open Quality Center.

To check the IIS account:

- 1** Open the Internet Information Services Manager:
 - If you have IIS 5.0, from the **Start** menu, choose **Programs > Administrative Tools > Internet Services Manager**. The Internet Information Services window opens.
 - If you have IIS 6.0, from the **Start** menu, choose **Programs > Administrative Tools > Internet Information Services (IIS) Manager**. The Internet Information Services (IIS) Manager window opens.
- 2** Expand the tree in the left pane, if needed, and select the directory in which your Quality Center virtual directory is located. This is the IIS Web site that was selected during the Quality Center installation (for example, **Default Web Site**). For more information, see Chapter 2, “Installing Quality Center.”

- 3 Right-click the Quality Center virtual directory (by default, **quality_center**) and choose **Properties**. The quality_center Properties dialog box opens.
- 4 Click the **Directory Security** tab.
- 5 In the Anonymous Access and Authentication Control section, click the **Edit** button. The Authentication Methods dialog box opens.



The Authentication Methods dialog box contains three methods for setting up the user account used by IIS to authenticate user access: anonymous access, basic authentication, and integrated Windows authentication.

► **Anonymous Access Authentication.**

If **Anonymous access** is selected, when a user logs on to <Quality Center server>/qcbn or <Quality Center server>/sabin, IIS redirects the connection from IIS to Quality Center.

To check or change this account, click the Anonymous Access **Edit** button. The user account for IIS anonymous access is IUSR_<COMPUTER NAME>.

► **Basic Authentication.**

If **Basic authentication** is selected, when a user logs on to <Quality Center server>/qcbn or <Quality Center server>/sabin, IIS authenticates the user according to the Windows domain.

To check the Windows domain for basic authentication, select the **Basic authentication** check box and click **Yes** to confirm. Then, click the Basic Authentication **Edit** button. The Basic Authentication Domain dialog box opens. If a domain is defined in the **Domain Name** box, the client can access IIS with any user account from that domain. If no domain is defined, the local domain is used, and the client can access IIS with any local user account.

When basic authentication is selected, the Web browser transmits user accounts across the network in an unencrypted form.

► **Integrated Windows Authentication.**

The Integrated Windows Authentication method is best suited for an intranet environment. IIS uses the current Windows user information on the client machine to authenticate the user according to the Windows domain.

Quality Center Virtual Directory Settings

Verify that the default virtual directory (by default, **quality_center**) is configured properly.

To check the configuration for the Quality Center virtual folders:

- 1 Open the Internet Information Services Manager:
 - If you have IIS 5.0, from the **Start** menu, choose **Programs > Administrative Tools > Internet Services Manager**. The Internet Information Services window opens.
 - If you have IIS 6.0, from the **Start** menu, choose **Programs > Administrative Tools > Internet Information Services (IIS) Manager**. The Internet Information Services (IIS) Manager window opens.

- 2 Expand the tree in the left pane, if needed, and select the directory in which your Quality Center virtual directory is located. This is the IIS Web site that was selected during the Quality Center installation (for example, **Default Web Site**). For more information, see Chapter 2, “Installing Quality Center.”
- 3 Right-click the Quality Center virtual directory (by default, **quality_center**) and choose **Properties**. The **quality_center Properties** dialog box opens. In the **Virtual Directory** tab, verify that the following options are set:

Settings for IIS 5.0:	Settings for IIS 6.0:
<ul style="list-style-type: none"> ▶ Read is selected. ▶ Script source access, Write, and Directory browsing are cleared. ▶ The Application name box is enabled and the Remove button is visible. ▶ Scripts and Executables is selected in the Execute Permissions list. ▶ Medium (Pooled) is selected in the Application Protection list. 	<ul style="list-style-type: none"> ▶ Read is selected. ▶ Script source access, Write, and Directory browsing are cleared. ▶ The Application name box is enabled and the Remove button is visible. ▶ Scripts and Executables is selected in the Execute Permissions list. ▶ DefaultAppPool is selected in the Application Protection list.

- 4 Click **OK** to close the **quality_center Properties** dialog box.

9

Customizing Quality Center

You can customize the names of the Quality Center modules, and the Tools and Help menus, by modifying the **QCClient.UI.Ax.dll.config** file on your Quality Center server machine.

To customize Quality Center:

- 1** On your server machine, extract the **QCClient.UI.Ax.dll.config** file from **Client.cab**. This file is located:
 - **JBoss:** In the `[Install Dir]\[Server]\server\default\deploy\20qcbin.war` file, (after extracting the war file, the **Client.cab** file is located under the `\Install` directory).
 - **Other deployments:** Initially in the **application** directory. From this directory, you can move the file to an alternative location.
- 2** Open the **QCClient.UI.Ax.dll.config** file (this is in **.xml** format).
- 3** To delete Quality Center modules or rearrange their order, locate the `<Modules>` section of the file, and delete or move the selected module section as required.

Note: To customize a module name, add the **REPLACE_TITLE** parameter in the **Site Configuration** tab in Site Administration. For more information, refer to the *HP Quality Center Administrator's Guide*.

- 4 You can change the default names listed in the Tools menu in the Tools section of the file.

The following is the syntax of an entry in the Tools line:

```
<TDFrame
  Tools="<Tool_Name>,{<Tool_ID>}"
  Workflow="{<Workflow_ID>}"
  Parameters="<parameters>"
/>
```

- 5 To change, delete, or rearrange the list of items in the Help menu, change the default names, IDs, and URLs listed in the OnlineHelpItem line. The following is the syntax of an entry in the OnlineHelpItem line:

```
<OnlineHelpItem
ID="<Help_ID>"
Name="<Help_Name>"
Url="<Help_URL>"
```

To create a separator line between two items in the Help menu, use the following syntax:

```
<OnlineHelpItem
ID="<Help_ID>"
Name="<Help_Name>"
Url="<Help_URL>"
IsFirstInGroup="true" />
```

Note: The first two menu items in the Help menu, **Help on this page** and **Documentation Library**, and the last Help menu item, **About HP Quality Center**, cannot be moved or changed. They do not have corresponding entries in the **QCClient.UI.Ax.dll.config** file. The above step only affects the menu items between them.

- 6 Unzip the **Client.cab** file to a temporary folder named **Client** which must be under the temp folder. For example, C:\temp\Client.
- 7 Replace the **QCClient.UI.Ax.dll.config** file with the modified file.

- 8 Store the temporary folder on a logical drive, for example X, by running the following command:

```
subst [X]: <temp folder>
```

For example, subst X: C:\temp

- 9 Create a new **Client.cab** file with the command:

```
cabarc -r -p -P Client\ -s 6144 N <temp folder>\Client.cab X:\Client\*.*
```

Note: To use this command you must first download **cabsdk.exe** (the Cabinet Software Development Kit) from the Microsoft Download Center.

- 10 Add a class 3 digital signature to the new **Client.cab** file.

Important: The digital signature must be a signature of a trusted provider.

- 11 Replace the old cab file with the new file.
- 12 Rebuild the war file.
- 13 Redeploy the war file. During the redeployment you cannot use Quality Center.

10

Changing the JBoss Heap Memory Size and Port

After installing Quality Center, you can update the heap memory value on the JBoss application server if there is a change in the number of active projects or concurrent user sessions in Quality Center. You can also change the JBoss default port number.

This chapter includes:

- ▶ Changing the JBoss Heap Memory Size on page 118
- ▶ Changing the JBoss Port Number on page 121

Note: For the latest updates on the information in this chapter, refer to the Customer Support Knowledge Base (<http://support.mercury.com/cgi-bin/portal/CSO/kbBrowse.jsp>), and select **TestDirector for Quality Center**. Search for Article Number 41914 for changing the JBoss heap size, and 37006 for changing the JBoss port number.

Changing the JBoss Heap Memory Size

If you select JBoss as the application server during the Quality Center installation, you can specify the memory heap value that is used by the JBoss server, or accept the default value (512-1024 MB). For information on how to specify the JBoss heap size during Quality Center installation, see “Mounting the File System Repository in a Clustered Environment” on page 50.

After you install Quality Center, you may need to change the JBoss heap memory values. For example, you may want to increase the JBoss heap size if there is an increase in the number of active projects in Quality Center, or an increase in the number of concurrent user sessions.

Note: The maximum JBoss heap value cannot exceed your maximum memory (RAM) size.

This section includes the following topics:

- ▶ Changing the JBoss Heap Size on Windows
- ▶ Changing the JBoss Heap Size on Solaris, Linux, and AIX

Changing the JBoss Heap Size on Windows

You can change the JBoss heap memory size on Windows server machines by uninstalling the Quality Center service, modifying the heap size in the **InstallJbossService.bat** file, and reinstalling the Quality Center service. You also need to modify the **run.bat** file to make sure that it is synchronized with the service.

To change the JBoss heap memory size on Windows:

- 1** Verify that all users have logged out from Quality Center projects, and stop the Quality Center Service.
- 2** Open Command Prompt, and navigate to the `<QC_Installation_Path>\jboss\bin` folder. By default, the Quality Center installation path is `[drive]:\Program Files\Mercury\Quality Center`.

- 3** To uninstall the existing service, run the following command:

```
InstallJbossService.bat -uninstall
```

- 4** To change the heap size, perform the following:

- a** Open the **InstallJbossService.bat** file, and modify the heap size parameter as required. For example, if the heap memory is currently from 128 MB - 512 MB:

```
set JAVA_OPTS=%JAVA_OPTS% -Xms128m -Xmx512m
```

you can increase the heap size from 128 MB - 1024 MB as follows:

```
set JAVA_OPTS=%JAVA_OPTS% -Xms128m -Xmx1024m
```

- b** Save and close the **InstallJbossService.bat** file.

- 5** To reinstall the service with the modified heap size parameter, perform the following:

- a** Run the following command:

```
InstallJbossService.bat -install
```

- b** From the **Start** menu, choose **Settings > Control Panel > Administrative Tools > Services**, and verify that the service has been installed.

- c** Start the **Mercury Quality Center** service.

- d** Check that the specified heap size is shown as total memory. Open your Web browser, and type the following URL:

- For Quality Center: `http://<Quality Center server name>:<port number>/qcbn/servlet/tdservlet?method=debuginfo`
- For Site Administration: `http://<Quality Center server name>:<port number>/sabin/servlet/tdsiteadminservlet?method=debuginfo`

Note: If you are working with cluster nodes, the Quality Center server name should be the node machine name, and you must perform the above steps on each node.

- 6 To modify the **run.bat** file, perform the following:
 - a Navigate to the `<QC_Installation_Path>\jboss\bin` folder.
 - b In the **run.bat** file, change the heap size so that it is synchronized with the heap size changes you made in the **InstallJbossService.bat** file.
 - c Save and close the **run.bat** file.

Changing the JBoss Heap Size on Solaris, Linux, and AIX

You can change the JBoss heap memory size on Solaris, Linux, and AIX server machines by modifying the **run.sh** file.

To change the JBoss heap memory size on Solaris, Linux, and AIX:

- 1 Navigate to the `$JBOSS_HOME/bin` directory.
- 2 To change the heap size, perform the following:
 - a Open the **run.sh** file, and modify the heap size parameter as required. For example, if the heap memory is currently from 128 MB - 512 MB:

```
set JAVA_OPTS=%JAVA_OPTS% -Xms128m -Xmx512m
```

you can increase the heap size from 128 MB - 1024 MB as follows:

```
set JAVA_OPTS=%JAVA_OPTS% -Xms128m -Xmx1024m
```
 - b Save and close the **run.sh** file.
- 3 Verify that all users have logged out from Quality Center projects, and restart the Quality Center service by running:
 - a `run.sh -stop`.
 - b `run ps -ef | grep java` (to make sure that the JBoss server has stopped)
 - c `run.sh -start`
- 4 Check that the specified heap size is shown as total memory. Open your Web browser, and type the following URL:
 - For Quality Center: `http://<Quality Center server name>:<port number>/qcbinservlet/tdservlet?method=debuginfo`
 - For Site Administration: `http://<Quality Center server name>:<port number>/sabin/servlet/tdsiteadminservlet?method=debuginfo`

Note: If you are working with cluster nodes, the Quality Center server name should be the node machine name, and you must perform the above steps on each node.

Changing the JBoss Port Number

After you install Quality Center, you may need to change the port number on the JBoss application server if the port has been reserved or is already in use. The default port is 8080. You can change the port by updating the port number in the **server.xml**, **mercury.xml**, and **siteadmin.xml** files.

If you are using JBoss as your application server and as your Web server, the port number is shared, so you only need to change the port number on the application server. If the IIS Web server is installed on your machine, you must also change the port number on the IIS Web server.

To change the port number on the JBoss application server:

- 1** Change the port number in the **server.xml** file.
 - a** Navigate to `<QC_Installation_Path>\jboss\server\default\deploy\jbossweb-tomcat50.sar`, and open the **server.xml** file in a text editor.
 - b** Change the port number. For example, if Connector port="8080", you can change it to Connector port="8081".
- 2** Navigate to `<QC_Installation_Path>\application`, and back up the **sabin.war** and **qcbn.war** files.
- 3** Change the port number in the **mercury.xml** file.
 - a** Create a temporary directory, **qcbn**, and extract the contents of **qcbn.war** into this directory. For example:

```
cd <QC_Installation_Path>\application\qcbn
jar xf "<QC_Installation_Path>\application\qcbn.war"
```

Note: If the `jar` command is not defined, make sure to add the Java Virtual Machine path to the system environment variable `Path`. The default path is `<QC_Installation_Path>_jvm\bin`.

b Navigate to `<QC_Installation_Path>\application\qcbn\WEB-INF`, and open the `mercury.xml` file in a text editor.

c Change the port number. For example:

```
<URL>http://localhost:8081/sabin/servlet/tdsiteadminervlet</URL>
```

d Zip the `qcbn.war` file. For example:

```
cd <QC_Installation_Path>\application\qcbn
```

```
jar cvf qcbn.war *
```

This should overwrite the existing `qcbn.war` file.

4 Change the port number in the `siteadmin.xml` file.

a Create a temp directory, `sabin`, and extract the contents of `sabin.war` into this directory. For example:

```
cd <QC_Installation_Path>\application\sabin
```

```
jar xf "<QC_Installation_Path>\application\sabin.war"
```

b Navigate to `<QC_Installation_Path>\application\sabin\WEB-INF`, and open the `siteadmin.xml` file in a text editor.

c Change the port number. For example:

```
<URL>http://localhost:8081/qcbn/servlet/tdservlet</URL>
```

d Zip the `sabin.war` file. For example:

```
cd <QC_Installation_Path>\application\sabin
```

```
jar cvf sabin.war *
```

This should overwrite the existing `sabin.war` file.

- 5 Stop the JBoss application server. For more information on stopping and starting JBoss, see “Starting and Stopping Quality Center Services” on page 98.
- 6 Copy the **sabin.war** and **qcbn.war** files to the `<QC_Installation_Path>\jboss\server\default\deploy` directory.
- 7 Rename **sabin.war** to **10sabin.war**, and **qcbn.war** to **20qcbn.war**.
- 8 Restart JBoss.
- 9 Log in to Quality Center using the new port number.

To change the port number on the IIS Web server:

- 1 Open the Internet Information Services Manager:
 - ▶ If you have IIS 5.0, from the **Start** menu, choose **Programs > Administrative Tools > Internet Services Manager**. The Internet Information Services window opens.
 - ▶ If you have IIS 6.0, from the **Start** menu, choose **Programs > Administrative Tools > Internet Information Services (IIS) Manager**. The Internet Information Services (IIS) Manager window opens.
- 2 Expand the tree in the left pane, and stop the default Web site by right-clicking **Default Web Site**, and selecting **Stop**. The service is marked **(Stopped)**.
- 3 Right-click **Default Web Site** and select **Properties**.
- 4 Click the **Web Site** tab, change the port number in the **TCP Port** box, and click **OK**.
- 5 To restart the default Web site, right-click **Default Web Site**, and select **Start**.
- 6 When you open Quality Center, type the new port number in your Quality Center URL
`http://<Quality Center server name>:<port number>/qcbn`.

For example, if you changed the port from 8080 to 8081 on server Lab1, type `http://Lab1:8081/qcbn`

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Uninstalling Quality Center

You can uninstall Quality Center from your server machine. When uninstalling Quality Center, projects are not deleted. You can also uninstall Quality Center components from a workstation that has been used to access Quality Center.

This chapter includes:

- Uninstalling Quality Center from Windows on page 125
- Uninstalling Quality Center from Linux, Solaris, or AIX on page 126
- Uninstalling Quality Center Components from a Workstation on page 126

Uninstalling Quality Center from Windows

This section describes how to uninstall Quality Center from your Windows server machine.

To uninstall Quality Center from Windows:

- 1** Make sure that the application server is running.
- 2** To open the HP Quality Center Uninstall Wizard, you can:
 - Choose **Start > Settings > Control Panel > Add/Remove Programs**, select **HP Quality Center**, and click the **Change/Remove** button. Follow the instructions on your screen.
 - Locate the Quality Center home directory ([drive]:\Mercury Interactive\Quality Center). In the **_uninst** subdirectory, double-click **uninstall.exe**.
- 3** Click **Next**. Follow the instructions on your screen.

Uninstalling Quality Center from Linux, Solaris, or AIX

This section describes how to uninstall Quality Center from your Linux, Solaris, or AIX server machine.

Note: To uninstall Quality Center, you should use the same user that installed Quality Center.

To uninstall Quality Center from Linux, Solaris, or AIX:

- 1 Make sure that the application server is running.
- 2 Type the following command at the system prompt:

```
/[directory]/[Quality_Center_directory]/_uninst/uninstall.bin
```

The HP Quality Center Uninstall wizard opens.
- 3 Click **Next**. Follow the instructions on your screen.

Uninstalling Quality Center Components from a Workstation

When you run Quality Center on your client computer, client components are downloaded to your workstation. You can use the client uninstall utility to remove all Quality Center client components, including files and registry keys. To download the utility, refer to the Customer Support Knowledge Base (<http://support.mercury.com/cgi-bin/portal/CSO/kbBrowse.jsp>), select **TestDirector for Quality Center**, and search for Article Number 19734.

If the workstation is used to access Quality Center after the utility has been run, all necessary components are downloaded from the Quality Center server.

A

Troubleshooting Quality Center Installation

This chapter contains troubleshooting suggestions for issues relating to the Quality Center installation.

This chapter includes:

- Disabling Validation Checks on page 127
- Checking the Installation Log Files on page 129
- Quality Center Installation Already Exists on page 129
- Database Validator Fails on page 130
- IIS Site Not Responding on page 131
- JBoss Does Not Start on page 132
- Parameters of a Previous Installation are Used on page 134

Disabling Validation Checks

During installation, the Quality Center installer automatically performs validation checks to verify that particular installation requirements are met. If validation fails, you can disable checks in the installer by adding arguments to the installer command. You should disable validation checks only if you are sure that the validation result is wrong.

For example, you can disable the installation location validator that checks that the installation folder is accessible and that the user has read and write permissions to it. Type `setup.exe -W installLocationValidator.active=false`.

You can disable the following installation validators:

Validator	Checks	To disable
Existing installation	Checks whether a Quality Center installation already exists on the server. For troubleshooting tips, see “Quality Center Installation Already Exists” on page 129.	-W handleExistingInstallationSequence.active=false
Operating system and license	Checks that the operating system is supported with the given license.	-W licenseAndOSValidatorSequence.active=false
Mail server	Checks that the mail server name is valid.	-W mailServerValidator.active=false
Database parameters	Checks the database version and system user permissions. For troubleshooting tips, see “Database Validator Fails” on page 130.	-W dbValidatorSequence.active=false
Database existence	Checks that the TD user owns the existing database schema tables.	-W dbExistsValidator.active=false
Repository folder	Checks that the repository folder is accessible, and the user has read and write permissions to it.	-W repositoryValidator.active=false
Installation location	Checks that the installation folder is accessible, and the user has read and write permissions to it.	-W installLocationValidator.active=false

Checking the Installation Log Files

If you encounter problems installing Quality Center, check for errors in the following log files:

Log	Path
InstallShield log	%TEMP%\Mercury\HP_Quality_Center. <log_creation_date>.install.html
InstallShield second log	%TEMP%\Mercury\HP_Quality_Center. <log_creation_date>.install.is.log
Schema creation logs	<Quality Center installation folder>\log\sa
Schema creation second log	<Quality Center installation folder>\InstallInfo\log
JBoss server log	<Quality Center installation folder>\jboss\server \default\log\process.log

Quality Center Installation Already Exists

If during installation, an error message displays that a Quality Center installation already exists, you should verify that Quality Center is not installed, and that there are no traces of an old installation.

To verify that Quality Center is not installed:

- 1** From the **Start** menu, choose **Settings > Control Panel > Add/Remove Programs**.
- 2** In the program list, check for **Mercury Quality Center** or **HP Quality Center**.
- 3** If either appears in the program list, click **Remove**, and follow the instructions on your screen.
- 4** After you uninstall Quality Center, check that the <Quality Center home>\application directory was deleted. If it was not deleted, delete the directory before you install Quality Center.

To remove traces of an old Quality Center installation:

- 1 Navigate to the system root (%systemroot%) directory (on Linux, Solaris, or AIX, go to the /home directory).
- 2 Make a backup of the **vpd.properties** file.
- 3 In a text editor, open the **vpd.properties** file and delete any lines that mention **Quality Center**.

Database Validator Fails

During Quality Center installation, if the database validator fails, perform the following checks:

- Check that the input parameters are incorrect.
- Check that the Site Administration schema name was provided.
- If upgrading a Microsoft SQL Server site schema, check whether a different authentication type was used to the one used in the previous installation.

To check whether the parameters are correct:

- 1 Read the error message that displays during installation, and try to understand and resolve the problem from the root cause.
- 2 If you cannot understand the problem from the message, check with your database administrator.
- 3 If no error was found and you are sure that the parameters are correct, disable the DB parameters validator as described in “Disabling Validation Checks” on page 127.

To check that the Site Administration schema name was provided:

- 1 Open a database query tool.
- 2 Make sure the **PROJECTS** table exists in the schema. This table exists in the Site Administration schema only and not in the project schema.

To check the SQL authentication type of a previous installation (when upgrading an SQL Server site schema):

- 1** Navigate to the Quality Center home directory, and open the `\application` folder. By default, the home directory is `C:\Program Files\Mercury\Quality Center` on Windows, and `/opt/Mercury/QualityCenter` on Solaris, Linux, and AIX.
- 2** Extract the contents of `sabin.war` into a temp file, and open the `siteadmin.xml` file in a text editor.
- 3** Search for the “native” property. If its value is set to “Y”, Windows authentication was used. Make sure that the new installation uses the same authentication type (SQL Server authentication or Windows authentication) as the previous installation.

IIS Site Not Responding

If you are using an IIS Web server and you get a message that the IIS site is not responding, check that JBoss is running and that IIS was configured successfully.

To check that JBoss is running:

- 1** Wait about 20 minutes in case the machine is slow, or JBoss and IIS are working slowly.
- 2** Open your Web browser and type your JBoss URL. By default, this is `http://localhost:8080/qcbin`.
- 3** Check if the Quality Center Welcome page is displayed.

If the Welcome page is displayed, the problem is within IIS.

If the Welcome page is not displayed, the problem is within JBoss. Follow the steps described in “JBoss Does Not Start” on page 132.

To check the IIS configuration:

- 1** Open the IIS manager (choose **Start > Run**, and type `inetmgr`).
- 2** Select the Web site that was selected during installation. The default Web site used during installation is **Default Web Site**. For more information on selecting the IIS Web site, see step 17 on page 63.

- 3** Check that the Web site contains a folder named **quality_center**. If there is no **quality_center** folder, you must install Quality Center again.
- 4** Right-click the **Default Web Site** directory, and click **Properties**.
- 5** Click the **ISAPI Filters** tab, and check that the **quality_center** folder is listed as a filter and has a green arrow. If the filter is not enabled, install Quality Center again.
- 6** For IIS 6.0, click the **Web Service Extensions** folder, and make sure that the **QC** extension exists and is allowed.

If the **QC** extension is not allowed, select **QC** and click **Allow**.

If the **QC** extension does not exist, select **All unknown ISAPI extensions** and click **Allow**.

JBoss Does Not Start

If you are using a JBoss application server, and you get a message that JBoss does not start, perform the following checks:

- ▶ Check that JBoss works.
- ▶ Check the JBoss service user.
- ▶ Check that there are no JBoss script errors.
- ▶ Check that IIS was configured successfully.

To check JBoss works:

- 1** Wait about 20 minutes in case the machine is slow, or JBoss and IIS are working slowly.
- 2** Open your Web browser and type your JBoss URL. By default, this is <http://localhost:8080/qcbin>.
- 3** Check if the Quality Center Welcome page is displayed.

If the Welcome page is displayed, the problem is within IIS.

If the Welcome page is not displayed, the problem is within JBoss. Check the other JBoss troubleshooting options.

To check the JBoss service user:

- 1** Open the Services control panel (choose **Start > Run**, and type `services.msc`).
- 2** Right-click the **Mercury Quality Center** service, and click **Properties**.
- 3** Click the **Log On** tab.
- 4** Enter the user information and restart the service.

To check if the JBoss script has an error:

- 1** Run Jboss manually. Open command window, (choose **Start > Run**, and type `cmd`).
- 2** Change the folder to `<Quality Center installation folder>/jboss/bin`.
- 3** Run `run.bat`.
- 4** Check if there are any errors.

To check the IIS configuration:

- 1** Open the IIS manager (choose **Start > Run**, and type `inetmgr`).
- 2** Select the Web site that was given in the installer (the default is **Default Web Site**).
- 3** Check that the Web site contains a folder named `quality_center`. If there is no `quality_center` folder, you must install Quality Center again.
- 4** Right-click the **Default Web Site** directory, and click **Properties**.
- 5** Click the **ISAPI Filters** tab, and check that the `quality_center` folder is listed as a filter and has a green arrow. If the filter is not enabled, install Quality Center again.
- 6** For IIS 6.0, click the **Web Service Extensions** tab, and make sure that the **QC** extension exists and is allowed.

If the **QC** extension is not allowed, select **QC** and click **Allow**.

If the **QC** extension does not exist, select **All unknown ISAPI extensions** and click **Allow**.

Parameters of a Previous Installation are Used

When installing on UNIX type operating systems, if the parameters of a previous installation are used during installation, this indicates that the installer does not have access to the **/tmp/Mercury** folder and files inside it. If the current installation cannot override the files in the **/tmp** folder, the parameters will be incorrect.

To check permissions:

- 1** Navigate to the **/tmp** folder, and run `ls -l` to check whether the installer can write to **tmp/Mercury**.
- 2** Navigate to the **/tmp/Mercury** folder, and run `ls -l` again to check the permissions and ownership of files within this folder.