MERCURY
QUALITY CENTER™

Administrator's Guide

MERCURY™

Mercury Quality Center™
Administrator's Guide
Version 9.0

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Welcome to This Guide

Welcome to TestDirector for Quality Center, the Mercury Web-based test management tool. Quality Center helps you organize and manage all phases of the application testing process, including specifying testing requirements, planning tests, executing tests, and tracking defects.

Throughout the testing process, Quality Center projects are accessed by many users—including developers, testers, and quality assurance managers. In order to protect, maintain, and control information in a testing project, users are assigned to groups with different access privileges. Only a Quality Center project administrator (belonging to the TDAdmin user group) has full privileges in a Quality Center project.

As a Quality Center site administrator, you use *Site Administration* to create and maintain Quality Center domains and projects; manage Quality Center users, connections, and licenses; define database servers; and modify Quality Center configurations.

As a Quality Center project administrator, you use *Project Customization* to customize project entities and lists, set up user groups and permissions, configure mail, set traceability notification rules, and configure the workflow in the Quality Center modules.

Quality Center is shipped without any passwords defined. To protect your testing data from unauthorized access, it is highly recommended that you set passwords early in the Quality Center process.

How This Guide is Organized

The Quality Center Administrator's Guide provides information regarding the administration, maintenance, and customization of Quality Center.

It contains the following parts:

Part I   Site Administration

Describes how the site administrator uses Site Administration to manage Quality Center projects. This includes maintaining projects, users, connections, licenses, servers, configuration parameters, and site analysis.

Part II   Project Customization

Describes how the project administrator uses the Project Customization window to control access to a project by defining the project users and their privileges. It also describes how to customize a project to meet the specific needs of the project users.

Part III   Workflow Customization

Describes how to create workflow scripts to customize the Quality Center user interface and to control the actions that users can perform.

Part IV   Appendix

Describes how to use Quality Center Checker, a diagnostic tool that tests many of the Quality Center server components that Quality Center uses. Running the Quality Center Checker can pinpoint the cause of many server side problems associated with accessing Quality Center.

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 versions of Quality Center. You can also access the What's New? from the Quality Center **Help** menu. (Available online and in PDF format.)

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

Quality Center Guides:

Mercury 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.)

Mercury 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.)

Mercury 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.)

Mercury 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:

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

Mercury 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:

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

Mercury 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.)

Mercury 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.)

Mercury Quality Center Custom Test Type Guide provides a complete online guide on how to create your own testing tool and integrate 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 uses your default Web browser to open the Mercury Customer Support Web Site directly to the Knowledge Base landing page.

Customer Support Web Site uses your default Web browser to open 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. The URL for this Web site is http://support.mercury.com.

Mercury Home Page uses your default Web browser to open Mercury's home page. This site provides the most up-to-date information on Mercury and its products. This includes new software releases, seminars and trade shows, customer support, educational services, and more. The URL for this Web site is http://www.mercury.com.

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

In addition, you can refer to Mercury Best Practices which contains guidelines for planning, creating, deploying, and managing a world-class IT environment. Mercury provides three types of best practices: Process Best Practices, Product Best Practices, and People Best Practices. Licensed customers of Mercury software can read and use the Mercury Best Practices available from the Customer Support site, http://support.mercury.com.

Documentation Updates

Mercury is continuously updating its product documentation with new information. You can download the latest version of this document from the Customer Support Web site (http://support.mercury.com).

This option is required if access to the Documentation Library is set to local access (default setting). Alternatively, the Quality Center site administrator can configure live Web access to the Documentation Library. For more information, see *"Configuring Web Access to the Documentation Library" on page 9*.

To download updated documentation:

1 In the Customer Support Web site, click the **Documentation** link.

2 Under **Please Select Product**, select TestDirector for Quality Center.

Note that if TestDirector for Quality Center does not appear in the list, you must add it to your customer profile. Click **My Account** to update your profile.

3 Click **Retrieve**. The Documentation page opens and lists the documentation available for the current release and for previous releases. If a document was updated recently, **Updated** appears next to the document name.

4 Click a document link to download the documentation.

Typographical Conventions

This guide uses the following typographical conventions:

UI Elements	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."
Arguments	This style indicates method, property, or function arguments and book titles. For example, "Refer to the *Mercury User's Guide*."
<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."
Function_Name	This style indicates method or function names. For example, "The **wait_window** statement has the following parameters:"
[ ]	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.

Welcome

Part I

Site Administration

1

Site Administration at a Glance

Using Site Administration, you create and maintain Quality Center projects, users, and servers. You can also define site administrators and change site administrator passwords.

This chapter describes:

➤ Starting Site Administration

➤ Understanding Site Administration

➤ Defining Site Administrators

➤ Configuring Web Access to the Documentation Library

Starting Site Administration

Using Site Administration, you create and maintain your Quality Center projects.

To start Site Administration:

1 To start Site Administration, you can:

➤ Open your Web browser and type your Quality Center URL:
http://<Quality Center server name>[<:port number>]/qcbin
For example, http://lab1:8080/qcbin. The Mercury Quality Center Options window opens. Click the **Site Administration** link.

➤ Alternatively, open your Web browser and type your Site Administration URL: http://<Quality Center server name>[<:port number>]/sabin
For example, http://lab1:8080/sabin.

The first time you run Site Administration, files are downloaded to your workstation. Subsequently, Quality Center carries out a version check. If there is a newer version on the server, updated files are downloaded to your workstation.

Note: To download files to your computer, you must log in with site administrator privileges. This applies if you are running Quality Center for the first time, upgrading to a newer version, or applying a service pack.

After the Quality Center version has been checked and updated if necessary, the Mercury Quality Center Site Administration Login window opens.

2 In the **User Name** box, type the name of a user who is defined as a site administrator. The first time you log in to Site Administration, you must use the site administrator name that you specified during the installation of Quality Center. After you log in to Site Administration, you can define additional site administrators. For more information, see "Defining Site Administrators" on page 7.

3 In the **Password** box, type your site administrator password. The first time you log in to Site Administration, you must use the site administrator password that you specified during the installation of Quality Center.

To define or change the site administrator password, see "Changing Passwords" on page 79.

| Login |

4 Click **Login**. Site Administration opens.

Understanding Site Administration

As a Quality Center site administrator, you create and maintain Quality Center projects, users, and servers using Site Administration. Site Administration contains the following tabs:

➤ Click the **Site Projects** tab to manage your Quality Center projects. This includes adding new domains and projects, querying project data, restoring projects, renaming projects, and activating or deactivating projects. For more information, see Chapter 2, "Managing Quality Center Projects."

You can also upgrade projects from a previous Quality Center version to the current version. For more information, see Chapter 3, "Upgrading and Migrating Projects."

➤ Click the **Site Users** tab to add new users and define user properties, including changing passwords. For more information, see Chapter 4, "Managing Quality Center Users."

➤ Click the **Site Connections** tab to monitor the users currently connected to a Quality Center server. For more information, see Chapter 5, "Managing User Connections and Licenses."

➤ Click the **Licenses** tab to monitor the total number of Quality Center licenses in use and to modify the license key number. For more information, see Chapter 5, "Managing User Connections and Licenses."

➤ Click the **Servers** tab to modify Quality Center server information, such as the log file and mail protocol. For more information, see Chapter 6, "Configuring Servers and Parameters."

➤ Click the **DB Servers** tab to manage your database servers. This includes adding a new database server, editing a server's connection string, changing a server's default administrator user name and password, and changing a user password. For more information, see Chapter 6, "Configuring Servers and Parameters."

Note: If you are working with the Quality Center Starter Edition, the DB Servers tab is not available.

➤ Click the **Site Configuration** tab to modify Quality Center configuration parameters. For more information, see Chapter 6, "Configuring Servers and Parameters."

➤ Click the **Site Analysis** tab to monitor the number of licensed Quality Center users connected to your projects at specific points over a period of time. For more information, see Chapter 7, "Analyzing Site Usage."

TOOLS ▼ Site Administration also includes the **Tools** button on the upper-right corner of the Site Administration window. Choose **Migration Tool** to migrate any projects you created in TestDirector to Quality Center. For more information, see Chapter 3, "Upgrading and Migrating Projects."

Defining Site Administrators

You can define Quality Center users as site administrators. Only users defined as site administrators can access Site Administration.

To secure the information in Site Administration, you should ensure that each user you add as a site administrator has a password defined. For more information, see "Changing Passwords" on page 79.

To define site administrators:

1 In Site Administration, click the **Site Users** tab.

2 Click the **Site Administrators** button. The Site Administrators dialog box opens displaying the Site Administrators list.

Site Administrators		
🔲 Add 🔲 Remove 🔄 Find [ ] 🔍		
User Name △	Full Name	
QC_Admin	Dennis Cooper	

Close
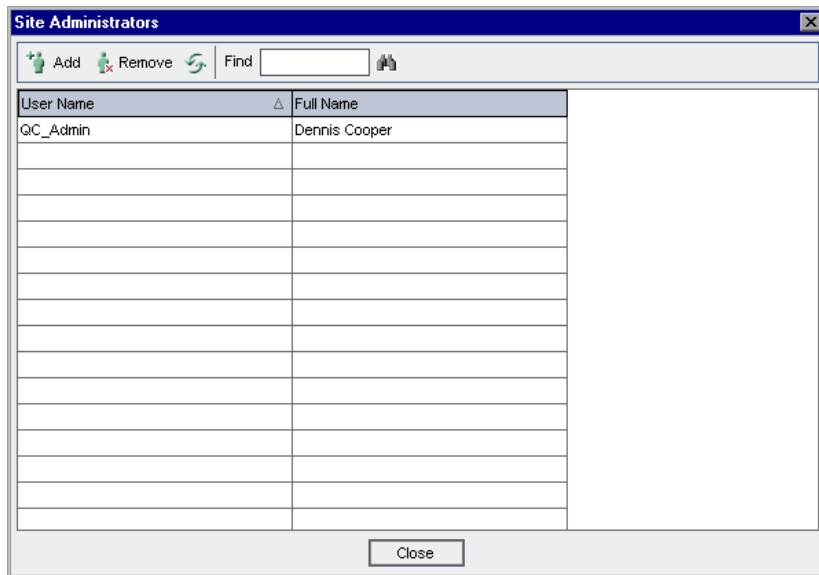
To change the sort order of the Site Administrators list from ascending to descending, click the **User Name** or **Full Name** column heading. Click the column heading again to reverse the sort order.

You can search for a user in the Site Administrators list by typing the name of a user in the **Find** box, and clicking the **Find** button.

Add

3 Click the **Add Site Administrators** button. The Quality Center Users list is displayed in the right pane.

User Name	△	Full Name	User Name	△	Full Name
QC_Admin		Dennis Cooper	QC_Admin1		David Banks
			QC_Admin2		Pamela Knight
			QC_Admin3		Roy Fields
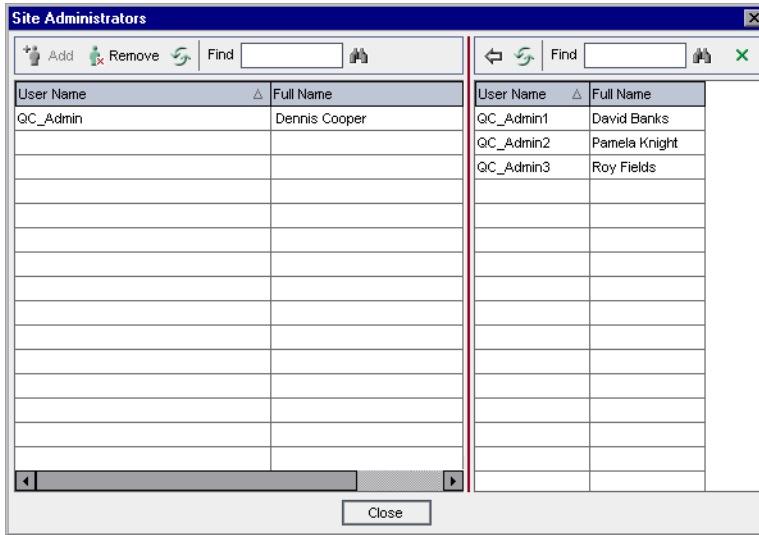
4 Select the users that you want to assign as site administrators. You can search for users by typing a search string in the **Find** box above the Users list, and clicking the **Find** button.

5 Click the **Add Selected Users** button. The selected users are moved to the Site Administrators list in the left pane.

6 To remove a site administrator from the Site Administrators list, select the user and click the **Remove Selected Site Administrators** button. Click **OK** to confirm. The user is removed from the Site Administrators list.

7 To refresh the Site Administrators list or Users list, click the **Refresh** button above the appropriate list.

Configuring Web Access to the Documentation Library

Users access the Documentation Library by choosing **Help** > **Documentation Library**. By default, Quality Center is set to local access and users are connected to the version installed on the Quality Center server machine. You can configure Quality Center to connect to the most updated version of the Documentation Library through the Web, from Mercury servers.

To configure Web access to the Documentation Library:

1 In Site Administration, click the **Site Configuration** tab. For more information on the Site Configuration tab, see "Setting Quality Center Configuration Parameters" on page 107.

2 Select the **ACCESS_WEB_DOCUMENTATION** parameter and click the **Edit Parameter** button. The Edit Parameter dialog box opens.

3 Change the value to Y and click **OK**.

2

Managing Quality Center Projects

Site Administration enables you to manage and maintain Quality Center domains and projects.

This chapter describes:

➤ About Managing Quality Center Projects

➤ Understanding the Quality Center Project Structure

➤ Creating Quality Center Domains

➤ Creating Quality Center Projects

➤ Copying Quality Center Projects

➤ Exporting and Importing Projects

➤ Updating Project Details

➤ Assigning Users to Projects

➤ Querying Project Tables

➤ Deactivating and Activating Projects

➤ Pinging Projects

➤ Renaming Projects

➤ Removing Projects

➤ Deleting Projects

➤ Deleting Domains

➤ Editing the Connection String

➤ Restoring Access to Quality Center Projects

➤ Backing Up and Restoring Quality Center Projects

➤ Renaming the Defects Module for a Project

About Managing Quality Center Projects

Before you start working in Quality Center, you need to create a Quality Center *project*. A Quality Center project collects and stores data relevant to a testing process. You can create a Quality Center project that works on Oracle, Microsoft SQL, or Microsoft Desktop Engine (MSDE). You can either create an empty Quality Center project, copy the contents of an existing project to a new project, or import an exported Quality Center project file to a new project. You can also restore access to an existing project.

After you create a project, you can add and remove users from the project, query the contents of a project by defining and running SQL statements, and deactivate/activate access to a project. You can also migrate a project from TestDirector to the current version of Quality Center

Quality Center projects are grouped by *domain*. A domain contains a group of related Quality Center projects and assists you in organizing and managing a large number of projects.

Note: If you are working with the Quality Center Starter Edition:

➤ Only MSDE is supported.

➤ Only five users can connect concurrently to each Quality Center server.

Understanding the Quality Center Project Structure

When you install Quality Center, the installation program creates a *base repository* on the application server's file system. The Site Administration and Quality Center directories are subfolders of this repository.

The Site Administration directory is called **SA** by default. This directory stores global XML files, style sheets, templates, and reports to be used by all projects in the base repository.

The Quality Center directory is called **QC** by default. It is a working area for a group of domains that are shared by multiple users. Each domain stores Quality Center projects. The QC directory includes a default domain that stores the QualityCenter_Demo project. When you create a new project, you can add it to the default domain or to a user-defined domain.

The following diagram shows the structure of the repository.
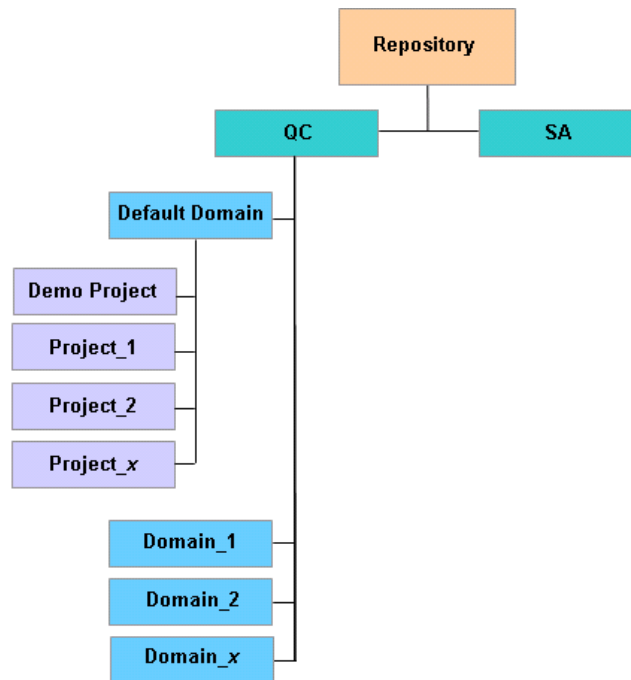
For each project, you can store data such as test scripts, reports, and attachments in the QC directory or in the project's database.

This section describes:

➤ Storing Project Data in the Project's Database

➤ Storing Project Data in the File System

Storing Project Data in the Project's Database

When you create a new project, you can store the project data in the **REPOSITORY** table in the project's database. Storage in this table is an alternative to storage on the application server's file system.

By storing project data in the project's database, you can consolidate your data-handling procedure. For example, when you back up or restore a project. You can also perform hot backups on your database. In addition, security and manageability issues caused by storing data in the file system are eliminated. For example, you no longer have to share files.

To query specific data that is stored in the REPOSITORY table, double-click a project in the **Site Projects** tab. Select the **REPOSITORY** table. For more information on querying, see "Querying Project Tables" on page 38. For more information on the REPOSITORY table, refer to the *Mercury Quality Center Database Reference*.

Storing Project Data in the File System

When you create a new project, you can store the project data under the QC directory in the file system. Storage in this directory is an alternative to storage in the REPOSITORY table in the project's database.

The following diagram shows the project data stored in a project subdirectory.
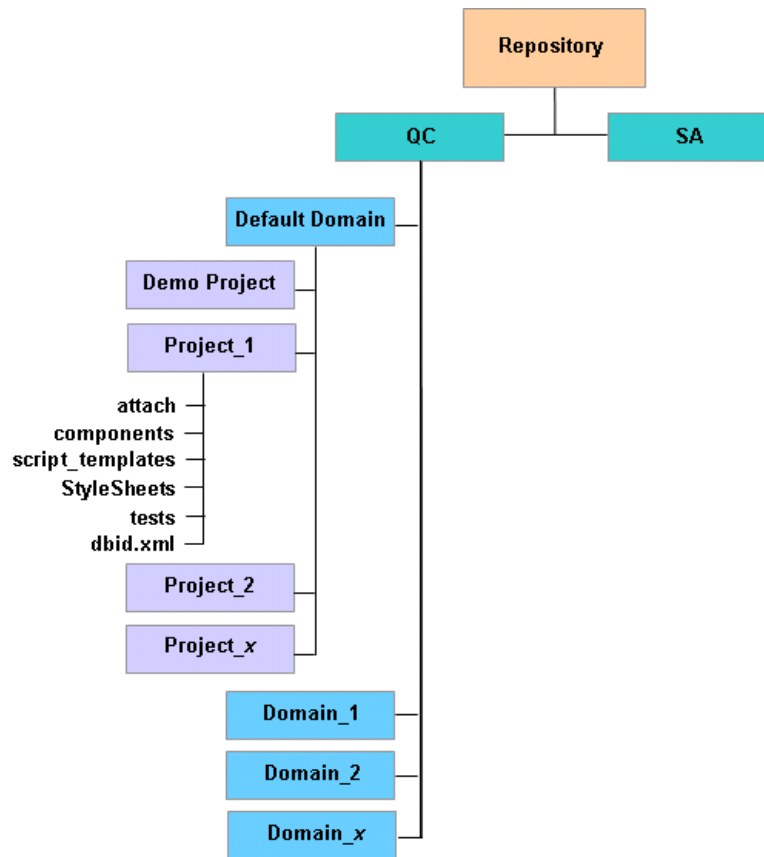
A project directory contains the following subdirectories:

➤ **attach**: A subdirectory for storing attachments.

➤ **components:** A subdirectory for storing business component scripts.

➤ **script_templates:** A subdirectory for storing template workflow scripts.

➤ **StyleSheets**: A subdirectory for storing style sheets that are used when mailing defects, requirements, or tests.

➤ **tests**: A subdirectory for storing automated tests.

➤ **dbid.xml:** An initialization file that stores project information required for restoring a connection to a project. For more information on restoring a connection to a project, see "Restoring Access to Quality Center Projects" on page 45.

Note that the dbid.xml file is stored in the project directory irrespective of where the project data is stored.

Creating Quality Center Domains

You can add new domains to Site Administration. Quality Center organizes projects in the Projects list by domain.

To create a domain:

1 In Site Administration, click the **Site Projects** tab.

2 Click the **Create Domain** button. The Create Domain dialog box opens.

3 Type a **Domain Name** and click **OK**.

The new domain is added to the Projects list in alphabetical order. In the right pane, under **Directories**, you can view the location of the domain.
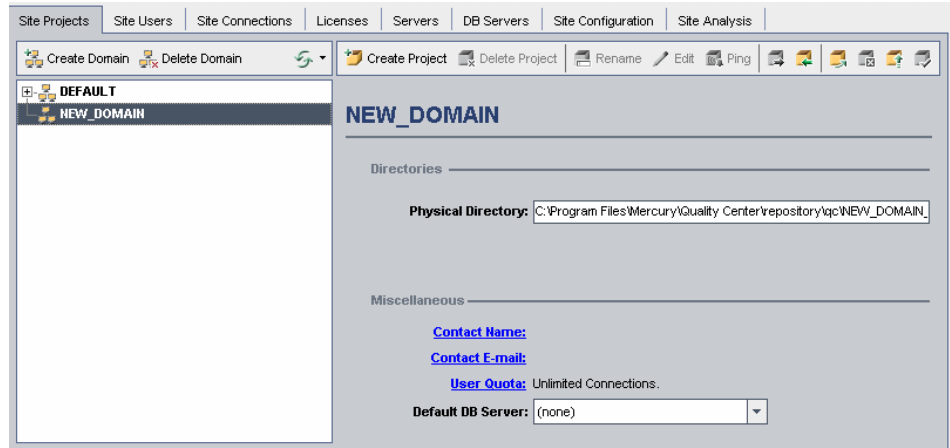
4 To add a person's name as a contact when there are questions or problems with the domain and/or its projects, click the **Contact Name** link. In the Set Contact Name dialog box, type the name of the contact person and click **OK**.

5 To add the e-mail address of the contact person for the domain, click the **Contact E-mail** link. In the Set Contact E-mail dialog box, type the e-mail address and click **OK**.

6 To change the number of users allowed to connect concurrently to the domain, click the **User Quota** link. The Domain User Quota dialog box opens.
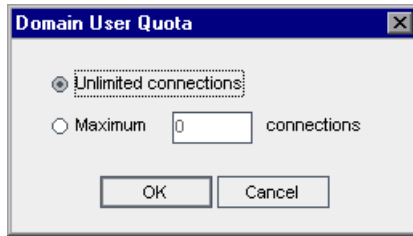
Choose **Maximum Connections** and type the maximum number of concurrent connections allowed. Click **OK**.

Notes:

➤ In addition to changing the number of users allowed to connect concurrently to a domain, you can also change the number of users allowed to connect concurrently to a project. For more information, see "Updating Project Details" on page 31.

➤ If you are working with the Quality Center Starter Edition, only five users can connect concurrently to each Quality Center server.

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7 To select a default database server when creating projects in the domain, select a default database server from the **Default DB Server** list.

Creating Quality Center Projects

You can create Quality Center projects in Oracle, Microsoft SQL, or MSDE. When you create a new project, you can:

➤ create an empty project

➤ copy the contents of an existing project. For more information, see "Copying Quality Center Projects" on page 25.

➤ import data from an exported Quality Center project file. For more information, see "Importing a Project" on page 29.

Notes:

➤ For information on the Oracle or Microsoft SQL permissions required by Quality Center, refer to the Quality Center Knowledge Base (http://support.mercury.com). For Oracle permissions, search for Problem ID 32903. For Microsoft SQL permissions, search for Problem ID 32905.

➤ If you are working with the Quality Center Starter Edition, only MSDE is supported.

To create a project:

1 In Site Administration, click the **Site Projects** tab.
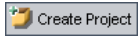
Create Project **2** Click the **Create Project** button. The Create Project dialog box opens.
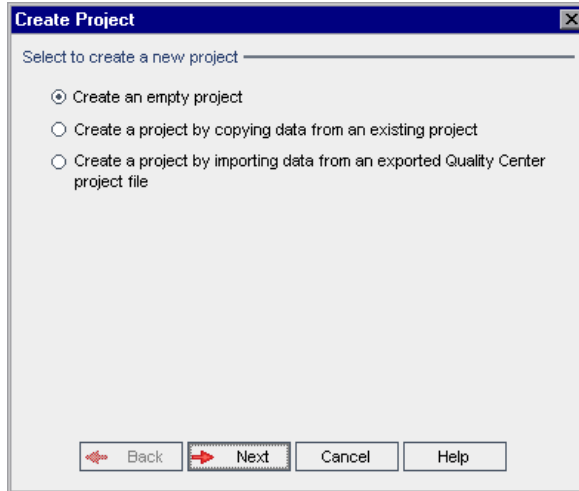
3 Choose the **Create an empty project** option and click **Next**. The following dialog box opens.
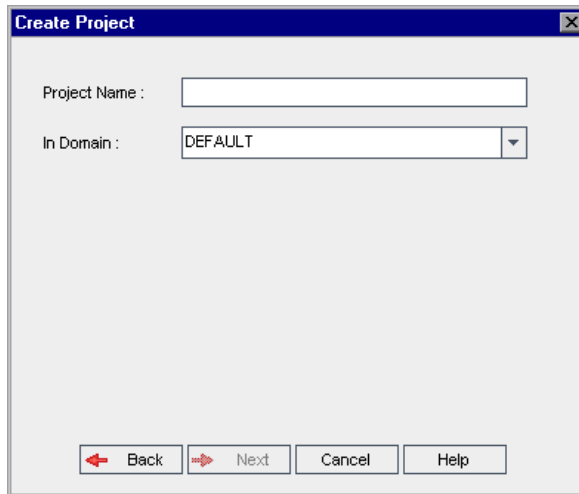
4 In the **Project Name** box, type a name for your Quality Center project.

5 In the **In Domain** box, select a domain.

Tip: After the project has been created, you can move it to a different domain in the Projects list using a drag-and-drop operation.

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6 Click **Next**. The following dialog box opens.

7 Under **Database Type**, select **Oracle** or **MS-SQL**. If you are working in MSDE, select **MS-SQL**.

8 By default, values defined during the Quality Center installation are displayed for **Server Name**, **DB Admin User**, and **DB Admin Password**. If additional database servers are defined, you can select another name from the **Server Name** list.

Note: For more information on defining database servers, see "Defining New Database Servers" on page 97.

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9 Click **Next**.

If your selected database server does not have the text search feature enabled, a message box opens. It indicates that after this process completes, you can enable the text search feature. For more information on enabling the text search feature, see "Configuring Text Search" on page 102.

10 If you are creating a Microsoft SQL project, proceed to step 11. For an Oracle project, the following dialog box opens.
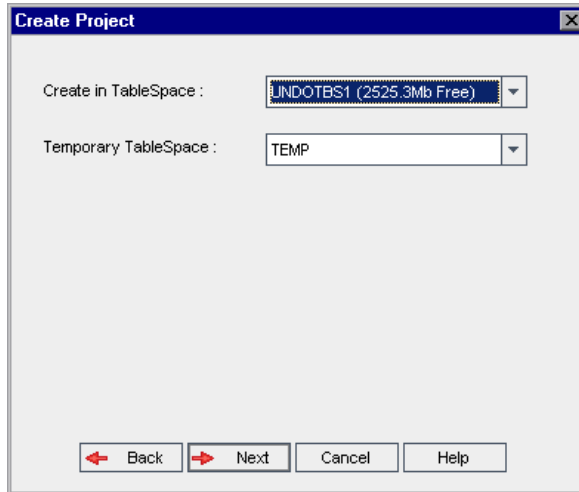
In the **Create in TableSpace** box, select a storage location from the list.

In the **Temporary TableSpace** box, select a temporary storage location for the new project.

11 Click **Next**. The Add Project Administrators dialog box opens.
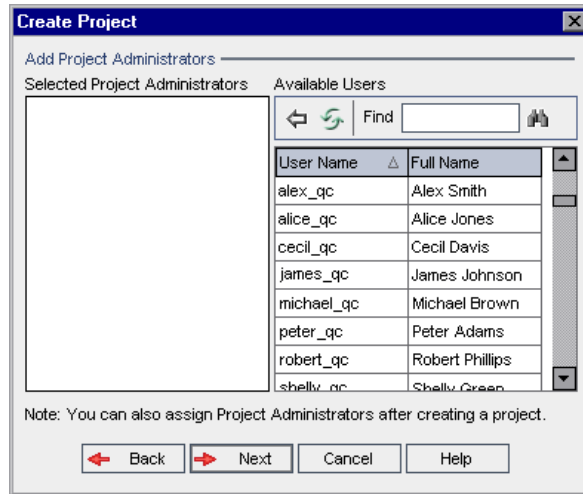
Selected Project Administrators lists Quality Center users that are assigned as project administrators. **Available Users** lists Quality Center users available in the project. When you assign project administrators, they are moved from the Available Users list to the Selected Project Administrators list.

➤ **Refresh:** Click the **Refresh** button to refresh the list of available users.

➤ **Find:** Type the name of a user in the **Find** box, and click the **Find** button to search the Available Users list.

➤ **Add Selected Users:** Select the users you want to assign as project administrators, and click the **Add Selected Users** button. The selected users are displayed in the Selected Project Administrators list.

➤ **Delete:** To remove a user from the Selected Project Administrators list, right-click the user and click **Delete**.

Note: You can also assign project administrators after you have created the project. For more information, see "Assigning Project Administrators" on page 37.

12 Click **Next**. The following dialog box opens.
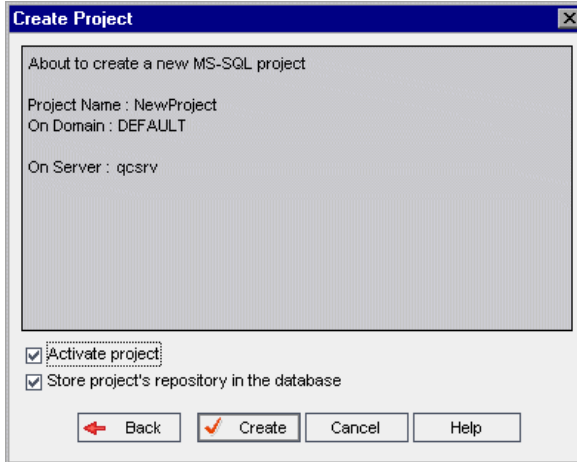
Verify the project details. To change any of the details, click **Back**.

13 You can select **Activate Project** to instruct Quality Center to activate the new project. For more information, see "Deactivating and Activating Projects" on page 40.

14 You can select **Store project's repository in the database** to store project data in the project's database instead of in the file system. For more information on storing project data, see "Understanding the Quality Center Project Structure" on page 13.

Note: When importing a Quality Center project, the **Store project's repository in the database** is not displayed. You can import a project only if its project repository is stored in the database. For more information on importing projects, see "Importing a Project" on page 29.

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15 Click **Create**. The new project is added to the Projects list.

Copying Quality Center Projects

When you create a new Quality Center project, you can copy the contents of an existing project to the new project.

Note: If your Quality Center server becomes unavailable while copying, you can resume the copying process at a later stage. To resume copying, reopen Site Administration and select the project from the Projects list. In the right pane, click the **Click Here** link.

To copy a Quality Center Project:

1 Deactivate the project you want to copy. For more information, see "Deactivating and Activating Projects" on page 40.

2 In Site Administration, click the **Site Projects** tab.

3 Click the **Create Project** button. The Create Project dialog box opens.
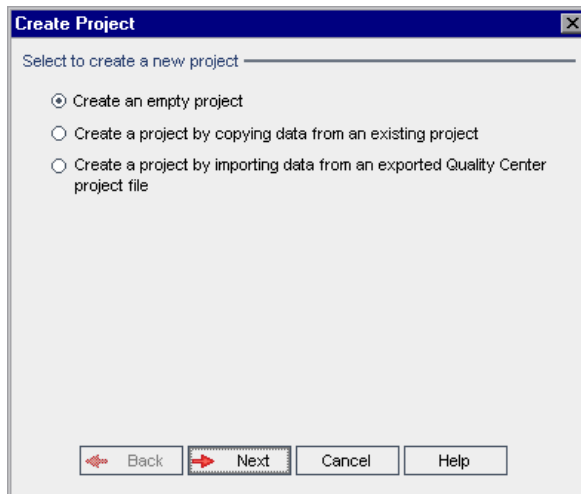
4 Choose the **Create a project by copying data from an existing project**
option and click **Next**. The following dialog box opens.
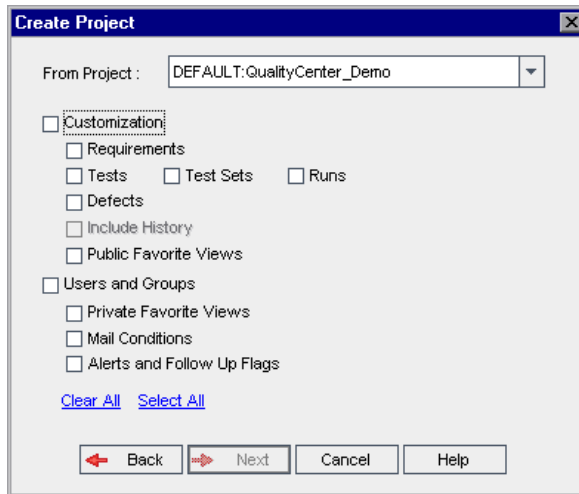
5 In the **From Project** box, select the project you want to copy.

6 Select **Customization** to copy project lists, host data, system and
user-defined fields, and transition rules to the new project. If this option is
selected, you can also choose to copy any of the following:

Option	Description
Requirements	Copies requirement data from the project. Selecting this option enables you to choose **Include History**.
Tests	Copies test data from the project. If this option is selected, you can also choose to copy the following options: • **Test Sets:** Copies test set data from the project. • **Runs:** Copies test run data from the project. Selecting this option enables you to choose **Include History**.
Defects	Copies defect data from the project. Selecting this option enables you to choose **Include History**.

Option	Description
Include History	Copies history data for the options that are selected.
Public Favorite Views	Copies public favorite view data from the project. For more information, refer to the *Mercury Quality Center User's Guide*.

7 Select **Users and Groups** to copy user and group information and permission settings. If this option is selected, you can also copy any of the following:

Option	Description
Private Favorite Views	Copies private favorite view data from the project. For more information, refer to the *Mercury Quality Center User's Guide*.
Mail Conditions	Copies the mailing configuration data. For more information, see "Configuring Automail" on page 179.
Alerts and Follow up Flags	Copies alerts and follow up flags. For more information, refer to the *Mercury Quality Center User's Guide*.

8 To clear all options, click **Clear All**.

9 To select all options, click **Select All**.

10 Click **Next** to continue, and perform steps 4 - 15 in "Creating Quality Center Projects" on page 19.

After you successfully complete these steps, the contents of the existing project is copied to a new project, and the new project is added to the Projects list.

Exporting and Importing Projects

Exporting Quality Center projects enables you to take project data from a Quality Center server, and back it up to another location or on some other media device. For example, you may want to create self-contained project image files that are backed up on a USB key or DVD. You can send the media device to a Quality Center server in another location, and import the project files. For more information on exporting projects, see "Exporting a Project" on page 28.

You can import data from exported Quality Center project files or from customized projects created by content providers. For example, you can import customized tests, requirements, and test sets for SAP testing, Siebel testing, and SOX compliance testing created by Mercury content providers. For more information on importing projects, see "Importing a Project" on page 29.

Exporting a Project

You can export Quality Center project data to other locations or media devices. When you export a project file, it is saved and exported in ZIP format.

Note: You can export a Quality Center project only if its project repository is stored in the database. To export a project repository stored in the file system, you must upgrade it and move its repository to the database.

To export a Quality Center Project:

1 In Site Administration, click the **Site Projects** tab.

2 In the Projects list, select a project, and click the **Export Project to QC Project File** button. Alternatively, right-click the project and choose **Export Project**. If the project is active, you are prompted to deactivate it. For more information, see "Deactivating and Activating Projects" on page 40.

3 The Save As dialog box opens. Select the directory where you want to save the project data. Enter a name for the project in the **File name** box. By default, the data is saved as a Quality Center Project Export file (**.qcp**).

4 Click **Save** to save the project data as a Quality Center Project Export file.

Importing a Project

You can import Quality Center project data from exported Quality Center project files or from customized project files created by content providers.

To import a Quality Center Project:

1 In Site Administration, click the **Site Projects** tab.

2 You can do one of the following:

➤ Select the domain to which you want to import a project, and click the **Import Project from QC Project File** button. Alternatively, right-click the domain and choose **Import Project**.
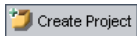
➤ Click the **Create Project** button, and choose the **Create a project by importing data from an exported Quality Center project file** option. Click **Next**.

3 The Create Project: Select File for Import dialog box opens.
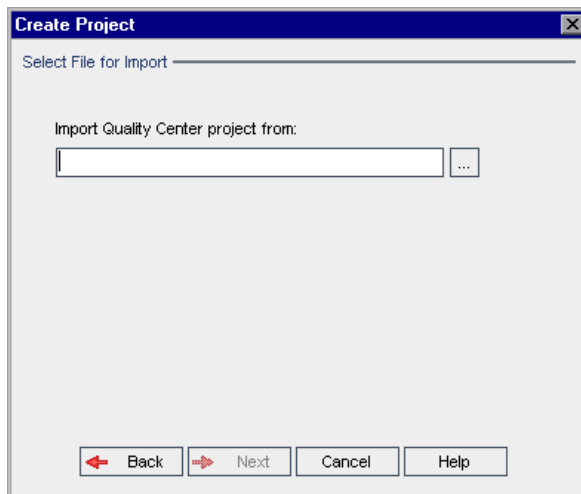
Click the browse button to the right of the **Import Quality Center project from** box to locate the project that you want to import. The Open dialog box opens.

4 Locate the directory.

5 Select the Quality Center Project Export file that you want to import, and click **Open**. The selected file is displayed in the **Import Quality Center project from** box.

6 Click **Next**, and continue with steps 4 - 15 in "Creating Quality Center Projects" on page 19.

After you successfully complete these steps, the data is imported to a new project, and the new project is added to the Projects list.

Updating Project Details

You can update project details such as database type and project directory from the Project Details tab. You can also enable the automatic sending of defect e-mail. Updated project details are written to the dbid.xml file, so that if a project is restored, the updated project data is used. For more information, see "Restoring Access to Quality Center Projects" on page 45.

Tip: You can move a project to a different domain in the Projects list using a drag-and-drop operation. Note that this does not change the physical location of the project.

To update project details:

1 In Site Administration, click the **Site Projects** tab.

2 In the Projects list, select a project. In the right pane, select the **Project Details** tab. The project's details are displayed.
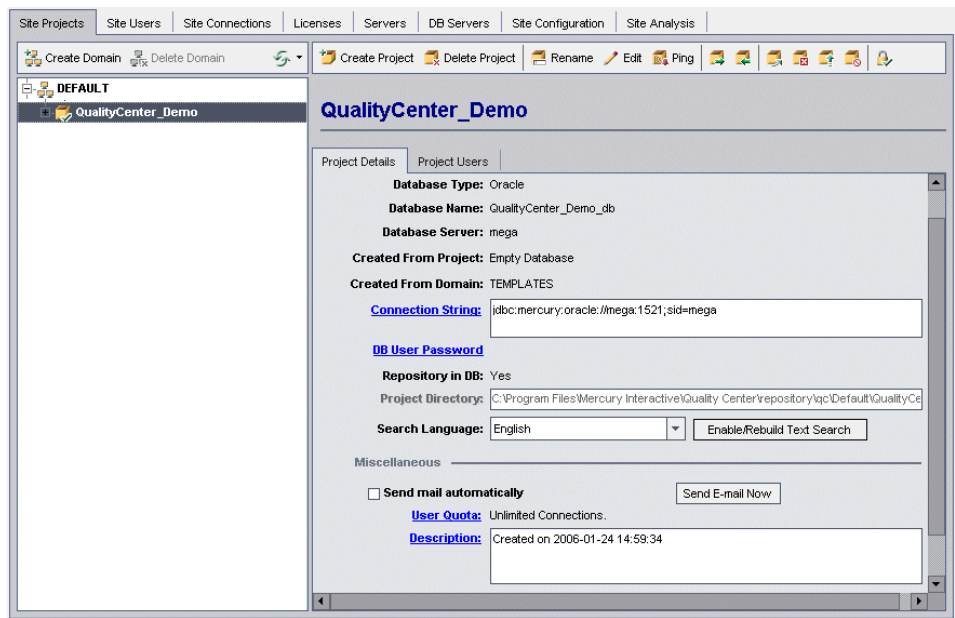
Note: If a project is inactive, the project icon is displayed in red. To activate, see "Deactivating and Activating Projects" on page 40.

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3 Under **Project Database**, view the following project details:

Field	Description
Database Type	The database type can be MS-SQL or Oracle.
Database Name	The project name, as defined in the database.
Database Server	The name of the database server on which the database is located.
Created From Project	The project was copied from this project. An **Empty Database** value indicates that the project was not copied. For more information, see "Copying Quality Center Projects" on page 25.
Restored From Project	The project was restored from this project. For more information, see "Restoring Access to Quality Center Projects" on page 45. Note that this field is displayed instead of **Created From Project**.
Created From Domain	The project was copied from this domain.
Restored From Domain	The project was restored from this domain. For more information, see "Restoring Access to Quality Center Projects" on page 45. Note that this field is displayed instead of **Created From Domain**.
Connection String	The connection string. To modify the connection string, see "Editing the Connection String" on page 44.
DB User Password	The user password for the Oracle server on which the database is located. To modify this password, see "Modifying Database Server Properties" on page 100.

Field	Description
Repository in DB	Indicates where the project's repository is stored. If **Yes**, the project's repository is stored in the database. If **No**, the project's repository is stored in the file system. For more information, see "Understanding the Quality Center Project Structure" on page 13.
Project Directory	The location of the project repository in the file system.
Search Language	Indicates the search languages for performing a text search. For more information, see "Selecting a Text Search Language for a Project" on page 104.
Enable/Rebuild Text Search	If you enable the **Text Search** link in the **DB Servers** tab after you have added a project to the Projects list in the Site Projects tab (for example, after creating, upgrading, or migrating a project), you must also click the **Enable/Rebuild Text Search** button. For more information, see "Enabling Text Search for the Database Server" on page 103.

4 Select **Send mail automatically** to enable the mail configuration settings for a project. This instructs Quality Center to send e-mail to specified users every time set defect fields are updated. For more information on configuring mail, see Chapter 12, "Configuring Automail."

Quality Center sends the defect messages automatically, at specified time intervals. To edit the time interval, refer to the MAIL_INTERVAL parameter in the **Site Configuration** tab. You can also specify if you want the e-mail to include attachments and/or history. For more information, see "Setting Quality Center Configuration Parameters" on page 107.

To manually send the defect messages that have accumulated during the current time interval, click the **Send E-mail Now** button.

5 To change the number of users allowed to connect concurrently to the project, click the **User Quota** link. The Project User Quota dialog box opens.
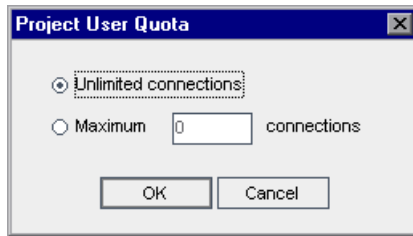
Choose **Maximum Connections** and type the maximum number of concurrent connections allowed. Click **OK**.

Notes:

➤ The maximum number of users allowed to connect concurrently to the project should not exceed the number of users allowed to connect to its domain. For more information, see "Creating Quality Center Domains" on page 16.

➤ If you are working with the Quality Center Starter Edition, only five users can connect concurrently to each Quality Center server.

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6 To add a description for the project, click the **Description** link. In the Edit Project Description dialog box, type your description and click **OK**.

7 Click the **Refresh Projects List** button to refresh the projects in the selected domain. To refresh projects in all domains, click the **Refresh Projects List** arrow and choose **Refresh All Domains**.

8 To assign users to a project, see "Assigning Users to Projects" on page 35.

Assigning Users to Projects

As a site administrator, you can control access to Quality Center projects by defining the users that can log on to the project. You can assign users to projects from the Quality Center Users list, or copy users from existing Quality Center projects. You can also assign users as project administrators. For more information on assigning project administrators, see "Assigning Project Administrators" on page 37.

When a user is no longer working on a project, you should remove the user from the project to ensure project security. Note that removing a user from a project does not delete the user from the Quality Center Users list.

Note:

➤ As a Quality Center project administrator, you can assign and remove users from projects, and change user privileges from the Project Customization window. For more information, see Chapter 9, "Managing Users in a Project".

➤ You can assign projects to users from the Site Users tab. For more information, see "Assigning Projects to Users" on page 82.

To assign users to a project:

1 In Site Administration, click the **Site Projects** tab.

2 In the Projects list, select a project. In the right pane, select the **Project Users** tab.

The users for the selected project are displayed.
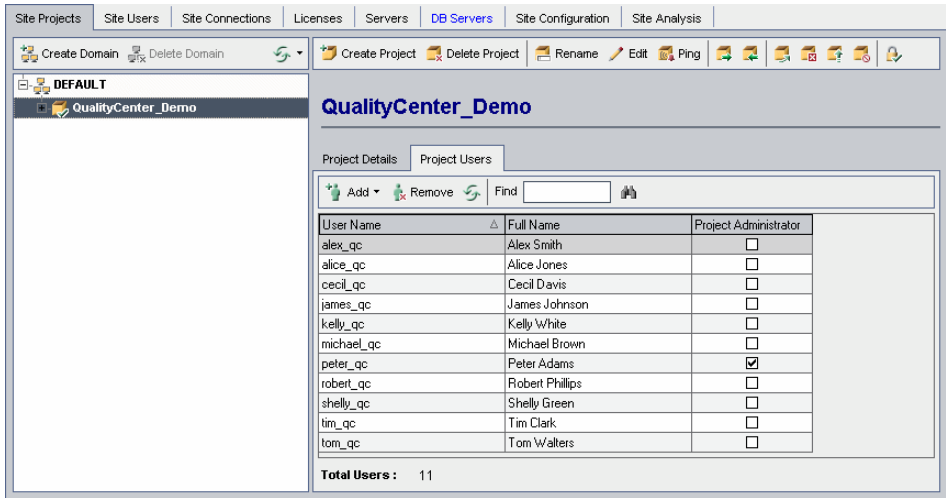
You can click the **User Name** or **Full Name** column to change the sort order of user names or full names in the Project Users list from ascending to descending. You can also click the **Project Administrator** column to group users by project administrators.

3 Click the **Add** button, and choose one of the following options:

➤ **Add From The Users List:** The Users list is displayed to the right of the Project Users tab. Select the users that you want to assign to the project. You can search for users by typing a search string in the **Find** box above the Users list, and clicking the **Find** button.

➤ **Copy From Another Project:** The Projects list is displayed to the right of the Project Users tab. To copy a user, click a project to expand the project directory, and select the user name check box. To copy all users from a project, select the project's check box. To clear all selected users, click **Clear All**.

4 Select users from the Users list or Projects list, and click the **Add Selected Users To The Project** button. The selected users are displayed in the Project Users list.

5 To remove a user from a project, select the user in the Project Users list and click the **Remove** button. Click **Yes** to confirm. The user is removed from the Project Users list.

6 To refresh the Project Users list or Users list, click the **Refresh** button above the appropriate list.

Assigning Project Administrators

After you add users to projects you can assign users as project administrators (belonging to the TDAdmin user group). Project administrators have full privileges in the Quality Center project from the Project Customization window. For more information, see Chapter 10, "Managing User Groups and Permissions".

When you copy users from other projects, they are added with the same user group privileges they had in the project from which they were copied, provided the user group exists in this project. If the user group does not exist in this project, the users are added with Viewer group privileges. If you copy a user from another project in which he/she is a project administrator, the user is automatically assigned as a project administrator in this project.

When you add users to the project from the Users list, those users are added with Viewer group privileges (read-only privileges).

Note: You can also assign project administrators when you create a new project. For more information, see "Creating Quality Center Projects" on page 19.

To assign Project Administrator privileges to a user:

1 In Site Administration, click the **Site Projects** tab.

2 In the Projects list, select a project. In the right pane, select the **Project Users** tab.

3 In the Project Users list, select the **Project Administrator** check box for each user you want to assign as a project administrator.

4 To remove a user from the Project Administrator group, clear the **Project Administrator** check box, and confirm you want to remove the user from the group.

Querying Project Tables

You can query specific data that is stored in your project. You query a project by defining and running SQL statements. The following examples show SQL queries and the results that they return.

Query	Results
select * from BUG where BG_STATUS = 'Open'	All defects that are open.
select * from BUG where BG_RESPONSIBLE = 'james_qc' or BG_RESPONSIBLE = 'mary_qc'	All defects assigned to either James or Mary.

Query	Results
select count (*) from BUG where BG_RESPONSIBLE = 'mary_qc'	The number of defects assigned to Mary.
select * from BUG where BG_RESPONSIBLE='james_qc' and BG_STATUS='open'	All open defects assigned to James.

Using the first query example, the SQL query returns the following:
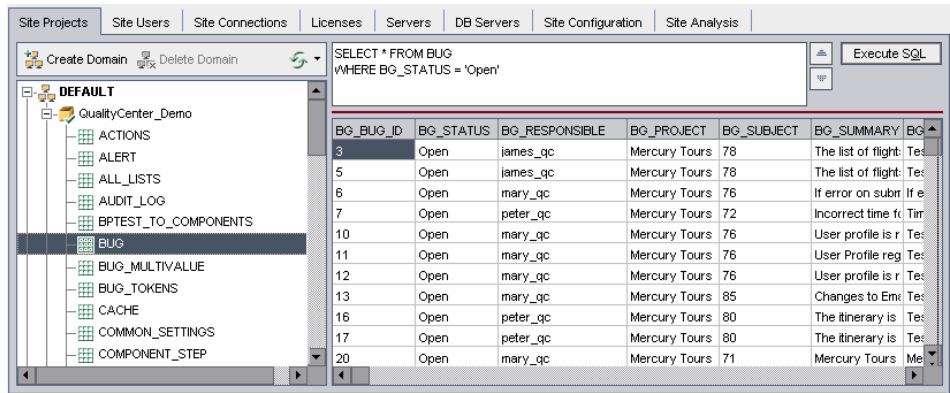
To query a project:

 1 In Site Administration, click the **Site Projects** tab.

 2 In the Projects list, double-click a project.

 3 Select a table. Quality Center automatically runs the "SELECT *" query for this table and displays all the data for the table in the SQL Query Results grid.

 4 Define a query by typing an SQL statement in the SQL pane.

 5 Click the **Execute SQL** button or press **Alt+Q**. The data returned by the query appears in the SQL Query Results grid.

Deactivating and Activating Projects

You can deactivate or activate a Quality Center project. When you deactivate a project, the project name is removed from the **Projects** box in the Mercury Quality Center Login window. The project is not deleted from the server. Any users currently connected to the project are forced to log out when you deactivate.

Note: It is recommended that you deactivate a project before you change any data that may cause inconsistency for a connected user.

To deactivate a project:

1 In Site Administration, click the **Site Projects** tab.

2 In the Projects list, select a project.

3 Click the **Deactivate Project** button. A message box indicates that all connected users will be disconnected.

4 Click **OK** to confirm. The project is deactivated and the project icon is changed in the Projects list.

To activate a project:

1 In Site Administration, click the **Site Projects** tab.

2 In the Projects list, select a project.

3 Click the **Activate Project** button. The project is activated and the project icon is changed in the Projects list.

Pinging Projects

You can check whether a project is connected to Site Administration.

To ping a project:

1 In Site Administration, click the **Site Projects** tab.

2 In the Projects list, select a project.

3 Click the **Ping Project** button.

4 Click **OK** when prompted with a message that the ping was successful.

Renaming Projects

You can rename a project in the Projects list.

To rename a project:

1 In Site Administration, click the **Site Projects** tab.

2 In the Projects list, select a project.

3 Click the **Rename Project** button. If the project is active, you are prompted to deactivate it. For more information, see "Deactivating and Activating Projects" on page 40.

4 In the Rename Project dialog box, enter the new name for the project and click **OK**. The project is renamed in the Projects list.

Removing Projects

You can remove a project from the Projects list in Site Administration. Note that this does not delete the project from the server and you can restore the project if necessary. For more information on restoring access to a project, see "Restoring Access to Quality Center Projects" on page 45.

To remove a project from the Projects list:

1 In Site Administration, click the **Site Projects** tab.

2 In the Projects list, select a project.

3 Click the **Remove Project** button.

4 Click **OK** to confirm. Note that if the project is still active, you are prompted to deactivate it. For more information, see "Deactivating and Activating Projects" on page 40.

5 Click **OK**.

Deleting Projects

You can delete a project from the Projects list in Site Administration. Note that this deletes the contents of the project from the server and you cannot restore the project.

To delete a project:

1 In Site Administration, click the **Site Projects** tab.

2 In the Projects list, select a project.

3 Click the **Delete Project** button.

4 Click **OK** to confirm. Note that you are prompted if there are active users connected to the project.

In addition, if you did not specify a database administrator user name or password, the Database Admin Password dialog box opens. Enter the database administrator's user name and password and click **OK**.

5 Click **OK**.

Deleting Domains

You can delete a domain. It is removed from the Projects list, and its contents are deleted from the server.

Note: You cannot delete a domain if it contains projects. To delete the domain, you must first delete the projects. For more information, see "Deleting Projects" on page 42.

To delete a domain:

1 In Site Administration, click the **Site Projects** tab.

2 In the Projects list, select a domain.

3 Click the **Delete Domain** button.

4 Click **Yes** to confirm.

Editing the Connection String

You can edit a project's connection string. For more information on connection strings, see "Defining New Database Servers" on page 97.

To edit the connection string:

1 In Site Administration, click the **Site Projects** tab.

2 In the Projects list, select a project.

3 Click the **Edit Connection String** button. If the project is still active, you are prompted to deactivate it. For more information, see "Deactivating and Activating Projects" on page 40.

The Connection String Editor dialog box opens.
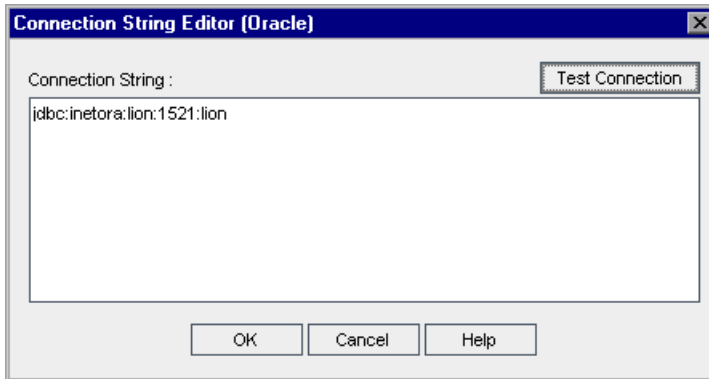
4 In the **Connection String** box, modify the attributes of the connection string.

5 To test the connection string, click **Test Connection**.

6 Click **OK** to save your connection string modification and close the Connection String Editor.

Restoring Access to Quality Center Projects

You can restore access to a Quality Center project that is not in your current Projects list in Site Administration. For example, you may want to access a project from another server. After you restore access to a project, it is added to the Projects list in Site Administration.

Note: To restore a TestDirector 7.6 or 8.0 project, you must migrate the project to Quality Center 9.0. For more information, see Chapter 3, "Upgrading and Migrating Projects."

To restore access to a Quality Center project:

1 In Site Administration, click the **Site Projects** tab.

2 Click the **Restore Project** button. The Restore Project dialog box opens.
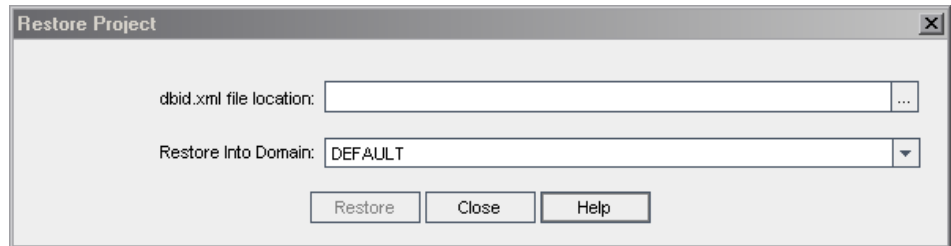
3 To locate the file that includes the project that you want to restore, click the browse button to the right of the **dbid.xml file location** box. The Open File dialog box opens.

4 Locate the file.

5 Select the dbid.xml file and click **Open**. The Restore Project dialog box opens and displays the database name, type, and server, and the directory path of the project.
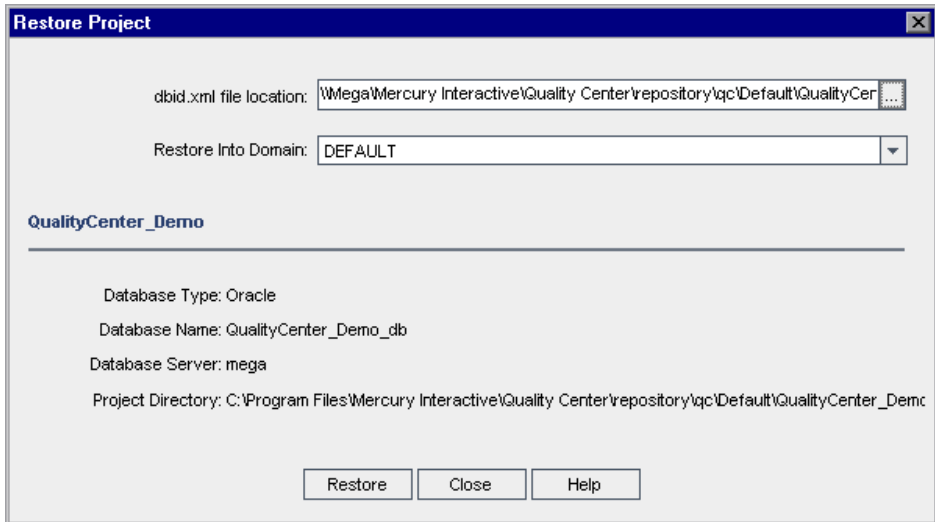
6 In the **Restore Into Domain** box, select the domain in which you want the restored project to be located.

7 Click **Restore**.

8 If your database server does not have the text search feature enabled, a message box opens. You can enable the text search feature before or after this process completes.

➤ Click **Yes** to continue this process. After the process completes, you can enable the text search feature.

➤ Click **No** to stop this process. Enable the text search feature and then restart the process.

For more information on enabling the text search feature, see "Configuring Text Search" on page 102.

9 When the restore process completes, click **OK**.

10 Click **Close** to close the Restore Project dialog box and view the restored project in the Projects list.

Backing Up and Restoring Quality Center Projects

You can protect data stored in your databases by backing up your projects. It is recommended that you back up your projects before you uninstall, upgrade, or migrate from a previous version.

To back up a Quality Center project:

1 Back up the database schema on the database.

➤ **For Oracle:** Use the **exp** command.

➤ **For Microsoft SQL and MSDE:** From the SQL Server Enterprise Manager, choose **Tools** > **Backup Database**.

2 If the project repository is stored in the file system, back up the project repository by copying it.

To restore a backed up Quality Center project:

1 Restore the database schema on the database.

➤ **For Oracle:** Use the **imp** command.

➤ **For Microsoft SQL and MSDE:** From the SQL Server Enterprise Manager choose **Tools** > **Restore Database**.

2 If the project repository is stored in the file system, copy the backed up repository to the Quality Center repository.

3 In Site Administration, restore the project. Note that if you are restoring your project from a different directory, or if you renamed your schema, you must update the **dbid.xml** file accordingly. For more information on restoring projects, see "Restoring Access to Quality Center Projects" on page 45.

Renaming the Defects Module for a Project

You can rename the Defects module for a specific project. For example, you can change the name of the Defects module from **Defects** to **Bugs**. You rename the Defects module by adding a parameter to the **DATACONST** table of the project. For more information on modifying project tables, see "Querying Project Tables" on page 38.

Note: You can rename any Quality Center module for all your projects by adding the **REPLACE_TITLE** parameter in the **Site Configuration** tab. For more information, see "Setting Quality Center Configuration Parameters" on page 107.

To rename the Defects module for a project:

1 In Site Administration, click the **Site Projects** tab.

2 In the Projects list, double-click the project for which you want to rename the Defects module.

3 Select the **DATACONST** table.

4 In the SQL pane, type an SQL INSERT statement to insert a row into the table with the following values:

➤ In the **DC_CONST_NAME** column, insert the parameter name REPLACE_TITLE.

➤ In the **DC_VALUE** column, insert a string that defines the new name for the Defects module, in the following format:

original title [singular];new title [singular];original title [plural];new title [plural]

For example, to change the name of the module from **Defects** to **Bugs**, type the following SQL statement into the SQL pane:

insert into dataconst values ('REPLACE_TITLE', 'Defect;Bug;Defects;Bugs')

5 Click the **Execute SQL** button. The new row is added to the **DATACONST** table. The Quality Center project displays the new Defects module name.

3

Upgrading and Migrating Projects

To work with previously created projects, you must upgrade or migrate them to your current version of Quality Center.

This chapter describes:

➤ About Upgrading and Migrating Projects

➤ Upgrading Quality Center Projects

➤ Migrating TestDirector Projects to Quality Center

About Upgrading and Migrating Projects

To work with a project from a previous version, you may need to upgrade or migrate your project to Quality Center. The following table describes the process required for working with a previously created project.

From Quality Center or TestDirector:	To Quality Center 9.0:
Quality Center 8.*x*	You must upgrade the project to Quality Center 9.0 using Quality Center 9.0 Site Administration. For more information, see "Upgrading Quality Center Projects" on page 50.
TestDirector 7.6 or 8.0	You must migrate the project to Quality Center 9.0 using the Quality Center 9.0 Migration Tool. For more information, see "Migrating TestDirector Projects to Quality Center" on page 54.

Upgrading Quality Center Projects

This section describes how to upgrade projects from Quality Center 8.*x* to Quality Center 9.0. You can choose to upgrade one project at a time, or several projects in a domain concurrently.

If your project's repository is currently stored in the file system, you can upgrade the project and store its repository in the database, or you can continue to store it in the file system. For more information, refer to "Understanding the Quality Center Project Structure" on page 13.

After you have upgraded, you can no longer use your projects with a previous Quality Center version.

It is recommended that you back up your Quality Center projects before commencing the upgrade process. For more information, see "Backing Up and Restoring Quality Center Projects" on page 47.

To upgrade a single project:

1 In Site Administration, click the **Site Projects** tab.

2 In the Projects list, select a project.

3 Click the **Upgrade Project** button.

4 If your database server does not have the text search feature enabled, a message box opens. You can enable the text search feature before or after this process completes.

➤ Click **Yes** to continue this process. After the process completes, you can enable the text search feature.

➤ Click **No** to stop this process. Enable the text search feature and then restart the process.

For more information on enabling the text search feature, see "Configuring Text Search" on page 102.

5 If the project is active, you are prompted to deactivate it. For more information, see "Deactivating and Activating Projects" on page 40.

6 If the project's repository is currently stored in the file system, you can:

➤ Click **Yes** to confirm that you want to move the repository to the database.

➤ Click **No** to confirm that you want to keep the repository in the file system.

For more information on project repositories, see "Understanding the Quality Center Project Structure" on page 13.

7 Click **Yes** to confirm that you want to upgrade your project. The upgrading process starts.

8 When the upgrade process completes, you are prompted to activate the project. Click **Yes**.

To upgrade several projects in a domain concurrently:

1 In Site Administration, click the **Site Projects** tab.

2 In the Projects list, select a domain.

3 Click the **Upgrade Multiple Projects** button. The Upgrade Multiple Projects dialog box opens.

4 Under **After the upgrade**, choose whether you want Quality Center to leave all projects deactivated after the upgrade, activate only the previously active projects, or activate all projects. Note that by default, only the currently active projects are activated after the upgrade is performed.

5 Under **Project Repository**, if any of the projects that you are about to upgrade contain project repositories in the file system, you can select **Move project's repository from the file system to the database** to move the repositories to the project databases. For more information on project repositories, see "Understanding the Quality Center Project Structure" on page 13.

6 You can view the current version numbers of your projects. You can view the version numbers for all the projects in the domain, or select specific projects for which you want to view the version numbers:

➤ To view the version numbers for all projects, click **Select All** and then click the **Display Versions** button.

➤ To view the version numbers for specific projects only, select the boxes beside the project names ☑ and click the **Display Versions** button.

The project version number appears in the **Version** column.

7 You can upgrade all projects in the domain, or select specific projects to upgrade:

➤ To upgrade all projects, click **Select All** and then click the **Upgrade Projects** button.

➤ To upgrade specific projects only, select the boxes beside the project names ☑ and click the **Upgrade Projects** button.

8 If your database server does not have the text search feature enabled, a message box opens. You can enable the text search feature before or after this process completes.

➤ Click **Yes** to continue this process. After the process completes, you can enable the text search feature.

➤ Click **No** to stop this process. Enable the text search feature and then restart the process.

For more information on enabling the text search feature, see "Configuring Text Search" on page 102.

9 If a project is active, you are prompted to deactivate it. For more information, see "Deactivating and Activating Projects" on page 40.

10 The upgrading process and results are displayed in the **Upgrade Results** box. Click **Close** to close the Upgrade Multiple Projects dialog box.

Migrating TestDirector Projects to Quality Center

To work with TestDirector 7.6 or 8.0 projects, you must migrate the projects to Quality Center 9.0. Projects are migrated to Quality Center using the Migration Tool. You must specify the *source* and *target* servers. The source server is the TestDirector server from which you want to migrate the project. The target server is the Quality Center server to which you want to migrate the project. When migrating from TestDirector, you can use the same repository used in TestDirector, or you can copy the repository to Quality Center.

Note: If you are working with the Quality Center Starter Edition:

➤ You can only migrate Microsoft Access projects.

➤ UNIX and Linux are not supported.

This section describes the migration prerequisites, the migration workflow, the repository migration options, and the migration process.

Migration Prerequisites

Before you start the migration process, make sure that you consider the following issues:

➤ It is recommended that you back up your TestDirector project before you start the migration process. For more information, refer to the TestDirector for Quality Center Knowledge Base (http://support.mercury.com) and search for Problem ID 18859. You can also refer to the *TestDirector 8.0 Administrator's Guide*.

➤ The user account that is running the Quality Center (target) server must have the same read and write permissions as the user account used to run the TestDirector (source) server.

➤ To specify the maximum number of projects that can be migrated from TestDirector to Quality Center at one time, set the **MIGRATION_MAX_NUMBER_OF_PROJECTS** parameter. By default, you can migrate up to 50 projects at a time. For more information, see "Setting Quality Center Configuration Parameters" on page 107.

➤ For more information on the migration process, refer to the TestDirector for Quality Center Knowledge Base (http://support.mercury.com) and search for Problem ID 37306.

Migration Workflow

When you migrate projects from TestDirector to Quality Center, the following events occur:

➤ The TestDirector project is upgraded to Quality Center.

➤ The project is removed from the TestDirector server but it remains on the database server. The project can now be accessed only from the Quality Center server.

➤ The users are imported from TestDirector to Quality Center.

➤ The Site Configuration parameters are imported from TestDirector to Quality Center.

➤ One of the following migration options is performed:

  ➤ If you choose the **Use the current repository** option, the repository path is updated so that it can be accessed by Quality Center.

  ➤ If you choose the **Create a copy of all repository data on the target server database** option, the repository is copied to Quality Center and is stored in the database.

  ➤ If you choose the **Create a copy of all repository data on the target server file system** option, the repository is copied to Quality Center and is stored in the file system.

For more information on migration options, see "Choosing a Repository Migration Option" on page 56.

Choosing a Repository Migration Option

The Migration Tool provides the following options for migrating the repository:

➤ **Use the current repository:** Uses the same repository used in TestDirector. You need to define the path to be accessed by Quality Center.

➤ **Create a copy of all repository data on the target server database:** Copies the repository to Quality Center and stores it in the database.

➤ **Create a copy of all repository data on the target server file system:** Copies the repository to Quality Center and stores it in the file system.

Note:

➤ When migrating Microsoft SQL Server or Oracle-based TestDirector projects, the databases of these projects are not copied to Quality Center.

➤ If you are working with the Quality Center Starter Edition, when migrating Microsoft Access-based TestDirector projects, the databases of these projects are copied to MSDE.

The following table compares the migration options:

Use the current repository	Create a copy of all repository data on the target server database	Create a copy of all repository data on the target server file system
The repository is unchanged.	The repository is copied to Quality Center and stored in the database.	The repository is copied to Quality Center and stored in the file system.
Additional configurations may be required on the TestDirector and Quality Center servers. See table below.	No additional configurations are required.	No additional configurations are required.
This option is faster than the two other available options.	This option is slower than the **Use the current repository** option.	This option is slower than the **Use the current repository** option.

To work with the **Use the current repository** option, the following additional configurations may be required:

	Configure the repository for Quality Center on Windows	**Configure the repository for Quality Center on UNIX or Linux**
Repository is on the same computer as the TestDirector server	On the TestDirector server, share the repository directory so that it can be accessed from Quality Center by a UNC path by the user running Quality Center.	Configure the repository and the Quality Center computer settings so that the repository on the TestDirector computer can be accessed from the Quality Center computer by a UNIX/Linux-based path.
Repository is on a different computer than the TestDirector server	No need to modify the UNC path. The same path can be used by Quality Center. Note that the user running Quality Center must have permissions to this shared path.	Configure the repository and the Quality Center computer settings so that the repository on a computer other than TestDirector can be accessed from the Quality Center computer by a UNIX/Linux-based path.

When choosing the **Create a copy of all repository data on the target server database** or **Create a copy of all repository data on the target server file system** options, the Migration Tool uses the HTTP protocol to copy the repository from the TestDirector server to the Quality Center server. If the TestDirector repository is larger than 3 GB or if it contains over 200 projects, the migration process may take a long time to complete.

To improve performance, instead of using these options, you can copy the repository at the operating system level. For more information on copying from the operating system level, refer to the TestDirector for Quality Center Knowledge Base (http://support.mercury.com) and search for Problem ID 38780.

Migrating Projects

This section describes how to migrate a project from TestDirector to Quality Center. Before you start the migration process, it is recommended that you review "Migration Prerequisites" on page 54, and "Choosing a Repository Migration Option" on page 56.

To migrate a project:

1 On the TestDirector machine, insert the Quality Center CD-ROM into the CD-ROM drive. Install the **MercuryQualityCenter_MigrationTool.exe** file.

Note: Make sure that the executable is installed using the same user account that is used for running the TestDirector server.

---

2 On a separate machine, open the Mercury Quality Center Site Administration (http://<Quality Center server name>[<:port number>]/sabin), and log in. Site Administration opens.

`TOOLS ▼` **3** To open the Migration Tool, click the **Tools** button on the upper-right corner of the Site Administration window. Choose **Migration Tool**. The Login Servers page opens.

4 Under **Source Login**, specify the following:

➤ In **TestDirector URL**, specify the TestDirector URL from which you want to migrate the project (http://<TestDirector server name>/tdbin).

➤ In the **Password** box, type the TestDirector password for logging in to the Site Administrator.

5 Under **Target Login**, specify the following:

➤ In **Quality Center Site Admin URL**, specify the Quality Center Site Administration URL to which you want to migrate the project (http://<Quality Center server name>[<:port number>]/sabin).

➤ In the **User Name** box, type the Quality Center site administrator user name.

➤ In the **Password** box, type the Quality Center site administrator password.

6 Click **Next**. The Domains and Projects page opens.
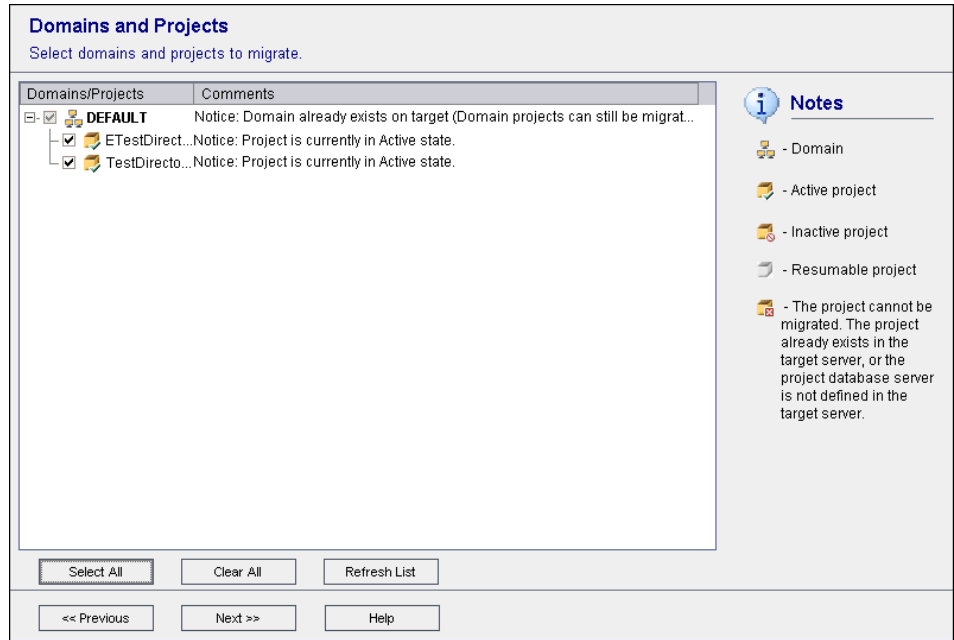
7 Select the projects to be migrated. To select all projects, click **Select All**.

Note that you cannot migrate a project in the following situations:

➤ A project of that name already exists on the Quality Center server.

➤ The project database server is not defined on the Quality Center server. On the Quality Center target server, define the database server configuration to be identical to that defined on the TestDirector source server. For more information on defining a database server, see "Defining New Database Servers" on page 97.

➤ If you are working with the Quality Center Starter Edition, you cannot migrate Oracle or Microsoft SQL Server projects. You can only migrate Microsoft Access projects.

8 To clear all selected projects, click **Clear All**.

9 To refresh the projects list, click **Refresh List**.

10 If the migration process was previously interrupted before completion, you can resume the process. To resume, select a resumable project from the projects list or click **Select All Resumable** to select all resumable projects. Click **Resume** to continue the migration process. Note that these buttons are available only if you have resumable projects.

11 Click **Next**. The Repository page opens.

12 Choose a repository migration option:

➤ **Create a copy of all repository data on the target server database:** Copies the repository to Quality Center and stores it in the database.

➤ **Create a copy of all repository data on the target server file system:** Copies the repository to Quality Center and stores it in the file system.

➤ **Use the current repository:** Defines the repository path to be used by Quality Center. You will continue to work with the same repository used in TestDirector.

For more information on the repository migration options, see "Choosing a Repository Migration Option" on page 56.

13 If you chose **Create a copy of all repository data on the target server database** or **Create a copy of all repository data on the target server file system**, proceed to step 15 on page 66.

If you chose **Use the current repository**, modify the target repository path in the **Repository Path on Target Server After Migration** box, as follows:

➤ If the target server runs on a Windows platform, modify the path from an absolute path to a UNC path. For example, change the target path from F:\Td_dir to \\<source_server>\Td_dir.

➤ If the target server runs on a UNIX or a Linux platform, modify the Windows-based path to the UNIX-based path. For example, to modify an absolute path to a UNIX/Linux-based path, change the target path from F:\Td_dir to /net/<source_server>/td_dir.

To undo all changes, click **Restore All** and then click **Yes** to confirm.

14 To modify or verify the physical path of a project on the Quality Center server, click **Advanced**.

If your database server does not have the text search feature enabled, a message box opens. After this process completes, you can enable the text search feature. For more information, see "Configuring Text Search" on page 102.

The Repository Path page opens.

The following columns are available:

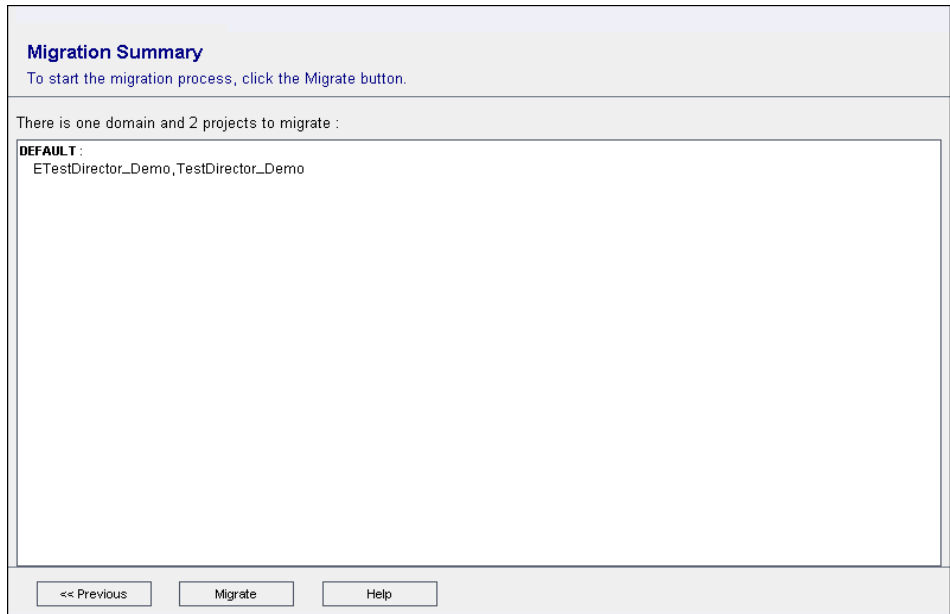| Column Name	Description
Projects	Indicates the project name.
DB Server Name	Indicates the name of the database server used for the project. The database server name used on the Quality Center machine must be the same as the name on the TestDirector machine.

Column Name	Description
Physical Location	Indicates the physical path of the project on the Quality Center server. To modify, double-click a physical location path or click **Modify**, and edit the path. If the Quality Center server runs on a UNIX or a Linux platform, modify the Windows-based path to the UNIX-based path. If the Quality Center server runs on a Windows platform, modify the path from an absolute path to a UNC path. • To verify the availability of the paths, click **Verify Paths**. • To undo a change, click **Restore** and then click **Yes** to confirm. • To undo all changes, click **Restore All** and then click **Yes** to confirm.
Test Repository Location	The path is displayed if the test folder is not stored in the project repository. To modify, double-click a repository location path or click **Modify**, and edit the path. If the Quality Center server runs on a UNIX or a Linux platform, modify the Windows-based path to the UNIX-based path. If the Quality Center server runs on a Windows platform, modify the path from an absolute path to a UNC path. • To verify the availability of the paths, click **Verify Paths**. • To undo a change, click **Restore** and then click **Yes** to confirm. To undo all changes, click **Restore All** and then click **Yes** to confirm.

15 Click **Next**.

If your database server does not have the text search feature enabled, a message box opens. After this process completes, you can enable the text search feature. For more information, see "Configuring Text Search" on page 102.

The Migration Summary page opens.

Migration Summary
To start the migration process, click the Migrate button.

There is one domain and 2 projects to migrate :

DEFAULT :
ETestDirector_Demo,TestDirector_Demo

| << Previous | Migrate | Help |

16 Click **Migrate** to start the migration process. An information box opens.

17 Click **OK** to confirm.

18 When the migration process ends, an information box opens. Click **OK**.

19 To save the log file of the migration process as an HTML file, click **Save to File**.

20 Click **Close** to exit the Migration Tool.

4

Managing Quality Center Users

You manage Quality Center users in Site Administration. You can add new
Quality Center users, define user details, change user passwords, and define
site administrators. You can also import users from LDAP and enable LDAP
authentication for users. After you add users, you can assign projects to
users.

This chapter describes:

➤ About Managing Users

➤ Adding a New User

➤ Importing Users from LDAP

➤ Updating User Details

➤ Changing Passwords

➤ Enabling LDAP Authentication for Users

➤ Assigning Projects to Users

➤ Exporting User Data

➤ Deleting Users

About Managing Users

You use Site Administration to manage the users connected to your Quality Center projects. You begin by adding or importing new users to the Users list in Site Administration. You can then define user details and change or override a user's password. Note that you can also enable users to log in to Quality Center using their LDAP passwords.

For each Quality Center user, you can select projects that the user can access. You can also define Quality Center users as site administrators. For more information, see "Defining Site Administrators" on page 7.

Note: You can monitor the users currently connected to a Quality Center server. For more information, see Chapter 5, "Managing User Connections and Licenses."

Adding a New User

You can add new users to the Users list in Site Administration. After the user is added, you can view users and define user details. For more information on updating user details, see "Updating User Details" on page 78.

You can also import new users from LDAP directories. For more information, see "Importing Users from LDAP" on page 70.

Note: Creating a new user for a Quality Center project consists of two steps:

➤ Adding the user to the Users list in Site Administration (as described in this section).

➤ Assigning the user to a user group using Project Customization. Each user group has access to certain Quality Center tasks. For more information, see Chapter 9, "Managing Users in a Project," and Chapter 10, "Managing User Groups and Permissions."

To add a new user:

1 In Site Administration, click the **Site Users** tab.

| Site Projects | Site Users | Site Connections | Licenses | Servers | DB Servers | Site Configuration | Site Analysis |

User Name	Full Name
alex_qc	Alex Smith
alice_qc	Alice Jones
cecil_qc	Cecil Davis
james_qc	James Johnson
kelly_qc	Kelly White
mary_qc	Mary River
michael_qc	Michael Brown
paul_qc	Paul Winter
peter_qc	Peter Adams
robert_qc	Robert Phillips
shelly_qc	Shelly Lake
tim_qc	Tim Robins
tom_qc	Tom Veller

Password

alex_qc

| User Details | User Projects |

User Name: alex_qc

Full Name: Alex Smith

E-mail:

Phone Number:

Description: Demo user

Apply

Total Users : 13

2 Click the **New User** button. The New User dialog box opens.

New User

User Name:

Full Name:

E-mail:

Phone Number:

Description:

OK   Cancel   Help

3 Type a **User Name** (maximum length 60 characters) and **Full Name**.

4 Type additional user information: **E-mail**, **Phone Number**, and a **Description**. Note that the e-mail information is important, as it enables users to receive project information directly to their mailboxes.

Note: You can update user information in the User Details tab. For more information, see "Updating User Details" on page 78.

---

5 Click **OK**. The new user is added to the Users list.

Importing Users from LDAP

You can import users from an LDAP directory to the Users list in Site Administration.

Notes:

➤ To work with LDAP through SSL requires that you perform additional steps. For more information, refer to the TestDirector for Quality Center Knowledge Base (http://support.mercury.com) and search for Problem ID 34793.

➤ The **LDAP_TIMEOUT** parameter enables you to define a connection time-out between Quality Center and an LDAP server. By default, the value is set to 10 minutes. For more information, see "Setting Quality Center Configuration Parameters" on page 107.
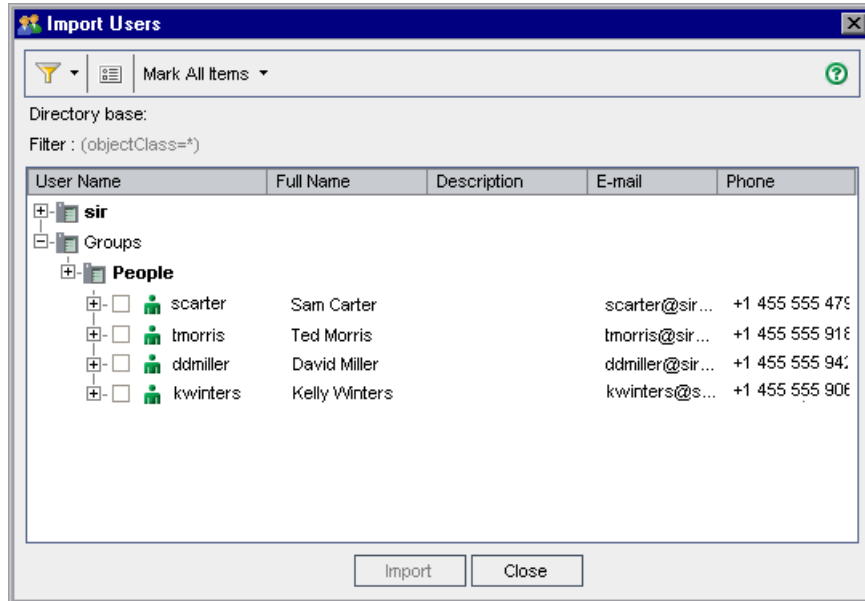

To import a user from LDAP:

1 In Site Administration, click the **Site Users** tab.

2 Ensure that the LDAP import settings are defined. For more information, see "Defining LDAP Settings for Importing Users" on page 72.

3 Click the **Import Users** button. The Import Users dialog box opens.

4 To filter the LDAP directory base, click the **Filter All** button. If you have preselected users, a warning message box opens. Click **OK** to clear all selections and continue. The Filter dialog box opens. Type a filter condition to display specific records from your LDAP directory base and click **OK**.

5 To view LDAP details for a user, select an item and click the **Show LDAP Details** button. The LDAP User Details dialog box opens and displays the user attributes.

6 You can use the following options to import users:

➤ To import a user, expand a directory and mark the user name by selecting the check box.

➤ To import a group of users, use **Ctrl** or **Shift** to highlight users to include. Click the **Mark All Items** arrow and choose **Mark Selected Items** to select the check boxes of the highlighted users.

➤ To import all users, click **Mark All Items**.

7 To clear the check boxes of highlighted users, click the **Mark All Items** arrow and choose **Clear Selected Items**. To clear all check boxes, click the **Mark All Items** arrow and choose **Clear All**.

8 Click **Import**. A confirm message box opens. Click **Yes** to continue.

➤ If the users were imported successfully, a message box opens. Click **OK**. Proceed to step 9.

➤ If the same user names exist in the Users list, the Handle Conflict dialog box opens. For more information, see "Handling User Name Conflicts" on page 76.

9 Click **Close** to close the Import Users dialog box.

Defining LDAP Settings for Importing Users

To enable you to import users from an LDAP directory to the Users list in Site Administration, you must define your LDAP import settings.

When you import users from an LDAP directory, Quality Center copies attribute values from an LDAP directory into Quality Center. For each imported user, the following attribute values are copied:

➤ **Distinguished name (DN):** A unique name that is made up of a sequence of relative distinguished names (RDN) separated by commas.

For example: CN=John Smith, OU=QA, O=Mercury

where CN is the common name; OU is the organizational unit; and O is the organization.

➤ **Userid (UID):** The name that identifies a user as an authorized user. The UID attribute value is mapped to the **User Name** field in Quality Center.

➤ **Full Name, Description, E-mail and Phone:** Optional attributes that are used to populate the Full Name, Description, E-mail, and Phone Number fields for each user imported from an LDAP directory.

To define LDAP settings for importing users:

1 In Site Administration, click the **Site Users** tab.

2 Click the **User Settings** button and choose **LDAP Import Settings**. The LDAP Import Settings dialog box opens.

3 In the **Directory provider URL** box, type the URL of the LDAP server (ldap://<server name>:<port number>).

4 Under **LDAP authentication type**:

➤ Select **Anonymous** to enable you to import users from the LDAP server using an anonymous account.

➤ Select **Simple** to enable you to import users from the LDAP server using an authorized user account and password.

5 If you select **Simple**, the following options are enabled:

➤ In the **Authentication principal** box, type the authorized user name.

➤ In the **Authentication credentials** box, type the password.

6 Click the **Test Connection** button to test the URL of the LDAP server.

7 Choose one of the following options:

➤ To define additional LDAP settings, proceed to step 8.

➤ To close the LDAP Import Settings dialog box, click **Finish**.

8 To define additional LDAP settings, click **Next**. The following dialog box opens.
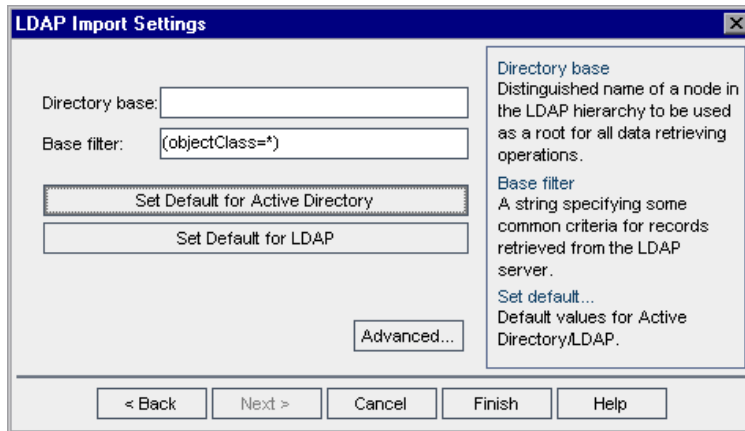
9 In the **Directory base** box, type the LDAP directory name.

10 In the **Base filter** box, define filter criteria.

11 To set the default values for the Active Directory, click the **Set Default for Active Directory** button.

12 To set the default values for LDAP, click the **Set Default for LDAP** button.

13 Choose one of the following options:

➤ To populate optional attributes in Quality Center for each user imported from an LDAP directory, proceed to step 14.

➤ To close the LDAP Import Settings dialog box, click **Finish**.

14 To populate optional attributes in Quality Center for each user imported from an LDAP directory, click **Advanced**. The following dialog box opens.

15 Define the corresponding LDAP field names. Note that **User Name** is a required field.

16 Click **Finish** to close the LDAP Import Settings dialog box.

Handling User Name Conflicts

When importing users from an LDAP directory to the Users list in Site Administration, you may encounter the following conflicts:

➤ **Same user:** A user with the same LDAP distinguished name already exists.

➤ **Same user name:** A user with the same user name already exists.

To resume the process of importing users, you can choose to ignore the user, rename a user name, or update user information.

To handle user name conflicts:

1 Import users (see step 8 in "Importing Users from LDAP"). If conflicts occur, the Handle Conflict dialog box opens.
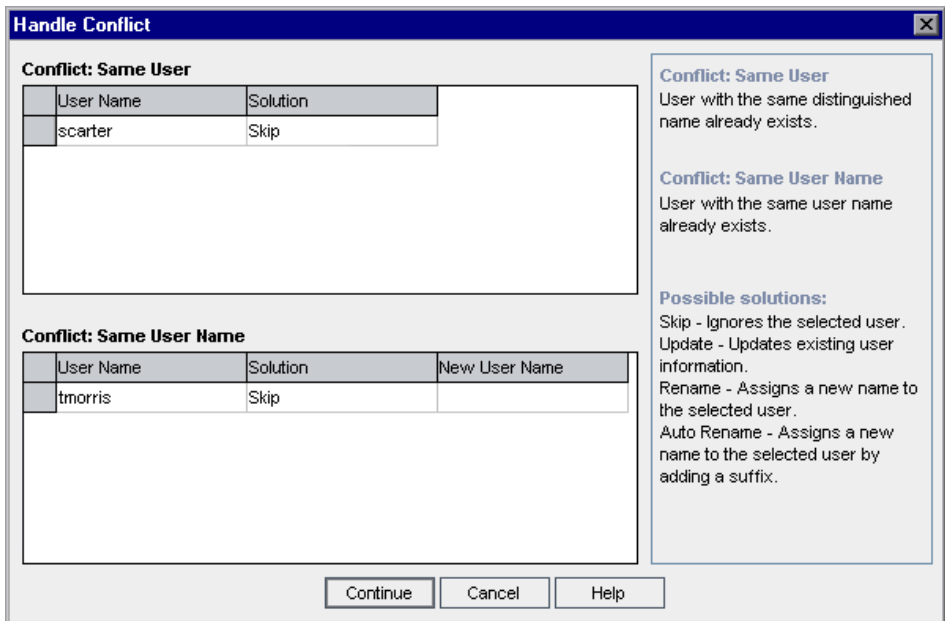
2 If the conflict is listed under **Conflict: Same User**, you can choose one of the following options to resume the process:

Option	Description
Update	Updates existing user information. Click the corresponding **Solution** box. Click the browse button and choose **Update**.
Skip	Does not import the selected user (default).

3 If the conflict is listed under **Conflict: Same User Name**, you can choose one of the following options to resume the process:

Option	Description
Rename	Assigns a new name to the selected user. Click the corresponding **Solution** box. Click the browse button and choose **Rename**. In the **New User Name** box, type the new name.
Auto Rename	Assigns a new name to the selected user by adding a suffix. Click the corresponding **Solution** box. Click the browse button and choose **Auto Rename**. The new name is displayed in the **New User Name** box.
Update	Updates existing user information. Click the corresponding **Solution** box. Click the browse button and choose **Update**.
Skip	Does not import the selected user (default).

4 Click **Continue**.

Updating User Details

After you add a user, you can update user details. For example, you may need to update a user's full name or contact details. You can also define Quality Center users as site administrators. For more information, see "Defining Site Administrators" on page 7.

To update user details:

1 In Site Administration, click the **Site Users** tab. In the right pane, click the **User Details** tab.

2 Select a user from the Users list.

To change the sort order of the Users list from ascending to descending, click the **User Name** or **Full Name** column heading. Click the column heading again to reverse the sort order.

You can search for a user in the Users list by typing the name of a user in the **Find** box, and clicking the **Find** button. The first user that matches the searched text is highlighted. Click the button again to search for other users containing the searched text.

3 Edit the user detail fields. Note that the **User Name** is read-only.

Note: If the user was imported from an LDAP directory to Site Administration, the **Domain Authentication** box displays the LDAP authentication properties of the imported user. If the user was not imported, the **Domain Authentication** box is not displayed. For more information, see "Importing Users from LDAP" on page 70.

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4 Click **Apply** to save your changes.

Changing Passwords

The site administrator can change or override a user's password.

Notes:

➤ You can only change passwords for users that are set to log in to Quality Center using their Quality Center passwords. If LDAP passwords are in use, this option is unavailable. For more information on LDAP authentication, see "Defining LDAP Settings for Importing Users" on page 72.

➤ Non-administrators can change their passwords using the **Change User Properties** link in the Project Customization window. For more information, refer to the *Mercury Quality Center User's Guide*.

To change a password:

1 In Site Administration, click the **Site Users** tab.

2 Select a user from the Users list.

3 Click the **Password** button. The Set User Password dialog box opens.

Set User Password	✕
New Password :	
Retype Password :	
OK Cancel Help	
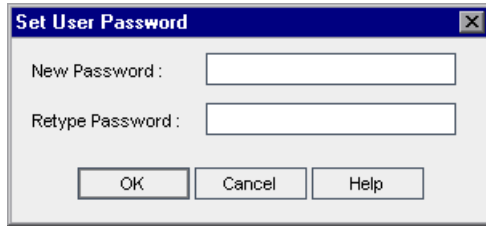
4 In the **New Password** box, type a new password (maximum length 20 characters).

5 In the **Retype Password** box, retype the user's new password.

6 Click **OK**.

Enabling LDAP Authentication for Users

You can allow users to log in to Quality Center using their LDAP passwords, instead of Quality Center passwords.

Note that working with LDAP through SSL requires that you perform additional steps. For more information, refer to the TestDirector for Quality Center Knowledge Base (http://support.mercury.com) and search for Problem ID 34793.

Note: When using LDAP authentication, users are authenticated against LDAP using the distinguished names (DN) that are stored in the Domain Authentication property in the Quality Center database. When the user attempts to log in, and the DN information in Quality Center is invalid, the user is unable to log in to Quality Center.

You can enhance the search so that when the DN information is invalid, Quality Center will also search on the LDAP server, using the LDAP import settings defined in Site Administration. If the user is found, the DN is updated in Quality Center, and an automatic login attempt is performed.

To set this extended search, define a comma-separated list for the **LDAP_SEARCH_USER_CRITERIA** Site Configuration parameter. The possible values are **username**, **email**, **fullname**, **phone**, **description**. The order of the properties defines their priority if multiple results are found.

For example, if the parameter is set to username and email, and two users are found with the same user name on the LDAP server, their e-mail addresses are checked. If more than one user is found answering the set properties, an error message is returned. If the search for the user succeeds, the user is logged in to Quality Center.

For more information, see "Setting Quality Center Configuration Parameters" on page 107.

To enable LDAP authentication for users:

1 In Site Administration, click the **Site Users** tab.

2 Click the **User Settings** button and choose **Authentication Settings**. The Authentication Settings dialog box opens.
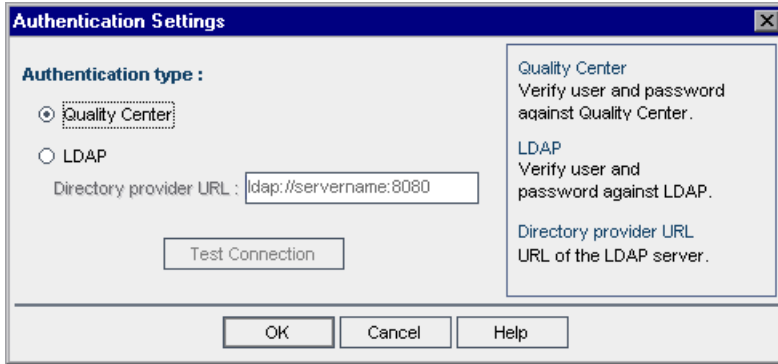
3 Under **Authentication type**, select **LDAP** to set the authentication type as LDAP for all users.

4 In the **Directory provider URL** box, type the URL of the LDAP server (ldap://<server name>:<port number>).

5 Click the **Test Connection** button to test the URL of the LDAP server.

6 Click **OK**.

Assigning Projects to Users

As a Quality Center site administrator, you can control user access to Quality Center projects by defining the projects to which a user can log on. When a user is no longer working on a project, you should remove the user from the User Projects list.

Note that when you add a user to a project, the user is automatically assigned to the project with Viewer privileges. For more information on user groups and group privileges, see Chapter 9, "Managing Users in a Project," and Chapter 10, "Managing User Groups and Permissions."

Note: You can assign users to projects from the Site Projects tab. For more information, see "Assigning Users to Projects" on page 35.

To assign projects to a user:

1 In Site Administration, click the **Site Users** tab. In the right pane, select the **User Projects** tab. The Projects list for the selected user is displayed.

Site Projects	Site Users	Site Connections	Licenses	Servers	DB Servers	Site Configuration	Site Analysis

User Name △	Full Name
alex_qc	Alex Smith
alice_qc	Alice Jones
cecil_qc	Cecil Davis
james_qc	James Johnson
kelly_qc	Kelly White
michael_qc	Michael Brown
peter_qc	Peter Adams
robert_qc	Robert Phillips
shelly_qc	Shelly Green
tim_qc	Tim Clark

alex_qc

User Details   User Projects

Select Projects   Remove   Find   ☐ Group By Domain

Domain	Project △
DEFAULT	QualityCenter_Demo
DEFAULT	QualityCenter_Demo7
DEFAULT	QualityCenter_Demo3
DEFAULT	QualityCenter_Demo6

Total Users : 10

Total Projects : 4

You can click the **Domain** column to change the sort order from ascending to descending domain names. You can also click the **Project** column to sort according to project instead of domain name.

2 In the Users list in the left pane, select a user. You can search for a user by typing the name of a user in the **Find** box, and clicking the **Find** button.

The selected user's projects are displayed in the User Projects list.

To group user projects by domain, select **Group By Domain**. Clear the check box to remove the group by settings.

Select Projects

3 In the User Projects tab, click the **Select Projects** button. The Quality Center Projects list is displayed in a new pane to the right of the User Projects tab.

Site Projects	Site Users	Site Connections	Licenses	Servers	DB Servers	Site Configuration	Site Analysis

Password

User Name △	Full Name
alex_qc	Alex Smith
alice_qc	Alice Jones
cecil_qc	Cecil Davis
james_qc	James Johnson
kelly_qc	Kelly White
michael_qc	Michael Brown
peter_qc	Peter Adams
robert_qc	Robert Phillips
shelly_qc	Shelly Green
tim_qc	Tim Clark

Total Users : 10

alex_qc

User Details   User Projects

Select Projects   Remove   Find   ⌄

Clear All   ✕

Domain	Project △
DEFAULT	QualityCenter_Demo
DEFAULT	QualityCenter_Demo7
DEFAULT	QualityCenter_Demo3
DEFAULT	QualityCenter_Demo6

⊞ DEFAULT
⊞ DEMO3
⊞ NEW_DOMAIN

Total Projects : 4

4 To select projects from the Projects list, expand the directory, and select the projects that you want to assign to the user.

To clear all selected projects, click **Clear All**.

5 Click the **Add current user to the selected projects** button. The selected projects are added to the User Projects list.

6 To remove a project from the User Projects list, select the project and click the **Remove** button. Click **OK** to confirm. The project is removed from the User Projects list. Note that this does not delete the project from the server.

Remove

7 To refresh the User Projects list, click the **Refresh Users List** button.

Exporting User Data

You can export the user name and full name of all site users from the Users list to a text file.

To export user data:

1 In Site Administration, click the **Site Users** tab.

2 Click the **Export To File** button. The Export Data To File dialog box opens.

3 Select the directory where you want to save the parameters, and enter a name for the file in the **File name** box.

4 Click **Save** to export the data to a text file.

Deleting Users

You can delete a user from the Users list.

To delete a user:

1 In Site Administration, click the **Site Users** tab.

2 Select a user from the Users list.

3 Click the **Delete User** button.

4 Click **Yes** to confirm.

5

Managing User Connections and Licenses

In Site Administration, you can monitor user connections and modify license information.

This chapter describes:

➤ About Managing User Connections and Licenses

➤ Monitoring User Connections

➤ Managing Quality Center Licenses

About Managing User Connections and Licenses

You use the **Site Connections** tab in Site Administration to monitor and manage the users connected to your Quality Center projects. For more information, see "Monitoring User Connections" on page 88.

You use the **Licenses** tab in Site Administration to view Quality Center license information and to modify the license key, if needed. For more information, see "Managing Quality Center Licenses" on page 91.

Note: If you are working with the Quality Center Starter Edition, only five users can connect concurrently to each Quality Center server.

Monitoring User Connections

You can monitor the users currently connected to a Quality Center server. For each user, you can view the domain and project being used, the user's machine name, the time the user first logged in to the project, and the time the most recent action was performed. You can also view the client type connection to the Quality Center server.

You can also view the licenses that are currently being used by each user. The *Mercury Quality Center license* 🗊 indicates that the user can access all modules in a specific project. The *Defects Module license* 🗊 indicates that the user can access only the Defects module.
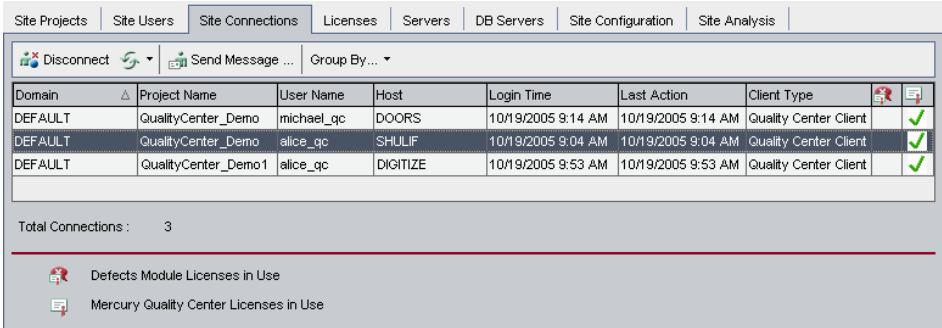
You can send messages to users connected to your Quality Center projects. You can also disconnect users from projects.

Note that you can modify access to a Quality Center project using the **Customize Module Access** link. For more information, see "Customizing Module Access for User Groups" on page 163.

Note:

➤ To view the total number of licenses that are in use for each Quality Center module, click the **Licenses** tab. For more information, see "Managing Quality Center Licenses" on page 91.

➤ To view and analyze the number of licensed Quality Center users connected to your projects at specific points over a period of time, click the **Site Analysis** tab. For more information, see "Monitoring Site Usage" on page 120.

To monitor user connections:

1 In Site Administration, click the **Site Connections** tab.

| Site Projects | Site Users | Site Connections | Licenses | Servers | DB Servers | Site Configuration | Site Analysis |

Disconnect | Send Message ... | Group By... ▼

Domain △	Project Name	User Name	Host	Login Time	Last Action	Client Type	🔒	📄
DEFAULT	QualityCenter_Demo	michael_qc	DOORS	10/19/2005 9:14 AM	10/19/2005 9:14 AM	Quality Center Client		✓
DEFAULT	QualityCenter_Demo	alice_qc	SHULIF	10/19/2005 9:04 AM	10/19/2005 9:04 AM	Quality Center Client		✓
DEFAULT	QualityCenter_Demo1	alice_qc	DIGITIZE	10/19/2005 9:53 AM	10/19/2005 9:53 AM	Quality Center Client		✓

Total Connections :   3

🔒   Defects Module Licenses in Use

📄   Mercury Quality Center Licenses in Use

You can click any column heading to change the sort order of the column from ascending to descending.

2 To refresh the Connections list, click the **Refresh Connections List** button.

To instruct Quality Center to automatically refresh the Connections list, click the **Refresh Connections List** arrow and choose **Automatic Refresh**. By default, the Connections list is automatically refreshed every 60 seconds. To change the automatic refresh rate, click the **Refresh Connections List** arrow and choose **Set Refresh Rate**. In the Set Refresh Rate dialog box, specify a new refresh rate in seconds.
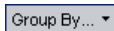
3 You can group connected users by clicking the **Group By** arrow, and choosing a Group By option. To group connected users by project, choose **Group By Project**. To group connected users by user, choose **Group By User**. To clear the Group By settings, click the **Group By** arrow and choose **Clear Group By**.

4 You can send a message to a connected user or group of users by selecting the **Send Message** button. For more information on sending messages, see "Sending Messages to Connected Users" on page 90.
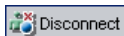
5 To disconnect a user or group of users from a project, select the row of the user or group and click the **Disconnect Users** button. Click **Yes** to confirm.

Sending Messages to Connected Users

You can send messages to users connected to your Quality Center projects. This enables you to routinely inform connected users about important maintenance activities. For example, disconnecting a project, or restarting a Quality Center server.

When you send a message, a pop-up window automatically opens on the user's machine displaying the message text. The message box is displayed until the user closes it or disconnects from Quality Center. For more information, refer to the *Mercury Quality Center User's Guide*.

To send messages to connected users:

1 In Site Administration, click the **Site Connections** tab.

2 Select the users to whom you want to send a message:

➤ To send a message to a user or group of users, select the row of the user or group.

➤ To send a message to multiple users, use **Ctrl** or **Shift** to highlight users to include.

3 Click the **Send Message** button. The Send Message dialog box opens.
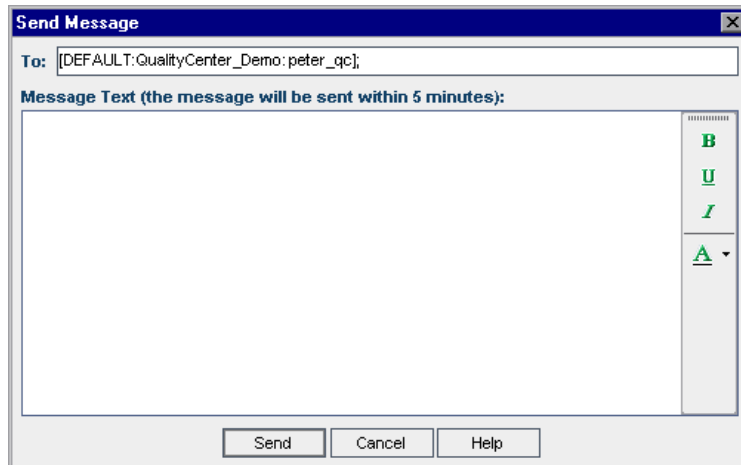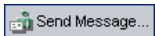
The **To** box displays the intended recipients of the message in the format [DOMAIN:Project Name:User Name].

4 In the **Message Text** box, type a message.

5 Click **Send**. Quality Center will send the message to user machines within five minutes.

Managing Quality Center Licenses

You can view the total number of licenses in use and the maximum number of licenses that you have for each Quality Center module. When other Mercury tools, such as QuickTest Professional, are connected to a Quality Center project, you can view the total number of licenses in use for these tools. You can also modify your license file.
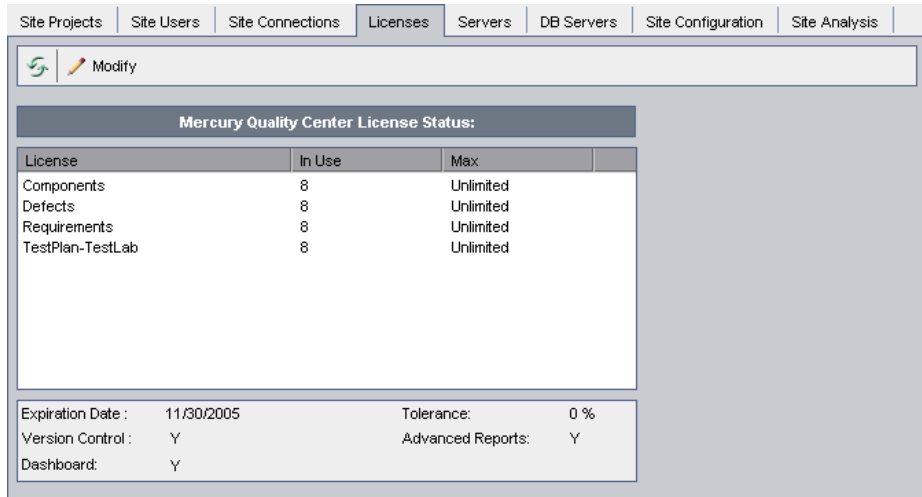
Note:

➤ To view the Quality Center licenses that are currently being used by each user, click the **Site Connections** tab. For more information, see "Monitoring User Connections" on page 88.

➤ To view and analyze the number of licensed Quality Center users connected to your projects at specific points over a period of time, click the **Site Analysis** tab. For more information, see "Monitoring Site Usage" on page 120.

To manage Quality Center licenses:

1 In Site Administration, click the **Licenses** tab.

| Site Projects | Site Users | Site Connections | Licenses | Servers | DB Servers | Site Configuration | Site Analysis |

🔄 ✏ Modify

Mercury Quality Center License Status:

License	In Use	Max	
Components	8	Unlimited	
Defects	8	Unlimited	
Requirements	8	Unlimited	
TestPlan-TestLab	8	Unlimited	

Expiration Date :	11/30/2005	Tolerance:	0 %
Version Control :	Y	Advanced Reports:	Y
Dashboard:	Y		

2 To refresh the license information displayed in the Licenses tab, click the **Refresh Licenses List** button.

3 To modify the license, click the **Modify License** button. The License Edit dialog box opens. To load the license file, click **Load License** and select the file. Alternatively, copy the license file and click **Paste License**. Click **OK**.

6

Configuring Servers and Parameters

You use Site Administration to configure Quality Center and Site Administration servers, define and modify database servers, configure the text search, set configuration parameters, and define the Quality Center mail protocol.

This chapter describes:

➤ About Configuring Servers and Parameters

➤ Configuring Server Information

➤ Defining New Database Servers

➤ Modifying Database Server Properties

➤ Configuring Text Search

➤ Setting Quality Center Configuration Parameters

➤ Setting the Quality Center Mail Protocol

About Configuring Servers and Parameters

You use the **Servers** tab to configure Quality Center and Site Administration server information. You can set the server log file and maximum number of database handles. For more information, see "Configuring Server Information" on page 94.

You use the **DB Servers** tab to define database servers that were not defined during installation. For each database server, you enter the database type, database name, default connection string, and administrator user and password. For more information, see "Defining New Database Servers" on page 97.

You also use the **DB Servers** tab to modify existing database server definitions. For more information, see "Modifying Database Server Properties" on page 100. In addition, you can configure the text search option for a specified database server that has the Oracle text search feature installed and configured. For more information, see "Configuring Text Search" on page 102.

Note: If you are working with the Quality Center Starter Edition, the DB Servers tab is not supported.

You use the **Site Configuration** tab to add and modify Quality Center configuration parameters. For more information, see "Setting Quality Center Configuration Parameters" on page 107. In addition, you can set the mail protocol to be used by all the server nodes in your Quality Center site. For more information, see "Setting the Quality Center Mail Protocol" on page 117.

Configuring Server Information

You can configure Quality Center and Site Administration server information. This includes:

➤ **Setting the Quality Center server log file**: The Quality Center server can write all Quality Center events—API functions that send requests to a Quality Center project—to a log file. The log file displays the date and time a function was executed. This enables Mercury Customer Support to trace where errors occur, if necessary. By default, the Quality Center server does not automatically record events.

➤ **Setting the maximum number of database connections**: The Quality Center server can open a number of connections for each project on a database server. You can set the maximum number of concurrent connections that can be opened by the Quality Center server for each project.

To configure Quality Center server information:

1 In Site Administration, click the **Servers** tab.
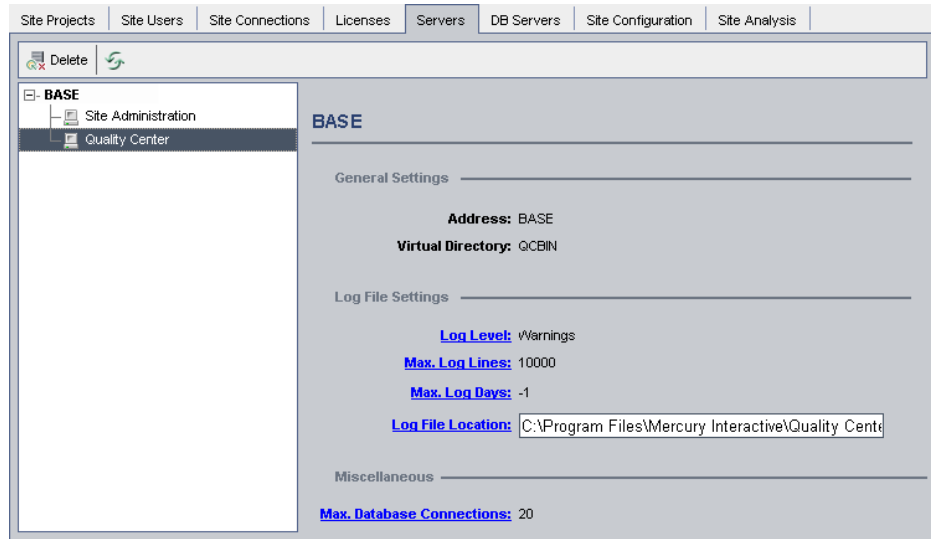
2 In the Server list, expand a server.

3 To set Site Administration server information, select **Site Administrator**. To set Quality Center server information, select **Quality Center**.

The **General Settings** area displays the server address and virtual directory name. For the Site Administration server, the virtual directory name is **sabin**. For the Quality Center server, the virtual directory name is **qcbin**.

4 Under **Log File Settings**, click the **Log Level** link to configure the type of log file you want the server to create. Select one of the following options in the Log Level dialog box:

➤ **None:** Does not create a log file.

➤ **Errors:** Records error events.

➤ **Warnings:** Records potentially harmful situations.

➤ **Flow:** Records informational messages that highlight the application flow.

➤ **Debug:** Records events that are most useful for debugging.

5 Click the **Max. Log Lines** link to open the Maximum Log Lines dialog box and configure the maximum number of lines that the Quality Center server can write to the log file. Quality Center creates a new log file after the log file reaches the maximum number of lines. The default value is 10,000.

6 Click the **Max. Log Days** link to open the Maximum Log Days dialog box and configure the maximum number of days that the Quality Center server keeps the log file. Quality Center automatically deletes the log files once the maximum number of days has been reached. The default value is **Unlimited**, which is displayed as **-1**.

7 Click the **Log File Location** link to change the directory path of the log file. In the Log File Location dialog box, type the new location for the log file.

8 If you are setting the Quality Center server information, you can also set the maximum number of concurrent connections that can be opened by the Quality Center server for each project. Click the **Max. Database Connections** link to open the Maximum Database Connections dialog box and set the maximum number of concurrent connections.

9 To delete a Quality Center server from the Server list, select it and click the **Delete QC Server** button. Click **Yes** to confirm.

10 Click the **Refresh QC Servers List** button to refresh the servers list.

Defining New Database Servers

You can define additional database servers that were not defined during the installation process.

Notes:

➤ For information on Oracle or Microsoft SQL permissions required by Quality Center, refer to the TestDirector for Quality Center Knowledge Base (http://support.mercury.com). For Oracle permissions, search for Problem ID 32903. For Microsoft SQL permissions, search for Problem ID 32905.

➤ If you are working with the Quality Center Starter Edition, the DB Servers tab is not supported.

To define a new database server:

1 In Site Administration, click the **DB Servers** tab.

2 Click the **New Database Server** button. The Create Database Server dialog box opens.

3 Under **Database Type**, select the type of database server you want to define:

➤ **MS-SQL (SQL Auth.):** Uses SQL authentication.

➤ **MS-SQL (Win Auth.):** Uses Microsoft Windows authentication.

➤ **Oracle**

4 Under **Database Values**, in the **Database Name** box, type the database name.

5 In the **DB Admin User** box, type the login name of the database administrator.

> ➤ For an Oracle database type, the default administrator user account enabling you to create Quality Center projects is **system**.

> ➤ For an MS-SQL (SQL Auth.) database type, the default administrator user account enabling you to create Quality Center projects is **sa**.

> ➤ For an MS-SQL (Win Auth.) database type, the **DB Admin User** box is unavailable. The login name of the database administrator is the Windows user that is set to run Quality Center as a service.

6 In the **DB Admin Password** box, type the password of the database administrator. Note that this field is unavailable if you selected the **MS-SQL (Win Auth.)** database type.

7 Under **Default Connection String**, you can edit the default connection string parameters or the connection string, as follows:

> ➤ To edit the default connection string parameters, choose **Connection String Parameters** and define the following parameters:

Parameter	Description
Server Host	The server name.
Port	The port number of the database server.
SID	The service ID for an Oracle database server.

> ➤ To edit the connection string, choose **Connection String** and edit the connection string.

8 To check whether you can connect to the database server, click the **Ping Database Server** button. The DB admin user and password you entered are displayed in the Ping Database Server dialog box. Click **OK**.

9 Click **OK** to close the Create Database Server dialog box. The new database server you defined appears in the Database Servers list.

10 Click the **Refresh Database Servers List** button to refresh the database servers list.

Modifying Database Server Properties

You can modify the database server properties.

Note: If you are working with the Quality Center Starter Edition, the DB Servers tab is not supported.

To modify database server properties:

1 In Site Administration, click the **DB Servers** tab.

2 Select a database server in the Database Servers list.
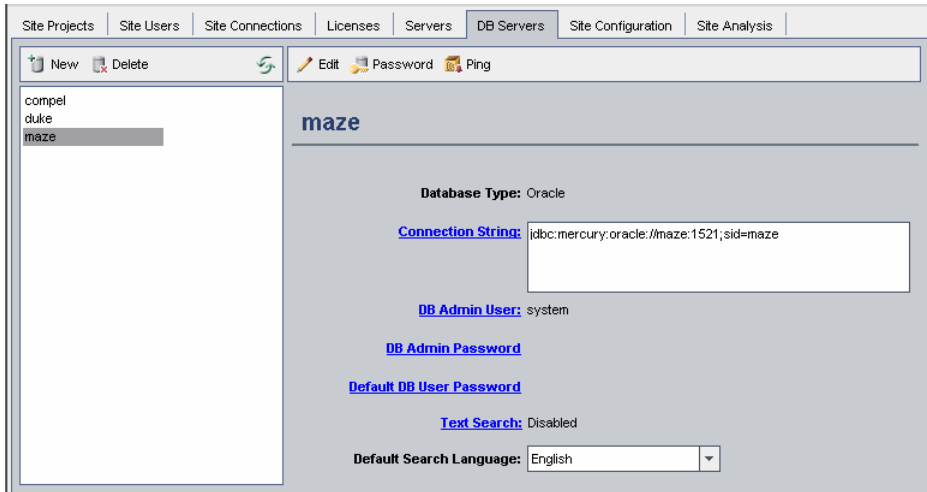
3 To modify the connection string, click the **Edit Connection String** button, or click the **Connection String** link. Edit the connection string in the Connection String Editor and click **OK**. For more information on connection strings, see "Defining New Database Servers" on page 97.

4 To modify the database administrator's login name, click the **DB Admin User** link. In the Default Admin User dialog box, type the new login name and click **OK**.

For more information on defining a new login name for a database administrator, see "Defining New Database Servers" (step 5) on page 99.

Password

5 To modify the database administrator's password, click the **Password** button, or click the **DB Admin Password** link. In the Set Database Admin Password dialog box, type the new password and then retype it. Click **OK**.

6 If you selected an MS-SQL server, click the **QC User Password** link to modify the default password for the user QC. This is the user that creates projects in Quality Center. In the Change Default QC User Password dialog box, type the new password and retype it. Click **OK**.

Note: If you have existing Quality Center projects on an MS-SQL server, after you change the Quality Center user password, you must also update the password for each project.

---

7 If you selected an Oracle server, click the **Default DB User Password** link to modify the default user password. In the Change Default Database User Password dialog box, type the new password and retype it. Click **OK**.

Note: Projects and users are identical on an Oracle database server. If you want each project or user to have its own password, you must define a new database server, with its own unique database name and user password, for each project you create.

---

8 To enable text search capabilities in the Requirements, Test Plan or Defects modules, click the **Text Search** link. For more information, see "Enabling Text Search for the Database Server" on page 103.

9 If the text search is enabled, you can set the default text search language for the database server in the **Default Search Language** list. For more information, see "Enabling Text Search for the Database Server" on page 103.

Ping

10 To check whether you can connect to the database server, click the **Ping Database Server** button. The DB admin user and password you entered are displayed in the Ping Database Server dialog box. Click **OK**.

11 To delete a database server from the Database Servers list, select it and click the **Delete Database Server** button. Click **Yes** to confirm.

12 Click the **Refresh Database Servers List** button to refresh the database servers list.

Configuring Text Search

Text search allows users to enter keywords and search specific project fields in the Requirements, Test Plan and Defects modules. For information on working with the text search feature, refer to the *Mercury Quality Center User's Guide*.

To configure text search, perform the following steps:

➤ In Site Administration, enable text search and define the default search language for a specified database server in the DB Servers tab. For more information, see "Enabling Text Search for the Database Server" on page 103.

➤ To specify a different search language for a specific project, change the search language from the Site Projects tab. For more information, see "Selecting a Text Search Language for a Project" on page 104.

➤ For a specific project, define the project fields to be included in the search from Project Customization. For more information, see "Defining Searchable Fields" on page 105.

Note: The **Text Search** link is available only if you install and configure the Oracle text searching feature. The text search feature is not supported in Microsoft SQL 2000. For more information, refer to the TestDirector for Quality Center Knowledge Base (http://support.mercury.com) and search for Problem ID 43393.

Enabling Text Search for the Database Server

You can enable text search for a specified database server that has the text search feature installed and configured. You can enable text search on a database server before or after you add any projects to your Projects list.

When you enable text search on a database server before you add projects, the projects that you add afterwards are text search enabled. When you enable text search on a database server after you have added projects, you must manually enable text search for each existing project.

After you have enabled the text search for a specified database server, you set the default search language for the database server. You can change the default search language for a specific project from the Site Projects tab. For more information, see "Selecting a Text Search Language for a Project" on page 104.

To enable text search on a database server before adding projects:

1 In Site Administration, click the **DB Servers** tab.

2 In the Database Servers list, select a database server.

3 Click the **Text Search** link and click **Yes** to confirm. Type the password for the **CTXSYS** user in the Set CTXSYS Password dialog box and click **OK**.

The **Text Search** value changes from **Disabled** to **Enabled**. Note that you cannot disable it.

4 In the **Default Search Language** list, set the default text search language for the database server.

To enable text search on a database server after adding projects:

1 In Site Administration, click the **DB Servers** tab.

2 In the Database Servers list, select a database server.

3 Click the **Text Search** link and click **Yes** to confirm. Type the password for the **CTXSYS** user in the Set CTXSYS Password dialog box and click **OK**.

The **Text Search** value changes from **Disabled** to **Enabled**. Note that you cannot disable it.

4 In the **Default Search Language** list, set the default text search language for the database server.

5 Click the **Site Projects** tab.

6 For each project for which you want to enable text search, click the
Enable/Rebuild Text Search button. Click **Yes** to confirm.

Selecting a Text Search Language for a Project

For each project, you can specify a search language other than the default
search language you set for the database server. For more information on
enabling the text search and setting the default search language, see
"Enabling Text Search for the Database Server" on page 103.

Note: Search languages are not available for a project created on a database
server that does not have the text search feature enabled.

To select a search language for a project:

1 In Site Administration, click the **Site Projects** tab.

2 In the Projects list, select a project. In the right pane, click the **Project
Details** tab.

3 In the **Search Language** field, select a language for the project. For more
information on updating project details in the Project Details tab, see
"Updating Project Details" on page 31.

Defining Searchable Fields

For each project, you must define the fields to be included in the search. The searchable option is only available in the Requirement, Test, Test Step (for design steps only), and Defect entities. Note that only user-defined fields with field type **Memo** or **String**, or the following system fields are available as searchable fields:

Entity	Searchable Fields
Requirement	Creation Time Description Name
Test	Description Path Template Test Name
Test Step (Design steps only)	Description Expected Step Name
Defect	Comments Description Reproducible Summary

To define a searchable field:

1 In the Project Customization window, click the **Customize Project Entities** link. The Customize Project Entities page opens. For more information on customizing project entities, see "Customizing Project Entities" on page 166.

2 Under **Project Entities**, expand an entity, and select a system or user-defined field that can be made searchable.
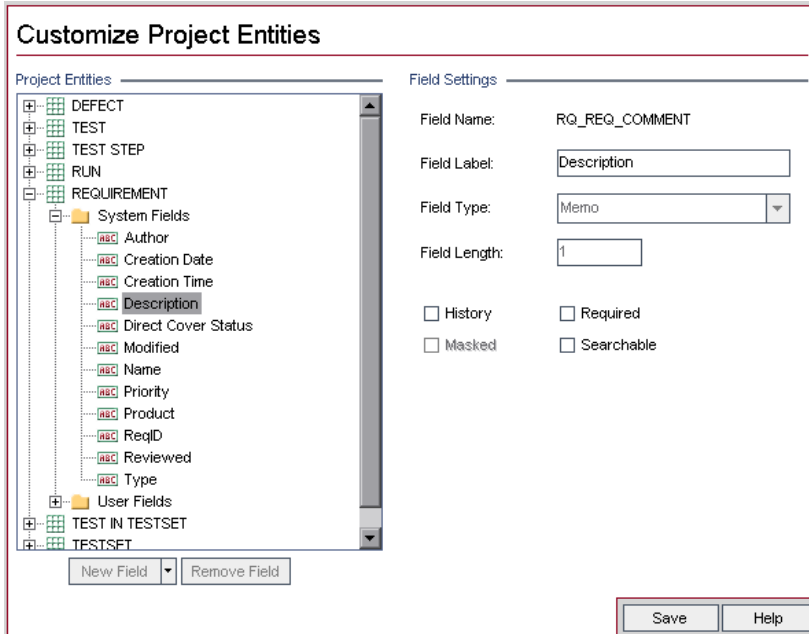
3 Select the **Searchable** check box.

4 Click **Save** to save your changes to the Customize Project Entities page.

Setting Quality Center Configuration Parameters

You use the **Site Configuration** tab to modify existing Quality Center configuration parameters and add new ones.

You can modify the following default Quality Center configuration parameters:

Parameter	Description
ACCESS_WEB_ DOCUMENTATION	If this parameter is set to "N" (the default), Quality Center uses the locally installed Documentation Library.
	If this parameter is set to "Y", Quality Center connects to the Documentation Library via the Web, from Mercury servers. The Web-based documentation is updated on an ongoing basis.
ADD_NEW_USERS_FROM _PROJECT (formerly **CUSTOM_ENABLE_USER_ ADMIN**)	If this parameter is set to "N", you can add new Quality Center users from Site Administration (**Site Users** tab) only. If this parameter is set to "Y" (the default), new Quality Center users can also be added from Project Customization. In the Set Up Project Users page, click **Add User**. The Add User to Project dialog box opens. If this parameter is set to "Y", a **New** button is available for adding new Quality Center users. For more information, see "Adding a User to a Project" on page 134.
ATTACH_MAX_SIZE	The maximum size (in kilobytes) of an attachment that can be sent with e-mail from Quality Center. If the attachment size is greater than the specified value, the e-mail will be sent without the attachment. By default, the maximum e-mail attachment size is 3,000 KB.

Parameter	Description
AUTO_MAIL_WITH_ ATTACHMENT (formerly **SAQ_MAIL_ WITH_ATTACHMENT**)	If this parameter is set to "Y" (the default), defect e-mail is sent with attachments. This applies only if you select **Send defect e-mail messages automatically** in the **Site Projects** tab. For more information, see Chapter 12, "Configuring Automail". **Note:** The former parameter name is supported for purposes of backward compatibility.
AUTO_MAIL_WITH_ HISTORY (formerly **SAQ_MAIL_ WITH_HISTORY**)	If this parameter is set to "Y" (the default), defect e-mail is sent with the history. This applies only if you select **Send defect e-mail messages automatically** in the **Site Projects** tab. For more information, see Chapter 12, "Configuring Automail". **Note:** The former parameter name is supported for purposes of backward compatibility.
BASE_REPOSITORY_PATH	The base repository path. The Quality Center and Site Administration repositories are subfolders of this repository. If you change this parameter value, you must copy the repository to its new location and then restart all servers in the cluster.
CREATE_HTTP_SESSION	If this parameter is set to "Y", Quality Center creates an HTTP session. This is useful for session stickiness when load balancing Quality Center in a cluster. By default, this parameter is set to "N".
LDAP_SEARCH_USER_ CRITERIA	A comma-separated list of Quality Center user properties to be used as LDAP search criteria, if the Domain Authentication property does not contain the user's distinguished name (DN). The order of the properties defines their priority if multiple results are found. The following are the possible values: **username**, **email**, **fullname**, **phone**, **description**. For more information on LDAP, see "Enabling LDAP Authentication for Users" on page 81.

Parameter	Description
LICENSE_ARCHIVE_ PERIOD	The time interval in days during which license usage is archived. License usage information before this period is removed from the archive. By default, the value is set to **365** days. If you set the value to **-1**, the license archive period is unlimited.
LOCK_TIMEOUT	The maximum number of hours that Quality Center objects can remain locked. After this time, the lock is removed. By default, the value is set to **10** hours.
MAIL_FORMAT	The format Quality Center uses to send e-mail. By default, the format is set to "HTML". To instruct Quality Center to send e-mail as plain text, change the value to "Text". Quality Center uses e-mail to send defects, requirements, tests, and test set notifications to Quality Center users.
MAIL_INTERVAL	The time interval in minutes for sending defect e-mail according to your mail configuration settings. By default, the value is set to 10 minutes. Note that this applies only if you select **Send defect e-mail messages automatically** in the **Site Projects** tab. For more information, see Chapter 12, "Configuring Automail".
MAIL_MESSAGE_ CHARSET	The character set used by Quality Center to send e-mail to users. By default, the value is set to **UTF-8**.
SITE_ANALYSIS	If this parameter is set to "Y" (the default), you can track Quality Center license usage over time from the **Site Analysis** tab. If this parameter is set to "N", the Site Analysis tab is unavailable. For more information, see Chapter 7, "Analyzing Site Usage".

Parameter	Description
VC	If this parameter is set to "Y", version control is enabled. If you enable version control, you can create a version control database for any project.
	If it is set to "N" (the default), version control is disabled.
	Note: To work with version control, you must install a supported version control tool and the Mercury Quality Center Version Control Add-in on your Quality Center server. For more information on Mercury Quality Center add-ins, refer to the *Mercury Quality Center Installation Guide*.
WAIT_BEFORE_ DISCONNECT	The time interval in minutes that the Quality Center client can be inactive before it is disconnected from the Quality Center server. Disconnecting the client enables the license to be used by another Quality Center user. By default, the value is set to **600** minutes. The minimum value for this parameter is **15** minutes; Quality Center ignores values lower than this. If you set the value to **-1**, Quality Center will not disconnect, regardless of how long the client is inactive.

You can add the following Quality Center configuration parameters:

Parameter	Description
AUTO_MAIL_SUBJECT_ FORMAT (formerly **SAQFORMAT**)	This parameter enables you to customize the subject line of defect e-mail sent automatically to users. For example, you can define a subject line such as Defect no. 4321 has changed by providing the value Defect no. ?BG_BUG_ID has changed, where Defect no. and has changed are strings, and **BG_BUG_ID** is a Quality Center field name. To customize the subject line for a specific project, see "Customizing the Subject of Defect Mail" on page 183. **Note:** The former parameter name is supported for purposes of backward compatibility.
BACKWARD_SUPPORT_ ALL_DOMAINS_PROJECTS	This parameter enables the use of DomainsList and ProjectsList properties for the purposes of backward compatibility. If this parameter is set to "Y", then the DomainsList and ProjectsList properties are supported. If the parameter does not exist or is empty, the default value is "N", and these properties are not supported.
BACKWARD_SUPPORT_ SA_DEFAULT_USER	This parameter enables the use of the old connection method to Site Administration for the purposes of backward compatibility. To work with scripts that use the old connection method (where the site administrator only required a password to log in), a user should be defined, and this user's password will be used during login. The value of this parameter is a user name, whose password will be used. If the parameter does not exist or is empty, an empty string is used.

Parameter	Description
COPY_CHANGES_ USER_FIELDS (formerly **COPY_PASTE_ CHANGES_OWNER**)	This parameter enables you to specify that the user who copies a record is listed in the specified User List fields of the copy. For more information on fields that have User List as their Field Type, see "Customizing Project Entities" on page 166. The value of this parameter is a comma-separated list of User List fields. For example, set the value of the parameter to BG_DETECTED_BY. Assume defect 10 is detected by user Cecil_qc, and user Shelly_qc copies defect 10. Quality Center creates a copy of the defect with Shelly_qc as the user who detected the defect, not Cecil_qc.
LDAP_TIMEOUT (formerly **DIRECTORY_TIME_LIMIT_ CONSTRAINT**)	The length of time, in seconds, that Quality Center waits before canceling an LDAP operation. The time limit on LDAP operations prevents a situation where LDAP encounters a problem and causes Quality Center to wait indefinitely. The default timeout value is 10 minutes (600 seconds). For more information about using LDAP, see Chapter 4, "Managing Quality Center Users".
DISABLE_COMMAND_ INTERFACE	If this parameter is set to "Y" (the default), only users belonging to the TDAdmin group can use the OTA **Command** object. If it is set to "N", any user can use it. For more information, refer to the *Mercury Quality Center Open Test Architecture API Reference*.

Parameter	Description
DISABLE_EXTENDED_ STORAGE	This parameter controls user access to the OTA **ExtendedStorage** object. This is a security feature that can be used to limit access to the file system of the project.
	If this parameter is set to "Y" (the default), the ExtendedStorage object cannot be accessed from TDConnection. Users can access the object from a specific entity for read-only, but no changes can be made.
	If it is set to "N", the ExtendedStorage object can be accessed by all users, from a specific entity or from TDConnection.
	For more information about the ExtendedStorage object, refer to the *Mercury Quality Center Open Test Architecture API Reference*.
HEBREW	If this parameter is set to "Y", it indicates that the Quality Center server is Hebrew-enabled. On a per project basis, you can then enable Hebrew by selecting **Allow Hebrew language** in the **Site Projects** tab. When users work in a Hebrew-enabled project, they can toggle between English and Hebrew by choosing **Tools** > **Reading Order** > **Right to Left**.
LR DIRECTFILEACCESS	This parameter applies if you are integrating with Mercury LoadRunner. If set to "Y", it enables the direct accessing of scripts located within the same LAN as your Quality Center client/server.
	Note: In a UNIX or Linux environment, you must also set the UNIX_SERVER parameter.
MIGRATION_MAX_ NUMBER_OF_PROJECTS	The maximum number of projects that can be migrated from TestDirector to Quality Center at one time. By default, you can migrate up to 50 projects at a time.
	For more information on migration, see "Migrating TestDirector Projects to Quality Center" on page 54.

Parameter	Description
NLS_SEARCH_LOCALE	The language used by the **Find Similar Defects** command to tokenize the defect summary. This parameter is needed only if the default locale on the server does not match the language in which the defect summary is written, in terms of whether spaces are used to separate words.
	The value should be a string value that matches a language code listed in ISO 639 (http://www.w3.org/WAI/ER/IG/ert/iso639.htm).
	For example, if the default locale is English and the text is in Japanese, which does not use spaces to separate words, set NLS_SEARCH_LOCALE=ja.
	If this parameter is not defined or is invalid, the default locale of the server is used.
REPLACE_TITLE	This parameter enables you to change the names of Quality Center modules across all your projects.
	Rename one or more modules by entering the following parameter value: <original title1 [singular]>;<new title1 [singular]>; <original title1 [plural]>;<new title1 [plural]>; <original title2 [singular]>;<new title2 [singular]>;...
	For example, if you want to change the name of the Defects module to **Bugs**, and the Requirements module to **Goals**, enter the following: Defect;Bug;Defects;Bugs;Requirement;Goal; Requirements;Goals
	Note: To rename the Defects module for a specific project only, see "Renaming the Defects Module for a Project" on page 48.
REQUIREMENT_ REVIEWED_FIELD_ AUTOMATIC_UPDATE	If this parameter is set to "Y" (the default), then any change to a requirement field automatically sets the **Reviewed (RQ_REQ_REVIEWED)** field to "Not Reviewed".
	If it is set to "N", then a change to a requirement field does not affect the value of the Reviewed field.

Parameter	Description
SECURED_QC_URL	When Quality Center generates e-mail, it includes a link to Quality Center in the e-mail.
	If this parameter is set to "Y", the Quality Center URL uses an SSL connection (starting with https:).
	If it is set to "N" (the default), SSL is not used.
UNIX_SERVER	If this parameter is set to "Y", it enables direct file access from a testing tool on a Windows machine to a UNIX based repository.
	You must then add a new parameter for each directory on the UNIX server machine you want to be able to access externally and specify the corresponding Windows path, as follows:
	• **Parameter name** is FOLDER_MAPPING_n where n is an identifying number. For example, FOLDER_MAPPING_1
	• **Parameter value** is in the format *UNIXpath->Windowspath* For example, /opt/Mercury/repository/qc/->\\netapp\qc\repository\
	Note: This parameter applies to the following testing tools: WinRunner and LoadRunner.
WR DIRECTFILEACCESS	This parameter applies if you are integrating with Mercury WinRunner. If set to "Y", it enables the direct accessing of scripts located within the same LAN as your Quality Center client/server.
	Note: In a UNIX or Linux environment, you must also set the UNIX_SERVER parameter.

To set Quality Center parameters:

1 In Site Administration, click the **Site Configuration** tab.

Site Projects	Site Users	Site Connections	Licenses	Servers	DB Servers	Site Configuration	Site Analysis

New · Delete · Edit · Export · Settings ▾

Parameter	Value
ACCESS_WEB_DOCUMENTATION	n
ADD_NEW_USERS_FROM_PROJECT	Y
ATTACH_MAX_SIZE	3000
AUTO_MAIL_WITH_ATTACHMENT	Y
AUTO_MAIL_WITH_HISTORY	Y
BACKWARD_SUPPORT_ALL_DOMA	Y
BASE_REPOSITORY_PATH	C:\Program Files\Mercury Interactive\Quality Center\repository
CREATE_FS_REPOSITORY	Y
CREATE_HTTP_SESSION	N
DISABLE_EXTENDED_STORAGE	N
LDAP_SEARCH_USER_CRITERIA	username,email,fullname,phone
LICENSE_ARCHIVE_PERIOD	365
LOCK_TIMEOUT	10
MAIL_FORMAT	HTML

Parameter Description:

If this parameter is set to "N" (the default), Quality Center uses the locally installed Documentation Library.
If this parameter is set to "Y", Quality Center connects to the Documentation Library via the Web, from Mercury servers. The Web-based documentation is updated on an ongoing basis.

2 To add a new parameter to the list, click the **New Parameter** button. The New Parameter dialog box opens. Type a name, value, and description for the parameter you want to add. Click **OK**.

3 To delete a parameter from the list, select it and click the **Delete Parameter** button. Click **Yes** to confirm.

4 To edit a parameter, select it from the list and click the **Edit Parameter** button. The Edit Parameter dialog box opens. Type a new value and value description, and click **OK**.

5 To export parameters from the site configuration grid to a text file, click the **Export** button. The Export Data To File dialog box opens. Select the directory where you want to save the parameters, and enter a name for the file in the **File name** box. Click **Save**.

6 You can click the **Refresh Parameters List** button to refresh the parameter list.

7 Users must reconnect to any open projects to work with the new settings.

Setting the Quality Center Mail Protocol

Quality Center uses e-mail to send project information to users. You can select the mail service to be used by all the server nodes in your Quality Center site. Quality Center supports the SMTP mail protocols.

For more information on setting the Quality Center mail protocol, refer to the *Mercury Quality Center Installation Guide*.

To set the Quality Center mail protocol:

1 In Site Administration, click the **Site Configuration** tab.

Settings ▾

2 Click the **Settings** button and choose **Set Mail Protocol**. The Set Mail Protocol dialog box opens.
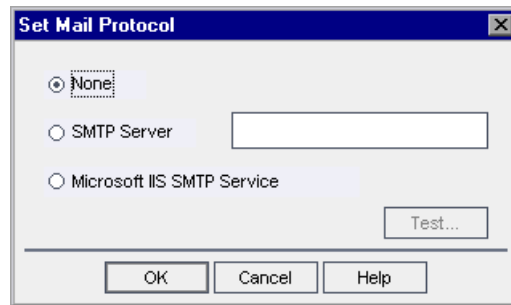
3 Select one of the following options:

> ➤ **None:** Quality Center does not send e-mail.

> ➤ **SMTP Server:** Quality Center sends e-mail from an SMTP server on the network. Type the address of an SMTP server available on your local area network.

> ➤ **Microsoft IIS SMTP Service:** Quality Center sends e-mail from the Quality Center server machines. This option is available if you installed Microsoft IIS SMTP Service on your Quality Center server machines during IIS installation.

4 Click **Test** to send a test e-mail to your mailbox. The Test Mail dialog box opens. Type your e-mail address and click **Send**.

5 Click **OK** to close the Set Mail Protocol dialog box.

7

Analyzing Site Usage

In Site Administration, you can track the number of licensed users that have connected to your Quality Center site at specific points over a period of time. You can also analyze Quality Center usage by filtering the number of licensed users by projects or users.

This chapter describes:

➤ About Analyzing Site Usage

➤ Monitoring Site Usage

➤ Filtering Site Usage

➤ Exporting Site Analysis Data to a File

➤ Customizing the Site Analysis Line Chart Graph

About Analyzing Site Usage

You use the **Site Analysis** tab in Site Administration to monitor license usage for each time interval displayed. You can specify the time interval displayed along the x-axis. You can also specify what information appears in the graph by filtering the graph content by projects or users.

For example, you may want to charge each department in your organization according to license usage. You can filter by projects in a specific department to view license usage for the department. You can also view license usage for a specific group of users by filtering according to selected users.

If the **Site Analysis** tab is not displayed, you can make it available by changing the **SITE_ANALYSIS** parameter in the **Site Configuration** tab. For more information, see "Setting Quality Center Configuration Parameters" on page 107.

Monitoring Site Usage

You can monitor the number of licensed users that have connected to a Quality Center site over a period of time. You can view site usage for the last seven days, the last five weeks, the last twelve months, or for all days that users were connected to a Quality Center server.

You can also monitor usage of different license types. Users with **Full Licenses** can access all modules in a specific project. Users with **Defect Licenses** can access only the Defects module. This data can be displayed in line graphs or data grids.

In addition, you can filter records by projects or users, refresh and clear filter settings, and save data to a file.

Note: You can monitor the users currently connected to a Quality Center server. For more information, see Chapter 5, "Managing User Connections and Licenses."

To monitor site usage:

1 In Site Administration, click the **Site Analysis** tab.
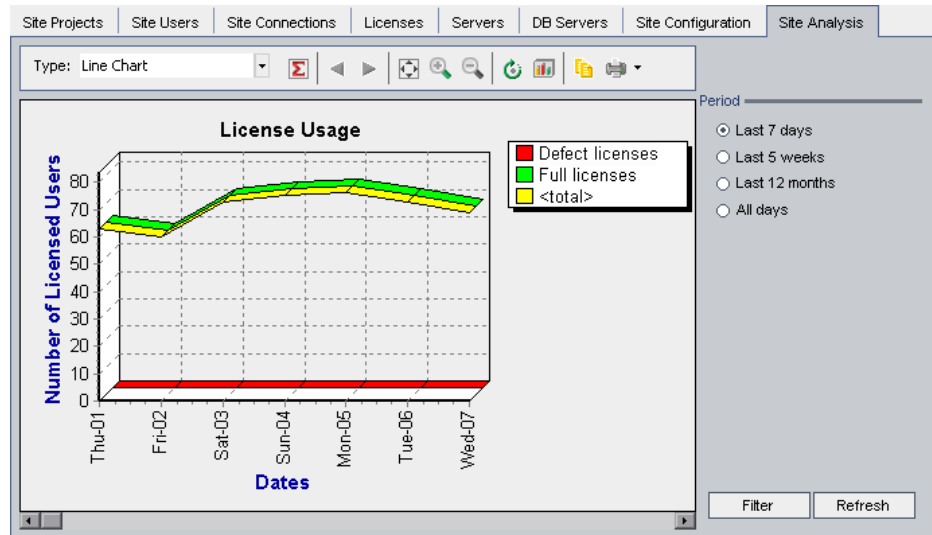
2 In the **Type** box, select a display type:

> ➤ **Line Chart:** Displays the data as a line graph.

> ➤ **Data Grid:** Displays the data as a grid.

3 In the right pane under **Period**, select the period of time you want the line graph or data grid to show.

4 Click the **Filter** button to open the Set Filter dialog box and filter the graph contents. For more information, see "Filtering Site Usage" on page 122.

5 To customize the appearance of a Line Chart graph, see "Customizing the Site Analysis Line Chart Graph" on page 124.

6 If you chose Data Grid, you can save the contents of a data grid as a text file, Microsoft Excel spreadsheet, Microsoft Word document, or HTML document. To save, click the **Save As** button. For more information, see "Exporting Site Analysis Data to a File" on page 123.

7 To refresh data in the graph, click the **Refresh** button.
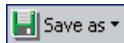
Filtering Site Usage

You can analyze the number of users that have connected to your Quality Center site at specific points over time by filtering by projects or users.

To filter site usage:

1 Click the **Filter** button. The Set Filter dialog box opens.
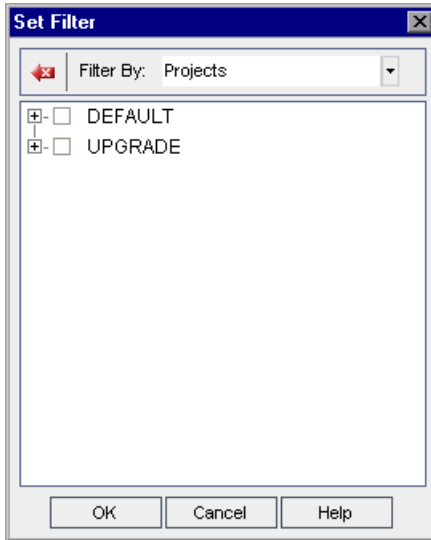
2 Under **Filter by**, select the category that you want to filter:

➤ **Projects:** Displays all the Quality Center domains and projects.

➤ **Users:** Displays all the Quality Center site users.

3 Click the items you want to include in the filter.

➤ For **Projects**, double-click the domain folder to display the domain's projects, and select the projects you want to include. To filter all projects in the domain, select the domain folder.

➤ For **Users**, select the users you want to include.

4 To clear the selected projects or users in a filter, click the **Clear** button.

5 Click **OK** to apply the filter and close the Set Filter dialog box. The new line chart or data grid is displayed.

Exporting Site Analysis Data to a File

You can export site analysis data in a Data Grid as a text file, Microsoft Excel spreadsheet, Microsoft Word document, HTML document, or XML document.

To export Site Analysis data to a file:

1 In Site Administration, click the **Site Analysis** tab.

2 In the **Type** field, select the **Data Grid** display type.

3 Select the graph period and filter.

4 Click **Save as**, and select one of the following formats:

   ➤ **Text Format:** Saves the data as a Text file.

   ➤ **Excel Sheet:** Saves the data as an Excel sheet.

   ➤ **Word Document:** Saves the data as a Word document.

   ➤ **HTML Document:** Saves the data as an HTML document.

5 In the **Save in** box, choose a location for the file.

6 In the **File name** box, type a name for the file.

The **Save as type** box is automatically filled according to the format you selected.

7 Click **Save**.

Customizing the Site Analysis Line Chart Graph

You can determine how information appears in the Line Chart graph using the line chart toolbar. The toolbar includes the following buttons:

Show Total Values: Toggles between displaying and hiding a total value in the graph.

Scroll to the Left: Scrolls the graph to the left. (This button is enabled when the Zoom In and Zoom Out buttons are in use.)

Scroll to the Right: Scrolls the graph to the right. (This button is enabled when the Zoom In and Zoom Out buttons are in use.)

Show All: Returns the graph to its normal size. (This button is enabled when the Zoom In and Zoom Out buttons are in use.)

Zoom In: Increases the magnification of the selected portion of the graph.

Zoom Out: Decreases the magnification of the selected portion of the graph.

Rotate Bottom Labels: Toggles between displaying the text on the x-axis vertically and horizontally.

Set 2D/3D Graph: Toggles the graph from two to three dimensions.

Copy Graph to Clipboard: Copies the graph to the Clipboard.

Print Graph: You can choose to print the graph in portrait or landscape view.

Part II

Project Customization

8

Project Customization at a Glance

As a Quality Center project administrator, you use Project Customization to control access to a project by defining the users who can access the project and by determining the types of tasks each user can perform. You can also customize a project to meet the specific requirements of your testing team. Non-project administrators can also use Project Customization, however, the customization functions available are limited depending on the user group to which they belong.

This chapter describes:

➤ Starting Project Customization

➤ Understanding the Project Customization Window

Starting Project Customization

You can customize your Quality Center projects using the Project Customization window.

Note: Users belonging to the Viewers group cannot view or change any settings in the Project Customization window.

To start project customization:

1 Open your Web browser and type your Quality Center URL
http://<Quality Center server name>[<:port number>]/qcbin. The Mercury
Quality Center Options window opens.

2 Click the **Quality Center** link.

The first time you run Quality Center, files are downloaded to your
workstation. Subsequently, Quality Center carries out a version check. If
there is a newer version on the server, updated files are downloaded to your
workstation.

Note: To download files to your computer, you must log in with
administrator privileges. This applies if you are running Quality Center for
the first time, upgrading to a newer version, or applying a service pack.

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

3 In the **User Name** box, type your user name.

If you type a user name that does not have administrator privileges for a particular project, you are restricted to the customization functions available for that user group. For more information, see "About Managing User Groups and Permissions" on page 140.

4 In the **Password** box, type your password.

After you log in to Quality Center, you can change your password from the Project Customization window. For more information, refer to the *Mercury Quality Center User's Guide*. In addition, site administrators can change their password from Site Administration. For more information, see "Changing Passwords" on page 79.

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.

`Authenticate` **6** Click **Authenticate**. Quality Center verifies your user name and password and determines which domains and projects you may access. If you specified automatic login, Quality Center opens.

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.

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

10 Choose **Tools** > **Customize** on the upper-right corner of the window. The Project Customization window opens and displays the customization functions available for the user group to which the user belongs. For more information, see "Understanding the Project Customization Window" on page 131.

`RETURN` **11** To exit the Project Customization window and return to your Quality Center project, click the **Return** button located on the upper-right corner of the window.

Understanding the Project Customization Window

As a Quality Center project administrator, you can customize a project to meet the specific requirements of your testing team in the Project Customization window.
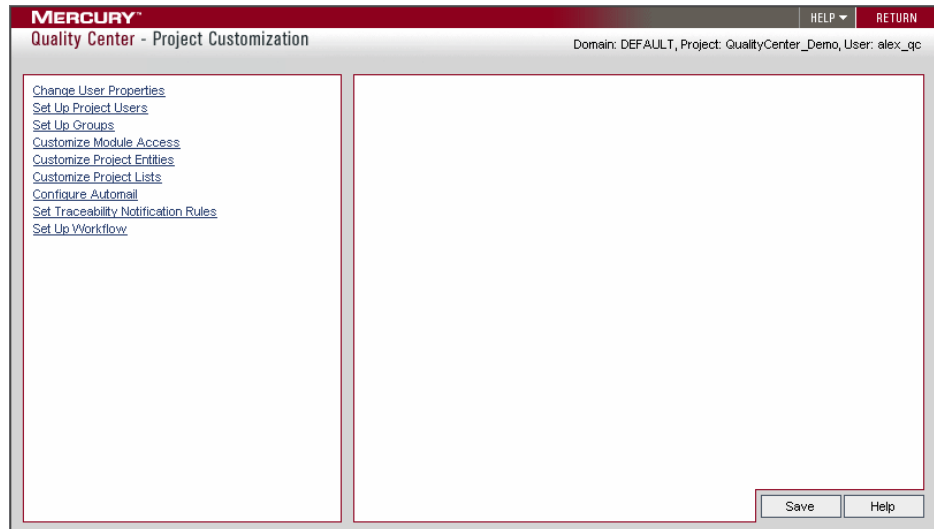
The Project Customization window contains the following links:

➤ **Change User Properties**: Non-project administrators can use this option to change their user properties and password. For more information, refer to the *Mercury Quality Center User's Guide*.

In Site Administration, a site administrator can override and change a user's properties and password from the **Site Users** tab. For more information, see "Updating User Details" on page 78, and "Changing Passwords" on page 79.

➤ **Set Up Project Users:** You can add and remove users from a Quality Center project. You can also assign users to user groups to restrict user access privileges. For more information, see Chapter 9, "Managing Users in a Project."

Note that you create Quality Center users and define user properties from Site Administration. For more information, see Chapter 4, "Managing Quality Center Users."

➤ **Set Up Groups:** You can assign privileges to user groups by specifying permission settings. This includes specifying transition rules and hiding data. For more information, see Chapter 10, "Managing User Groups and Permissions".

➤ **Customize Module Access:** You can control the modules that each user group can access. By preventing users from accessing unnecessary modules, you can better utilize your Quality Center licenses. For more information, see "Customizing Module Access for User Groups" on page 163.

➤ **Customize Project Entities:** You can customize your Quality Center project to suit your testing environment. A project can contain system fields and user-defined fields. System fields can be modified. User-defined fields can be added, modified, and deleted. For more information, see "Customizing Project Entities" on page 166.

➤ **Customize Project Lists:** You can add customized field lists to a project. A field list contains values that the user can enter in system or user-defined fields. For more information, see "Customizing Project Lists" on page 175.

➤ **Configure Automail:** You can set up automatic mail notification rules to inform users via e-mail about defect repair activity. For more information, see Chapter 12, "Configuring Automail".

➤ **Set Traceability Notification Rules:** You can activate traceability notification rules for your project. This instructs Quality Center to create alerts and send traceability notification e-mail when changes occur in the project. For more information, see Chapter 13, "Setting Traceability Notification Rules".

➤ **Set Up Workflow:** You can generate scripts to perform commonly needed customizations on the fields of the Defects module dialog boxes. For more information, see Chapter 14, "Generating Workflow Scripts".

In addition, you can write scripts to customize dialog boxes in any module, and to control the actions that users can perform. For more information, see Chapter 15, "Workflow Customization at a Glance".

9

Managing Users in a Project

As a Quality Center project administrator, you can control access to a project by defining the users who can log in to the project and by specifying the types of tasks each user may perform.

This chapter describes:

➤ About Managing Users in a Project

➤ Adding a User to a Project

➤ Assigning Users to a User Group

➤ Removing a User from a Project

About Managing Users in a Project

For each Quality Center project, you must select a list of valid users from the overall Quality Center users list. (The users list is created in Site Administration. For more information, see Chapter 4, "Managing Quality Center Users".)

You then need to assign each project user to a user group. Each group has access to certain Quality Center tasks.

Adding a User to a Project

You add new users to a Quality Center project by selecting them from the Quality Center users list created in Site Administration.

To add a user to a project:

1 In the Project Customization window, click the **Set Up Project Users** link. The Set Up Project Users page opens.

You can click the **User Name** column to change the sort order from ascending to descending user names. You can also click the **Full Name** column to sort according to full names instead of user names.

2 Click the **Add User** button. The Add User to Project dialog box opens.
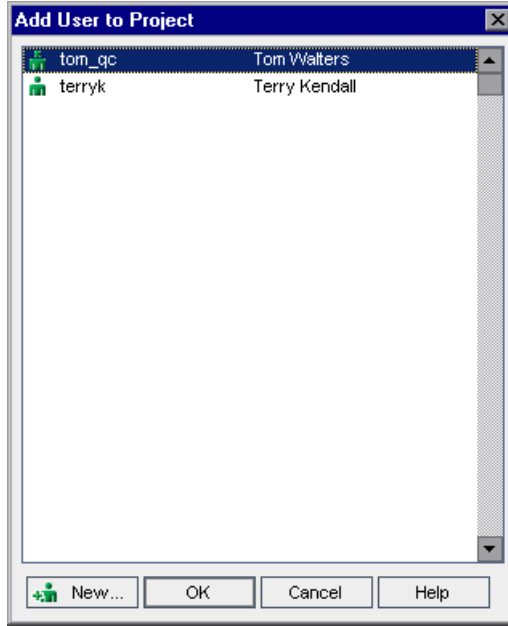
3 Click the **New** button to add new Quality Center users to the list of available users. Note that if this button is not available, you can enable it by setting the **ADD_NEW_USERS_FROM_PROJECT** parameter in Site Administration (**Site Configuration** tab). For more information, see "Setting Quality Center Configuration Parameters" on page 107.

4 Select a user name from the list and click **OK**.

The user is added to the Project Users list and the user details are displayed. User details are defined in Site Administration. For more information, see "Updating User Details" on page 78.

5 Click **Save** to save your changes to the Set Up Project Users page.

Assigning Users to a User Group

After you add a user to the project, you can assign the user to one or more user groups. You can assign a user to a default user group, or to a customized user group. For more information on customizing a user group, see Chapter 10, "Managing User Groups and Permissions". You can change the access privileges for existing users at any time by changing the user group to which they are assigned.

To assign a user to a user group:

1 In the Project Customization window, click the **Set Up Project Users** link. The Set Up Project Users page opens.

2 In the **Project Users** list, select the user you want to assign to a user group. The user properties are displayed (name, e-mail, phone, and description).

Note that the e-mail information is important as it enables a user to receive defects, tests, requirements, and test set notifications directly to their mailbox.

The user details are defined in Site Administration. For more information, see "Updating User Details" on page 78.

3 To assign the selected user to a user group, click a user group name in the **Not Member Of** list and click the left arrow button.

4 To remove the user from the currently selected user group, click a user group name in the **Member Of** list and click the right arrow button.

5 To move all the user groups from one list to the other, click the double arrow buttons.

6 Click **Save** to save your changes to the Set Up Project Users page.

Removing a User from a Project

To ensure the security of a project, you should remove any users who are no longer working on the project. Note that removing a user from a project does not delete the user from the Quality Center users list in Site Administration.
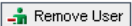
To remove a user from a project:

1 In the Project Customization window, click the **Set Up Project Users** link. The Set Up Project Users page opens.

2 In the **Project Users** list, select the user you want to remove and click the **Remove User** button.

3 Click **OK** to confirm. The user is removed from the Project Users list.

4 Click **Save** to save your changes to the Set Up Project Users page.

10

Managing User Groups and Permissions

You can control access to Quality Center projects and modules by defining the user groups that can enter them, and by determining the types of tasks each user group performs.

This chapter describes:

➤ About Managing User Groups and Permissions

➤ Adding User Groups

➤ Setting User Group Permissions

➤ Setting Transition Rules

➤ Hiding Data for a User Group

➤ Assigning Existing Sets of Permissions to User Groups

➤ Renaming User Groups

➤ Deleting User Groups

➤ Understanding the Permission Settings Tasks

➤ Customizing Module Access for User Groups

About Managing User Groups and Permissions

To enable each team member to do his/her job and protect a project from unauthorized access, Quality Center lets you assign each member to a specific user group. Quality Center includes predefined user groups with default privileges. Each group has access to certain Quality Center tasks.

User Group	Permissions
TDAdmin (Project Administrator)	Group members have full privileges in a Quality Center project and in Project Customization.
Project Manager	Group members have full privileges in the following Quality Center modules: Requirements, Test Plan, Test Lab, and Defects. In Project Customization, the group has privileges to change user properties and password, customize project lists, and set traceability notification rules.
QATester	Group members have full privileges in the following Quality Center modules: Requirements, Test Plan, and Test Lab. In the Defects module, the group can only add and modify defects, but not delete them. In Project Customization, the group has privileges to change user properties and password, customize project lists, and set traceability notification rules.
Developer	Group members are limited to modifying attachments or requirement details in the following Quality Center modules: Requirements, Test Plan, and Test Lab. In the Defects module, group members can only add and modify defects, but not delete them. In Project Customization, the group has privileges to change user properties and password.
Viewer	Group members have read-only privileges in a Quality Center project, and no privileges in Project Customization.

When a project requires that certain user groups have privileges that are outside the scope of their default permissions, you can add your own customized user groups and assign each group a unique set of privileges.

After you set user group permissions, you can also define the Quality Center modules to which you want to give a user group access. When a user group member logs in to a project, only the authorized modules are displayed.

Adding User Groups

If you determine that the default user groups do not meet the needs of your project, you can create additional user groups for your project.

To add a user group:

1 In the Project Customization window, click the **Set Up Groups** link. The Set Up Groups page opens.
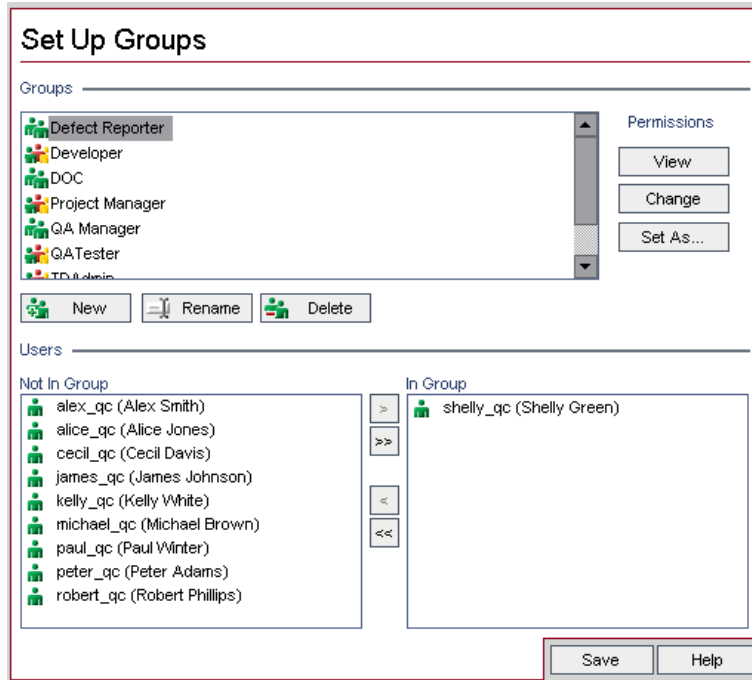
2 Click the **New** button. The New Group dialog box opens.
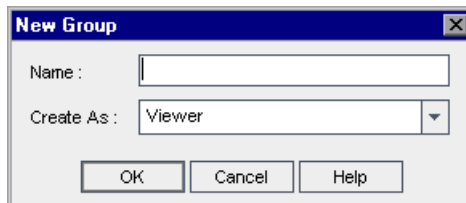
3 In the **Name** box, type a name for the group.

4 In the **Create As** list, assign the new group the privileges of an existing user group.

Tip: Choose an existing user group that has similar access privileges to the new user group you want to create. This minimizes the level of customization you will need to do.

---

5 Click **OK**.

6 Click **Yes** to confirm. The new group name is added to the Groups list in the Set Up Groups page.

7 Click **Save** to save your changes to the Set Up Groups page.

Setting User Group Permissions

Every user group has a set of privileges, or permissions, which are defined by the Quality Center project administrator. You generally set the permissions for custom user groups at the beginning of the project, but you can modify a user group's permissions at any time.

For example, suppose a group of users called DOC has Viewer permissions. In order to work more effectively on the project, they need to add, modify, and delete defects. As the Quality Center project administrator, you can assign these privileges to the DOC group by specifying permission settings.

Note: You cannot modify the privileges of a default user group. To view permissions for a default user group, in the Set Up Groups page, select the user group in the **Groups** list and click the **View** button. For more information, see "Understanding the Permission Settings Tasks" on page 153.

To set user group permissions:

1 In the Project Customization window, click the **Set Up Groups** link. The Set Up Groups page opens.

2 In the **Groups** list, choose the user group for which you want to set permissions.

3 Click the **Change** button. The Permission Settings dialog box opens.

4 Click a permission tab. For example, click **Defects**. The tab displays the tasks available in the Defects module.
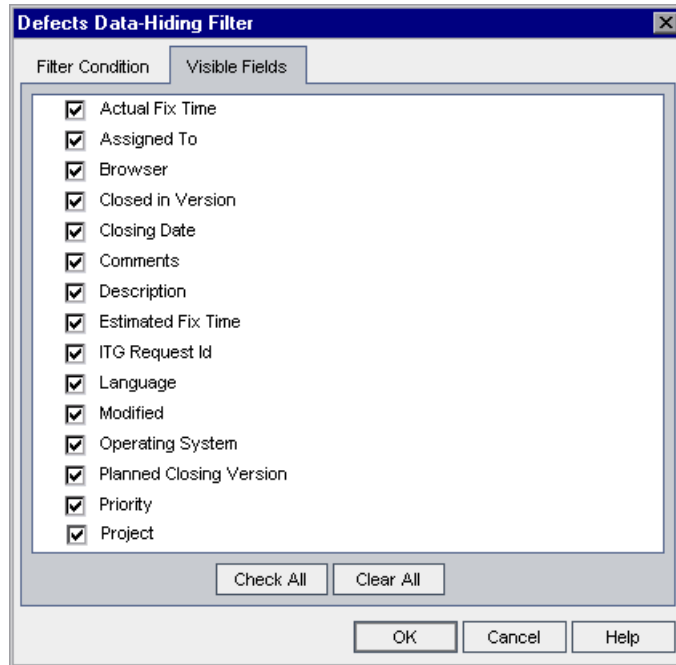
Permission tab —

Field —

Task —

Data-hiding filter —

Field modification by owner only

Transition rules for a selected field

Permission Settings For DOC Group

Requirements | Test Plan | Test Lab | Defects | Administration

☐ Reproducible
☐ ITG Request Id
☐ Assigned To
☑ Severity
☑ Status
☑ Subject
☑ Summary
☑ Operating System
☑ Browser
☑ Language
☑ Regression
☑ Category
☑ **Delete Defect**

Defects Data-Hiding Filter

Modified By Owner
☑ Can be modified by owner only

Transition Rules
Field: Status

From	To
New	Open
Open	Fixed

Add | Edit | Delete

OK | Cancel | Help
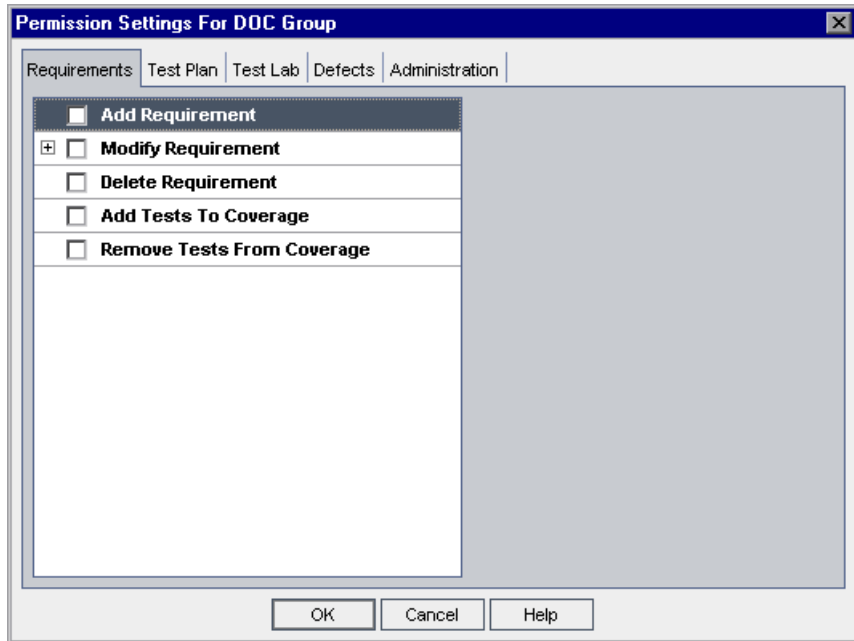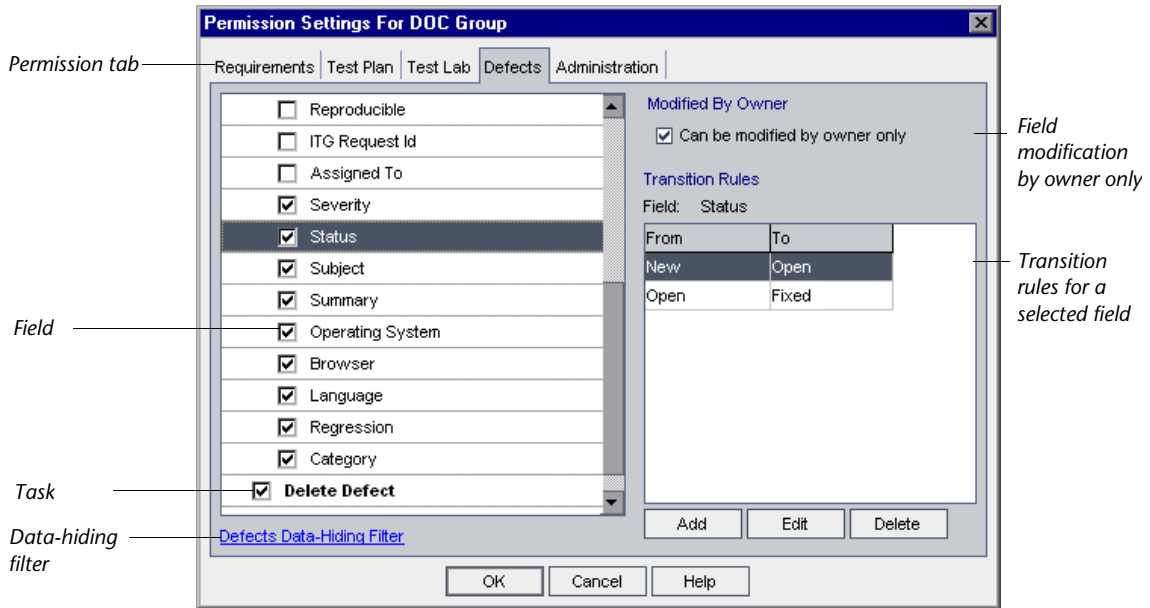
5 Select the tasks that the selected user group can use. For more information on the available tasks, see "Understanding the Permission Settings Tasks" on page 153.

6 When you select a task with a sublevel, a list of associated fields appears below. Select the check boxes of the fields that the selected user group can use.

7 To limit the capabilities of modifying a field, do any of the following:

➤ To ensure that only the person who originally created the entry can change that value, select **Can be modified by owner only**. For more information, see the following section, "Owning Quality Center Objects".

➤ To limit the values a user group can select from a lookup list type field, set transition rules of permissible field values. For more information, see "Setting Transition Rules" on page 146.

8 For deleting tasks, you can ensure that only the person who originally created the entry can delete the value by selecting **Can be deleted by owner only**. For more information, see the following section, "Owning Quality Center Objects".

9 You can click the **Data-Hiding Filter** link to hide data from the current user group in the Test Plan, Test Lab, and Defects modules. For more information, see "Hiding Data for a User Group" on page 149.

10 Click **OK** to close the Permission Settings dialog box.

11 Click **Save** to save your changes to the Set Up Groups page.

Owning Quality Center Objects

When setting group permissions, you can limit the capabilities of modifying or deleting a field value, so that only the person who originally created the entry can change or delete the value. The following table describes the objects in Quality Center and the users that are defined as the default owners of the objects.

Quality Center Object	Owner
Requirement	The **Author** field (**RQ_REQ_AUTHOR**).
Test in the Test Plan module	The **Designer** field (**TS_RESPONSIBLE**).
Test in the Test Lab module	The **Responsible Tester** field (**TC_TESTER_NAME**).
Test run in the Test Lab module	The **Tester** field (**RN_TESTER_NAME**).
Defect	The **Assigned To** field (**BG_RESPONSIBLE**).

Note: You can change the owner of a Quality Center object by modifying the value of **TB_OWNER_FIELD_NAME** in the **Tables** table. For more information on the Tables table, refer to the *Mercury Quality Center Database Reference*.

Setting Transition Rules

You can limit a group's modifying privileges by setting transition rules for modifying values in fields. These rules determine the values that the group can modify in fields that you specify. Note that transition rules can be set only for lookup list fields.

For example, when modifying defect information, you can limit the items a user group can select in the **Status** field of a defect record. You can set a transition rule that only allows a user group to edit the **Status** field from "Fixed" to "Closed".

Note: When Set Up Workflow has been used to change a list of values for a field that is set with transition rules, the field may only be modified in a way that satisfies both the workflow script and the transition rules. For more information, see Chapter 17, "Workflow Event Reference."

To set transition rules:

1 In the Project Customization window, click the **Set Up Groups** link. The Set Up Groups page opens.

2 In the **Groups** list, choose the user group for which you want to set permissions.

3 Click the **Change** button. The Permission Settings dialog box opens.

4 Click a permission tab. For example, click **Defects**. The tab displays the tasks available in the Defects module.

5 Select a task. For example, select **Modify Defect**. The task expands and lists available fields.

For more information on the available tasks, see "Understanding the Permission Settings Tasks" on page 153.

6 Under the selected task, select a field. For example, select **Status.** The Transition Rules grid appears on the right pane of the Permission Settings dialog box.

Task
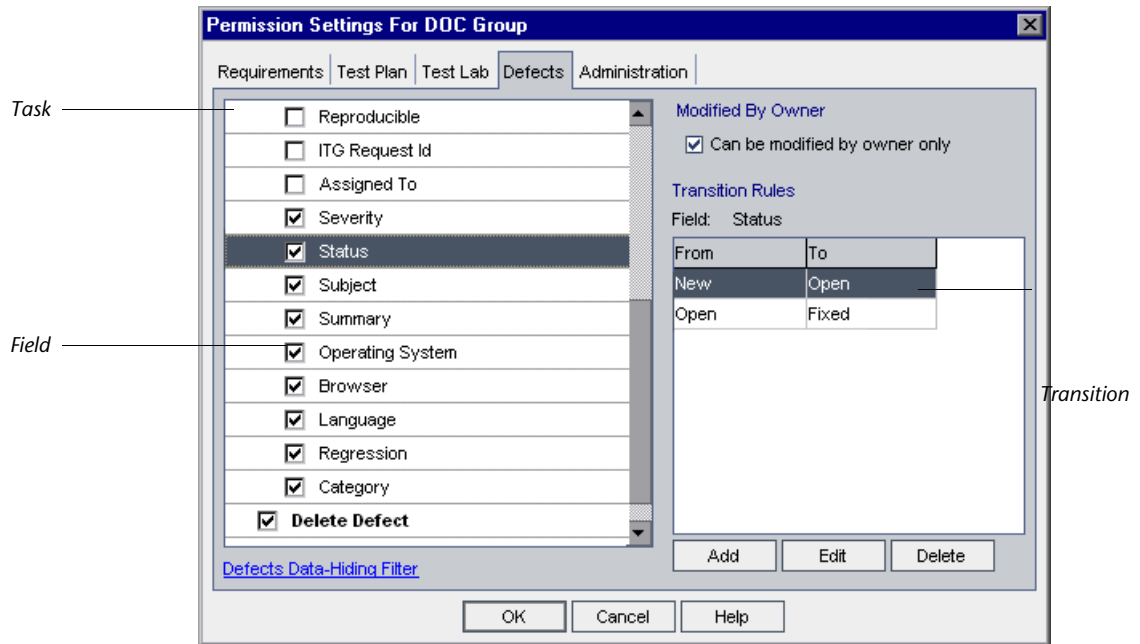
Field

Transition

7 Click **Add** to add a transition rule. The Transition Rules Editor dialog box opens.

8 Under **From**, you can:

> ➤ Select **$ANY** to allow a user group to modify the field, irrespective of the currently displayed value.

> ➤ Select a value from the list. A user group will be able to modify the selected field only when the field displays the value you select. For example, to allow a user group to edit the Status field of a defect only if "Fixed" is the current value, select **Fixed**.

9 Under **To**, you can:

> ➤ Select **$ANY** to allow a user group to change the field to any value.

> ➤ Select a value from the list. A user group will be able to change the value of the selected field to only the value that you specify. For example, to allow a user group to change the value of the Status field only to "Closed", select **Closed**.

10 Click **OK** to save and close the Transition Rules Editor dialog box. The new rules are displayed in the Transition Rules grid.
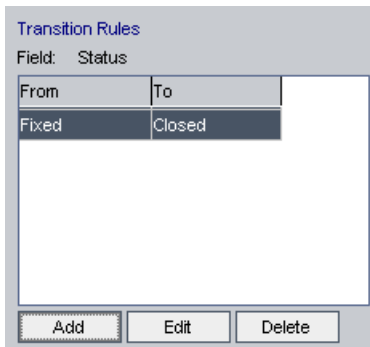
11 To modify a transition rule, select a rule from the Transition Rules grid and click the **Edit** button. In the Transition Rules Editor dialog box, modify the rule. Click **OK**.

12 To delete a transition rule, select a rule from the Transition Rules grid and click the **Delete** button. Click **OK** to confirm.

13 Click **OK** to close the Permission Settings dialog box.

14 Click **Save** to save your changes to the Set Up Groups page.

Hiding Data for a User Group

You can instruct Quality Center to hide specific records that a user group can view in the Test Plan, Test Lab, and Defects modules. This includes the following options:

➤ **Filtering Data**: You can set filters for specific fields, limiting the records that the user group can view. For example, you can set the filter for the field **Assigned To** to "[CurrentUser]". This instructs Quality Center to allow only the current user to view specific records that are assigned to him or her.

For more information on filtering, refer to the *Mercury Quality Center User's Guide*.

➤ **Defining Visible Fields**: You can select which fields in a module the user group can see and which should be hidden. This can help in simplifying the volume of data displayed. Users belonging to a specific user group need to view only data that relates to their work. For example, in the Test Plan tab, you may want to hide the **Path** field from user groups that should not be able to access test scripts from the file system. Note that you cannot hide required fields.

To hide data:

1 In the Project Customization window, click the **Set Up Groups** link. The Set Up Groups page opens.

2 In the **Groups** list, choose the user group for which you want to set permissions.

3 Click the **View** button. The Permission Settings dialog box opens.

4 Click a permission tab. For example, click **Defects**. The tab displays the tasks available in the Defects module.

5 Click the **Data-Hiding Filter** link located at the bottom left corner of the dialog box. For example, in the Defects tab, click the **Defects Data-Hiding Filter**. The Defects Data-Hiding Filter dialog box opens and displays the Filter tab.
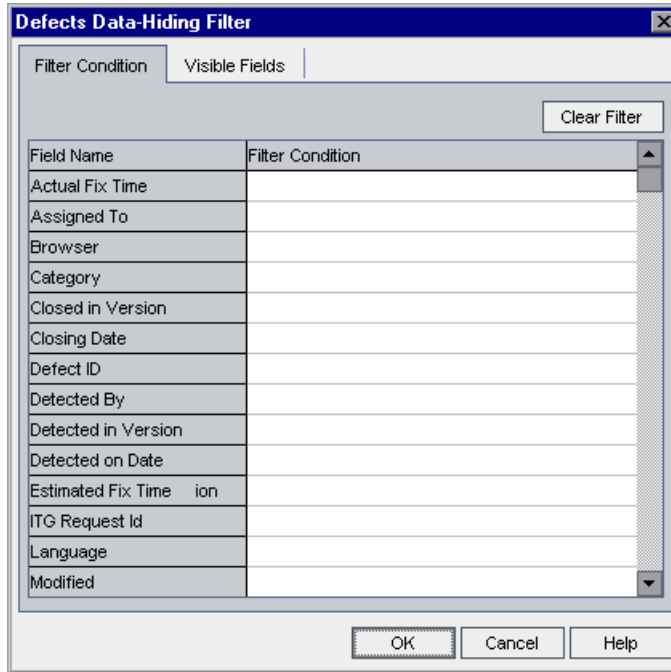
6 Set one or more filters. The filter set determines the records that a user group can view in Quality Center. For more information, refer to the *Mercury Quality Center User's Guide*.

7 Click the **Visible Fields** tab.

8 Select or clear the appropriate fields.

9 Click **OK** to close the Data-Hiding Filter dialog box.

10 Click **Close** to close the Permission Settings dialog box.

11 Click **Save** to save your changes to the Set Up Groups page.

Assigning Existing Sets of Permissions to User Groups

During the course of a project, you can assign one user group another user group's permissions.

To assign an existing set of permissions to a user group:

1 In the Project Customization window, click the **Set Up Groups** link. The Set Up Groups page opens.

2 In the **Groups** list, select a group name.

3 Click the **Set As** button. The Set Group As dialog box opens.
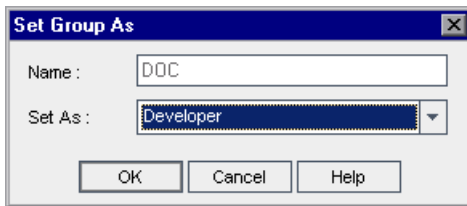
4 In the **Set As** list, select a group name.

5 Click **OK.**

6 Click **Yes** to confirm.

Renaming User Groups

You can rename a user group. Note that all customization performed on the group remains.

To rename a user group:

1 In the Project Customization window, click the **Set Up Groups** link. The Set Up Groups page opens.

2 In the **Groups** list, select a group name.

3 Click the **Rename** button. The Rename Group dialog box opens.

4 Type a new name for the group.

5 Click **OK** to save your changes.

Deleting User Groups

You can delete user groups that were added to a Quality Center project.

To delete a user group:

1 In the Project Customization window, click the **Set Up Groups** link. The Set Up Groups page opens.

2 In the **Groups** list, select a group name.

3 Click the **Delete** button.

4 Click **OK** to confirm.

Understanding the Permission Settings Tasks

You can display the permissions of user groups in the Permission Settings dialog box. You can modify the permissions of custom user groups at any time. You cannot modify the permissions of the default user groups (TDAdmin, QATester, Project Manager, Developer, and Viewer).

To display permissions for a custom user group, in the Set Up Groups page, select the user group in the **Groups** list, and click the **View** or **Change** button. For a default user group, click the **View** button. The Permission Settings dialog box opens.

The Permission Settings dialog box contains the following tabs: Requirements, Business Components, Test Plan, Test Lab, Defects, and Administration. If you use Mercury Business Process Testing, refer to the *Mercury Business Process Testing User's Guide*.

Requirements Tasks

The Requirements tab displays the tasks available in the Requirements module.
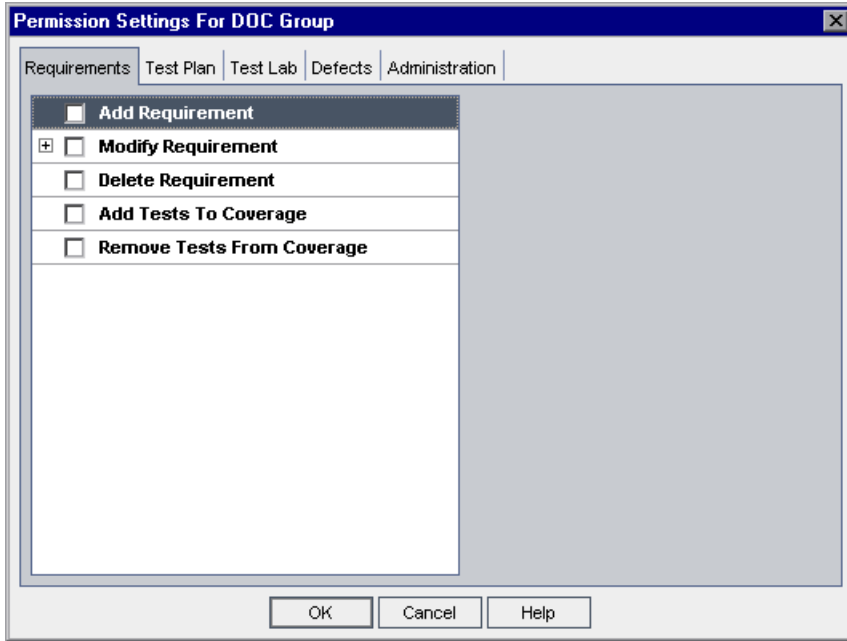
The Requirements tab includes the following tasks:

Task	Description
Add Requirement	User group can add requirements to the requirements tree.
Modify Requirement	User group can modify requirements in the requirements tree. Note that this task enables you to specify the fields that the selected user group can modify. To ensure that only the owner of the requirement can modify it, click the **Can be modified by owner only** check box.
Delete Requirement	User group can delete requirements from the requirements tree. To ensure that only the owner of the requirement can delete it, click the **Can be deleted by owner only** check box.

Task	Description
Add Tests to Coverage	User group can add tests coverage to a requirement and requirements coverage to a test.
Remove Tests from Coverage	User group can remove tests coverage from a requirement and requirements coverage from a test.

Test Plan Tasks

The Test Plan tab displays the tasks available in the Test Plan module.

155
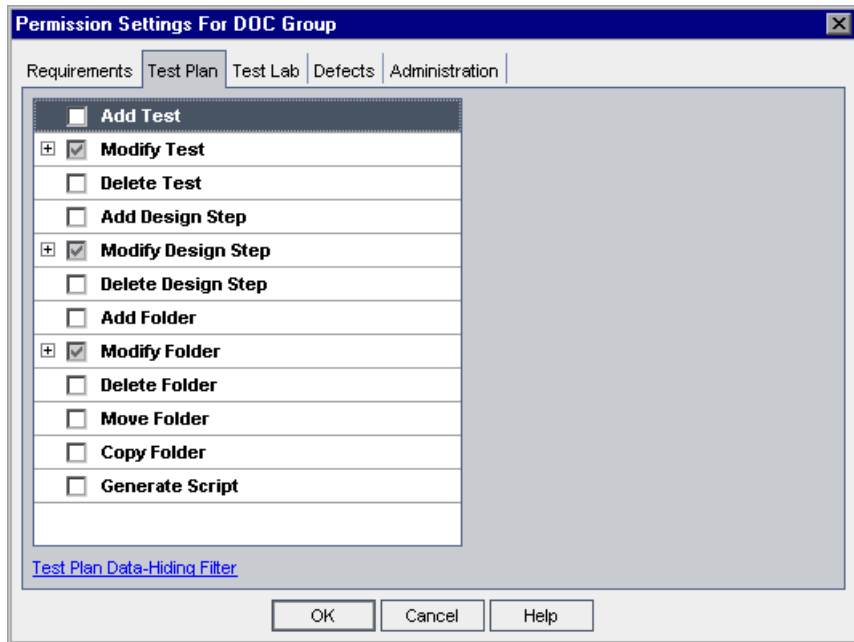
The Test Plan tab includes the following tasks:

Task	Description
Add Test	User group can add tests to the test plan tree.
Modify Test	User group can modify tests in the test plan tree. Note that this task enables you to specify the fields that the selected user group can modify. To ensure that only the owner of the test can modify it, click the **Can be modified by owner only** check box.
Delete Test	User group can delete tests from the test plan tree. To ensure that only the owner of the test can delete it, click the **Can be deleted by owner only** check box.
Add Design Step	User group can add design steps in the Design Steps tab.
Modify Design Step	User group can modify design steps in the Design Steps tab. Note that this task enables you to specify the fields that the selected user group can modify.
Delete Design Step	User group can delete design steps from the Design Steps tab. To ensure that only the owner of the design step can delete it, click the **Can be deleted by owner only** check box.
Add Folder	User group can add folders to the test plan tree.
Modify Folder	User group can modify folders in the test plan tree. Note that this task enables you to specify the fields that the selected user group can modify.
Delete Folder	User group can delete folders from the test plan tree.
Move Folder	User group can move folders in the test plan tree.
Copy Folder	User group can copy folders in the test plan tree.
Generate Script	User group can convert the test steps of a manual test, displayed in the Design Steps tab, into an automated test.

Test Lab Tasks

The Test Lab tab displays the tasks available in the Test Lab module.
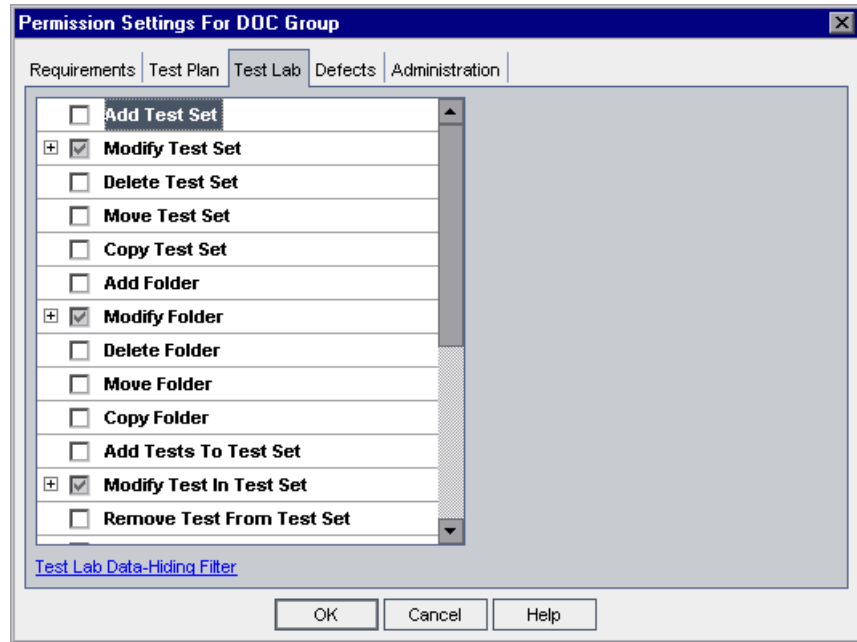
The Test Lab tab includes the following tasks:

Task	Description
Add Test Set	User group can add test sets.
Modify Test Set	User group can modify test sets. Note that this task enables you to specify the fields that the selected user group can modify.
Delete Test Set	User group can delete test sets.
Move Test Set	User group can move test sets to different folders in the test sets tree.
Copy Test Set	User group can copy test sets to folders in the test sets tree.
Add Folder	User group can add folders to the test sets tree.

Task	Description
Modify Folder	User group can modify folders in the test sets tree. Note that this task enables you to specify the fields that the selected user group can modify.
Delete Folder	User group can delete folders in the test sets tree.
Move Folder	User group can move folders in the test sets tree.
Copy Folder	User group can copy folders in the test sets tree.
Add Tests to Test Set	User group can add tests to a test set.
Modify Test in Test Set	User group can modify tests in a test set. Note that this task enables you to specify the fields that the selected user group can modify. To ensure that only the owner of the test set can modify it, click the **Can be modified by owner only** check box.
Remove Test from Test Set	User group can remove tests from a test set.
Run Test	User group can run tests.
Modify Run	User group can modify test run information. Note that this task enables you to specify the fields that the selected user group can modify. To ensure that only the owner of the run can modify it, click the **Can be modified by owner only** check box.
Delete Run	User group can delete test run information. To ensure that only the owner of the run can delete it, click the **Can be deleted by owner only** check box.
Reset Test Set	User group can clear all runs in a test set.
Add Hosts	User group can add hosts for running tests.
Modify Hosts	User group can modify host information.
Delete Hosts	User group can delete hosts.
Add Host Group	User group can add host groups for running tests.
Modify Host Group	User group can modify host group information.
Delete Host Group	User group can delete host groups.

Defects Tasks

The Defects tab displays the tasks available in the Defects module.
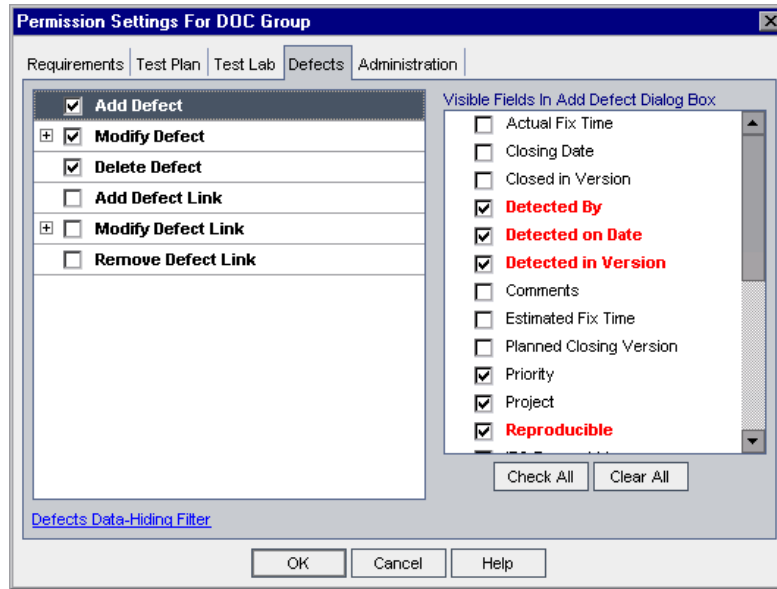
The Defects tab includes the following tasks:

Task	Description
Add Defect	User group can add defects to the Defects Grid. Note that you can customize the fields that appear in the Add Defect dialog box. Under **Visible Fields in Add Defect Dialog Box,** select the fields you want to be visible. Fields that are marked in red are mandatory if they are visible.
Modify Defect	User group can modify defects in the Defects Grid. Note that this task enables you to specify the fields that the selected user group can modify. To ensure that only the owner of the defect can modify it, click the **Can be modified by owner only** check box.
Delete Defect	User group can delete defects from the Defects Grid. To ensure that only the owner of the defect can delete it, click the **Can be deleted by owner only** check box.

Task	Description
Add Defect Link	User group can add defect links to the Quality Center entities.
Modify Defect Link	User group can modify defect links. This task enables you to specify the fields that the selected user group can modify.
Remove Defect Link	User group can remove defect links from the Quality Center entities. To ensure that only the owner of the defect can delete it, click the **Can be deleted by owner only** check box.

Administration Tasks

The Administration tab displays the administrative tasks available in Quality Center.
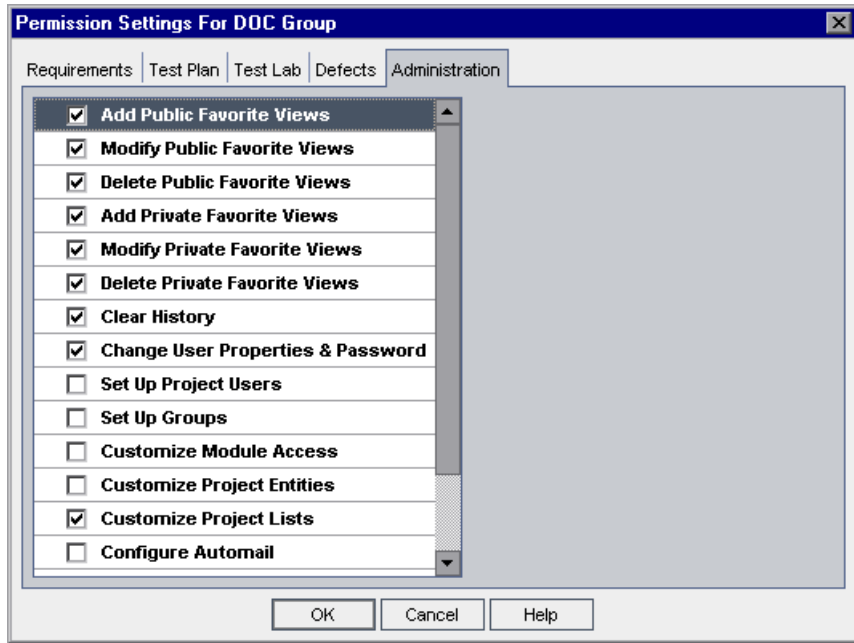
The Administration tab includes the following tasks:

Task	Description
Add Public Favorite Views	User group can add public favorite views.
Modify Public Favorite Views	User group can modify public favorite views.
Delete Public Favorite Views	User group can delete public favorite views.
Add Private Favorite Views	User group can add private favorite views.
Modify Private Favorite Views	User group can modify private favorite views.
Delete Private Favorite Views	User group can delete private favorite views.

Task	Description
Clear History	User group can clear the information displayed in the History table. For instructions on clearing history, refer to the *Mercury Quality Center User's Guide*.
Change User Properties & Password	User group can change their properties and password, using the **Change User Properties** link in the Project Customization window.
Set Up Project Users	User group can add and remove users from a Quality Center project, using the **Set Up Project Users** link in the Project Customization window.
Set Up Groups	User group can assign privileges to user groups and specify permission settings, using the **Set Up Groups** link in the Project Customization window.
Customize Module Access	User group can decide the type of access a user group can have for Quality Center, using the **Customize Module Access** link in the Project Customization window.
Customize Project Entities	User group can customize fields in a Quality Center project, using the **Customize Project Entities** link in the Project Customization window.
Customize Project Lists	User group can add their own customized lists to a project, using the **Customize Project Lists** link in the Project Customization window.
Configure Automail	User group can set up a mailing configuration to routinely inform users about defect repair activity, using the **Configure Automail** link in the Project Customization window.
Traceability Notification Rules	User group can set up traceability notification rules, using the **Traceability Notification Rules** link in the Project Customization window.
Set Up Workflow	User group can write and/or generate scripts that dynamically change the user interface in the Quality Center modules, using the **Set Up Workflow** link in the Project Customization window.

Customizing Module Access for User Groups

For each Quality Center project, you can control the modules that each user group can access. By preventing users from accessing unnecessary modules, you can better utilize your Quality Center licenses. For example, if a user group uses Quality Center only to add defects to a project, you can limit the group's access to the Defects module only.

You can specify module access for a user group as follows:

➤ the Defects module only

➤ all Quality Center modules except the Business Components module

➤ all Quality Center modules including the Business Components module

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Notes:

➤ If access to the Business Components module is not enabled for a user group, those users can still view existing business process tests in read-only mode. For more information, refer to the *Mercury Business Process Testing User's Guide*.

➤ If you are working with the Quality Center Starter Edition, Business Process Testing is not supported.

You can monitor how many users are currently connected to a project, the time the users first logged in to the project, the time of the last action, and the type of access. For more information, see "Monitoring User Connections" on page 88. You can also determine the total number of Quality Center licenses in use. For more information, see "Managing Quality Center Licenses" on page 91.

To customize module access for user groups:

1 In the Project Customization window, click the **Customize Module Access** link. The Customize Module Access page opens.
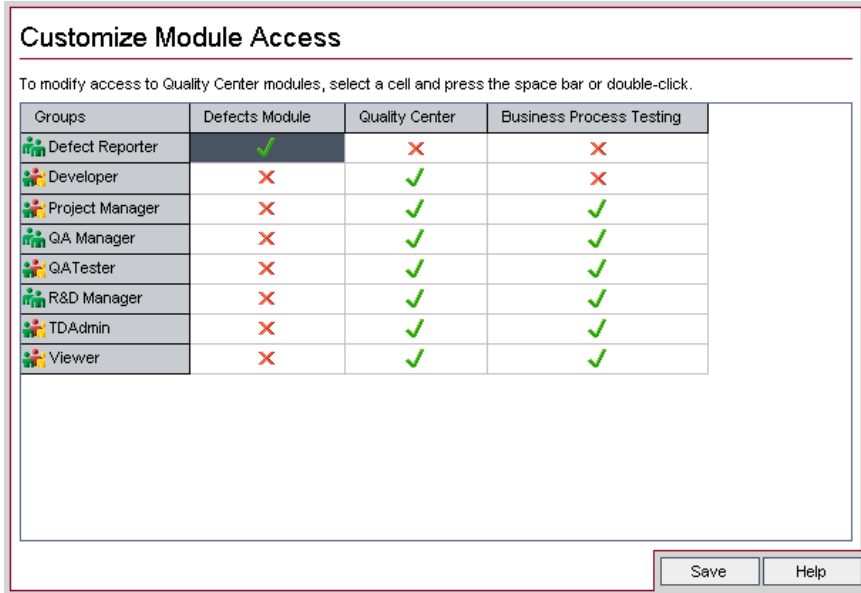
The ✓ icon indicates the modules that the user group can access.

To select or clear a cell in the table, double-click the cell, or select the cell and press the space bar.

2 To select the Defects module only, select the **Defects Module** column. This clears the **Quality Center** column and the **Business Process Testing** column.

3 To select the Quality Center modules, select the **Quality Center** column. This clears the **Defects Module** column.

4 To select the Business Components module, select the **Business Process Testing** column. This selects the **Quality Center** column and clears the **Defects Module** column.

5 Click **Save** to save your changes.

11

Customizing Quality Center Projects

As a Quality Center project administrator, you can customize a project to meet the specific needs of your testing team. For example, you can add or customize fields, and create categories and lists that reflect the needs of your testing project.

This chapter describes:

➤ About Customizing Quality Center Projects

➤ Customizing Project Entities

➤ Customizing Project Lists

About Customizing Quality Center Projects

Before you begin a project, you can customize your project to reflect your unique testing requirements. As a project progresses, you can further adjust the project to meet its changing needs.

Quality Center contains system fields in which you enter information about a requirement, test, test step, test set, test run, or defect. You can modify the behavior of these fields by restricting users to selecting values only from associated lists, by making entry in certain fields mandatory, and by preserving a history of values entered in the field. In addition, you can include data unique to your project by creating user-defined fields. You can associate these fields with Quality Center system and user-defined lists.

For example, if you are running tests on several builds of an application, you can add a **Detected in Build** field to the Add Defect dialog box. You can then create a selection list containing the values **Build1**, **Build2**, and **Build3**, and associate the list with the **Detected in Build** field.

Customizing Project Entities

Using the Customize Project Entities page, you can customize your Quality Center project to suit your testing environment.

Project entity

System fields

User-defined fields

Each Quality Center project is divided into project entities. An *entity* is a table that contains data entered by users for a specific testing process.

The following entities are available:

Entity	Description
DEFECT	Defect data in the Defects module.
TEST	Test data in the Test Plan module.
TEST STEP	Design step data in the Test Plan module, and test step data in the Test Lab module.
RUN	Test run data in the Test Lab module.
REQUIREMENT	Requirement data in the Requirements module.
TEST IN TESTSET	Test data in the Test Lab module.
TESTSET	Test set data in the Test Lab module.

Each entity contains system fields and user-defined fields:

➤ *System fields* are Quality Center default fields. You cannot add or delete system fields, you can only modify them.

➤ *User fields* are fields that you can define and include in a Quality Center project to customize for your specific project needs. You can add, modify, and delete user-defined fields.

For detailed information on Quality Center entities and fields, to the *Mercury Quality Center Database Reference*.

The **Field Settings** section displays the field properties. The following properties are available:

Properties	Description
Field Name	Indicates the field name used in the Quality Center database table.
Field Label	Indicates the field name as it is displayed in Quality Center. You can type a new name or use the default name.
Field Type	Specifies the type of data that the user can enter in the field. It includes the following types: • **Number:** Enables integer entry only. • **String:** Enables the entry of any character string. • **Date:** Enables the selection of a date. • **Lookup List:** Displays the Lookup List area and enables the selection from a drop-down list. • **User List:** Enables the selection of a user name from your Quality Center users list. • **Memo**: Enables the entry of blocks of data. Note that you can add up to 3 memo fields to each Quality Center entity.
Field Length	Indicates the field size. (Available only when the **String** type is selected.) **Note:** The maximum field length is 255 characters.
History	Preserves a log of values entered in the selected field.
Required	Indicates that a user must enter a value for the field. **Note:** If you add a required String field or Memo field to a project that already contains data, users must enter data in the new field when they create a new record, but not when they modify an existing record.
Searchable	Indicates a searchable field. (Available only when the **Text Search** option is enabled in the DB Servers tab. For more information, see "Defining Searchable Fields" on page 105.)

Properties	Description
Masked	Indicates the input data mask for the field. (Available only when the **String** type is selected.) For more information, see "Defining Input Masks" on page 172.
Lookup List	Includes a list of predefined lists. (Available only when the **Lookup List** type is selected.) To associate a field with a predefined list, select a list from the **Lookup List** box. To view or modify the selected list, click the **Goto List** button.
New List	Creates a new list. (Available only when the **Lookup List** type is selected.) To associate a field with a new list, click the **New List** button. The Customize Project Lists dialog box opens. For more information on customizing a list, see "Customizing Project Lists" on page 175.
Goto List	Displays a predefined list. (Available only when the **Lookup List** type is selected.) To open a predefined list, select a list from the **Lookup List** box. Click the **Goto List** button. The Customize Project Lists dialog box opens. For more information on customizing a list, see "Customizing Project Lists" on page 175.

Properties	Description
Verify Value	Limits the user to select a value only from the items that are listed in the list box. (Available only when the **Lookup List** type is selected.)
Allow Multiple Values	For user-defined fields, this option allows the user to select more than one value in any field that is associated with a predefined lookup list. (It is only available when the **Lookup List** type is selected.)
	For example, if you create a **Language** user field in the Defect entity and enable the **Allow Multiple Values** option, a user can select English, French, and German language values at the same time when entering this field's value.
	Note:
	• This option is not available in the TEST STEP entity.
	• If you group a data grid or summary graph by a field containing multiple values, the information in each value is grouped as its entire value. This value is the category for grouping. For example, a value with English and French will be grouped once as English;French, and not as part of separate English and French categories.
	For more information on customizing a list, see "Customizing Project Lists" on page 175.

Adding User-Defined Fields

You can customize a Quality Center project by adding up to 99 user-defined fields to each Quality Center entity.

To add a user-defined field:

1 In the Project Customization window, click the **Customize Project Entities** link. The Customize Project Entities page opens.

2 Under **Project Entities**, expand an entity.

3 Click the **User Fields** folder.

4 To add a user-defined field, you can:

➤ Click the **New Field** button to add a number, string, date, or list type field.

➤ Click the **New Field** arrow and choose **New Memo Field** to add a memo field. You can add up to 3 memo fields to each Quality Center entity.

5 In the **Field Settings** section, set properties for the field. For more information, see the "Field Settings" section on page 168.

6 Click **Save** to save your changes to the Customize Project Entities page.

Modifying System and User-Defined Fields

You can modify the properties of system and user-defined fields in your Quality Center project.

Note: You can modify only the following properties for system fields: **Field Label**, **History**, **Required**, and **Verify Value**. For more information, see the "Field Settings" section on page 168.

To modify a system or user-defined field:

1 In the Project Customization window, click the **Customize Project Entities** link. The Customize Project Entities page opens.

2 Under **Project Entities**, expand an entity.

3 Expand the **System Fields** folder or the **User Fields** folder.

4 Click the field that you want to customize. The settings for that field appear under **Field Settings**.

5 Modify the properties for the selected field. For more information, see the "Field Settings" section on page 168.

6 Click **Save** to save your changes to the Customize Project Entities page.

Deleting User-Defined Fields

You can delete user-defined fields from your Quality Center project.

To delete a user-defined field:

1 In the Project Customization window, click the **Customize Project Entities** link. The Customize Project Entities page opens.

2 Under **Project Entities**, expand an entity.

3 Expand the **User Fields** folder.

4 Click the field that you want to delete and click the **Remove Field** button.

5 Click **OK** to confirm. The field is removed from the **User Fields** folder.

6 Click **Save** to save your changes to the Customize Project Entities page.

Defining Input Masks

The input mask option is used to prompt users for data input using a mask pattern. If the user attempts to enter a character that conflicts with the input mask, an error occurs. For example, to prompt the user to enter a phone number, you can define the following input mask:

!\(000\)000-0000

This input mask limits the user to numeric characters only. It is displayed in an edit box as follows:

(___) ___ - ____

Note: You can define input masks for string type fields only.

To define an input mask:

1 In the Field Settings section, select **Masked**. For more information, see the "Field Settings" section on page 168.

2 Under **Masked Edit Attributes**, click the **Define** button. The Input Mask Editor dialog box opens.
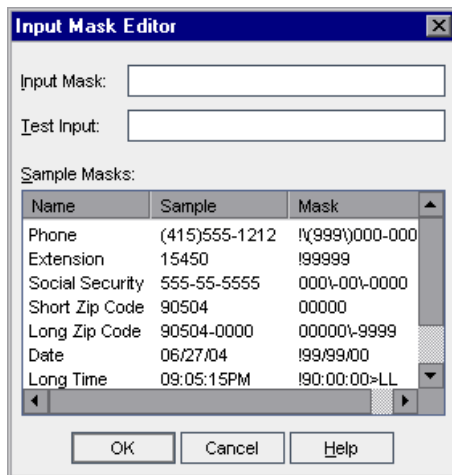
3 In the **Input Mask** box, type an input mask or select a predefined mask.

You can use the following characters when defining input masks:

Mask Character	Description
!	A space for a leading or trailing blank.
#	A digit.
.	A decimal.
:	A time separator.
/	A date separator.
\	Treats the next character in the mask string as a literal. For example, you can include the (,), #, &, A, and ? characters in the mask.

Mask Character	Description
>	Converts all the characters that follow to uppercase.
<	Converts all the characters that follow to lowercase.
A	An alphanumeric character (entry required). For example: a – z, A – Z, or 0 – 9.
a	An alphanumeric character (entry optional). For example: a – z, A – Z, or 0 – 9.
C	A character (entry required). Valid values are ANSI characters in the following ranges: 32-126 and 128-255.
c	A character (entry optional). Valid values are ANSI characters in the following ranges: 32-126 and 128-255.
L	An alphabetic character or space (entry required). For example: a – z or A – Z.
l	An alphabetic character or space (entry optional). For example: a – z or A – Z.
0	A digit (entry required). For example: 0 – 9.
9	A digit (entry optional). For example: 0 – 9.
_	Inserts spaces. When the user types characters in the field box, the cursor skips the _ character.

4 In the **Test Input** box, you can test the input mask.

5 Click **OK** to close the Input Mask Editor dialog box.

6 Click **Save** to save your changes to the Customize Project Entities page.

Customizing Project Lists

Using the Customize Project Lists page, you can create, rename, and delete user-defined lists.

A list contains *items*, which are values that you can enter in a field. For example, the selection list for the Languages user-defined field may contain the items **English** and **European Languages**.

The list can also contain several levels of *sub-items*. For example, the item **English** can contain a sublist with the sub-items **English (Australia)**, **English (Canada)**, **English (Great Britain)**, and **English (US)**.

You can allow the user to select more than one value from a list by enabling the **Allow Multiple Values** option for the relevant field in the Customize Project Entities page. For more information, see "Allow Multiple Values" in the Field Settings table on page 170.

Note: To associate a list with a field, see "Customizing Project Entities" on page 166.

Creating Lists

You can create a list to be assigned to one or more fields.

To create a list:

1 In the Project Customization window, click the **Customize Project Lists** link. The Customize Project Lists page opens.

2 Click the **New List** button. The New List dialog box opens.

3 Type a name for the new list (maximum length 70 characters) and click **OK**. The list name appears in the Lists box.

4 To add an item to the new list or to an existing list, select the list name in the **Lists** box and click the **New Item** button. The New Item dialog box opens. Type a name for the item and click **OK**.

Note: You should not use a semi-colon ";" as part of any list item if the list is to be used in a multiple value field. For more information on multiple value fields, see "Allow Multiple Values" in the Field Settings table on page 170.

---

5 To create a sub-item, select an item in **List Items** and click the **New Sub-Item** button. The New Sub-Item dialog box opens. Type a name for the sub-item and click **OK**.

6 Click **Save** to save your changes to the Customize Project Lists page.

Renaming Lists, Items, or Sub-Items

You can rename user-defined lists, and system and user-defined items or sub-items.

Note: You cannot change some system list items. For example, the Y and N in the **YesNo** list. For more information on system items that cannot be changed, refer to the TestDirector for Quality Center Knowledge Base (http://support.mercury.com) and search for Problem ID 7165.

To rename a list:

1 In the Project Customization window, click the **Customize Project Lists** link. The Customize Project Lists page opens.

2 In the **Lists** box, select a list.

3 Click the **Rename List** button. The Rename List dialog box opens.

4 Type a new name for the list.

5 Click **OK** to close the Rename List dialog box.

6 Click **Save** to save your changes to the Customize Project Lists page.

To rename an item or sub-item:

1 In the Project Customization window, click the **Customize Project Lists** link. The Customize Project Lists page opens.

2 In the **Lists** box, select a list.

3 Under **List Items**, select an item.

4 Click the **Rename Item** button. The Rename List Item dialog box opens.

5 Type a new name for the item. Click **OK**.

6 Click **Save** to save your changes to the Customize Project Lists page.

Deleting Lists, Items, or Sub-Items

You can delete user-defined lists, and system and user-defined items or sub-items.

Note:

➤ You cannot delete a user-defined list that is being used as a lookup list for a field.

➤ You cannot delete some system list items. For example, the Y and N in the **YesNo** list. For more information on system items that cannot be deleted, refer to the TestDirector for Quality Center Knowledge Base (http://support.mercury.com) and search for Problem ID **7165**.

To delete a list:

1 In the Project Customization window, click the **Customize Project Lists** link. The Customize Project Lists page opens.

2 In the **Lists** box, select a user-defined list name.

3 Click the **Delete List** button.

4 Click **Yes** to confirm.

5 Click **Save** to save your changes to the Customize Project Lists page.

To delete an item or sub-item:

1 In the Project Customization window, click the **Customize Project Lists** link. The Customize Project Lists page opens.

2 In the **Lists** box, select a list name.

3 Under **List Items**, select a list item.

4 Click the **Delete Item** button.

5 Click **Yes** to confirm.

6 Click **Save** to save your changes to the Customize Project Lists page.

12

Configuring Automail

As a Quality Center project administrator, you can routinely inform your personnel about defect repair activity. You determine the conditions for sending defect messages to each recipient by defining a mailing configuration.

This chapter describes:

➤ About Setting Automail

➤ Designating Automail Fields

➤ Defining Automail Conditions

➤ Customizing the Subject of Defect Mail

About Setting Automail

Quality Center enables you to automatically notify users through e-mail each time changes are made to specified defect fields. Configuring mail for a Quality Center project involves the following steps:

➤ Click the **Configure Automail** link to define the defect fields and specify the users and conditions. See "Designating Automail Fields" on page 180, and "Defining Automail Conditions" on page 182.

➤ In Site Administration's **Site Projects** tab, enable the mail configuration for a project by selecting the **Send mail automatically** check box. Note that this check box must be selected for your mail configuration to work. For more information, see "Updating Project Details" on page 31.

> ➤ In Site Administration's **Site Configuration** tab, you can edit the MAIL_INTERVAL parameter, which defines the time interval for sending defect e-mail in all projects. You can also set parameters to define the format and character set of mail, and whether attachments or history are included in the mail. For more information, see "Setting Quality Center Configuration Parameters" on page 107.

> ➤ You can customize the subject line of defect e-mail for all projects or for a specific project. For more information, see "Customizing the Subject of Defect Mail" on page 183.

> ➤ In Site Administration's **Site Users** tab, make sure you have specified the e-mail addresses of the users who should receive defect messages. For more information, see "Updating User Details" on page 78.

Designating Automail Fields

When you designate a field as a mail field, any changes made to that field will cause Quality Center to send an e-mail message in the next time interval. For example, suppose you designate **Status** as a mail field and then update the **Status** field for a particular defect. In the next time interval, the details of the defect, including the updated status information, will be sent to designated users.

To designate Automail fields:

1 In the Project Customization window, click the **Configure Automail** link. The Configure Automail page opens.

Available Defect Fields contains the names of the fields that appear in the Defects Grid. **Mail On Change Of** contains the names of the fields currently assigned as mail fields.

2 Choose one or more fields and click the arrow buttons (> and <) to move the fields from one list to the other. Click the double arrow buttons (>> and <<) to move all the fields from one list to the other.

3 Click **Save** to save your changes.

Defining Automail Conditions

Mail conditions determine when various users receive defect messages. For each user, you can define separate mail conditions. For example, you can specify that a user will receive messages only for defects assigned an urgent priority.

To define Automail conditions:

1 In the Project Customization window, click the **Configure Automail** link. The Configure Automail page opens.

2 Click the **Condition** tab.
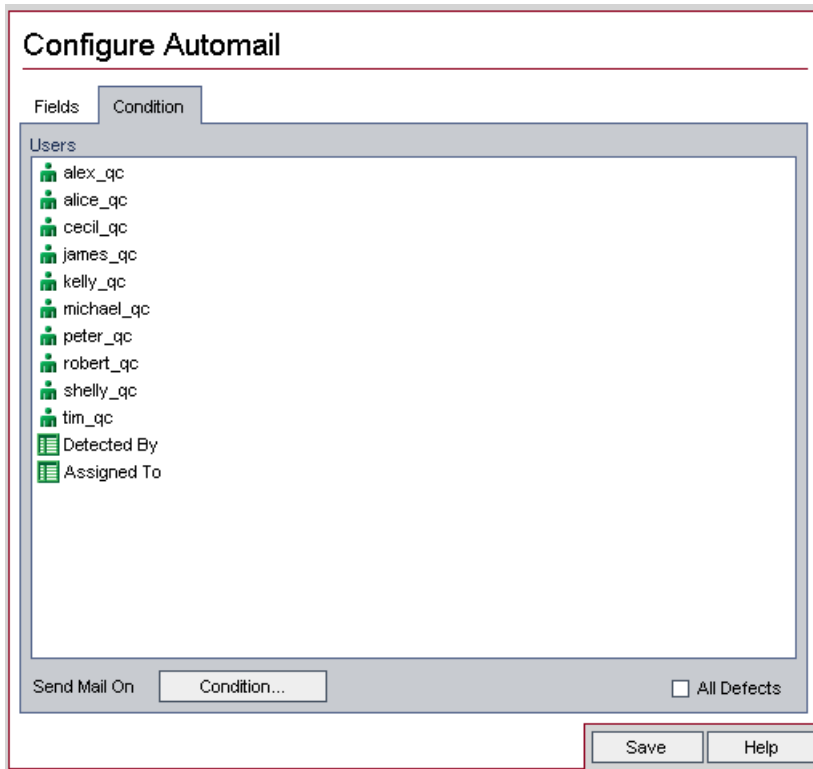
3 Choose a name from the **Users** list.

In addition, you can choose **Detected By** or **Assigned To**. Select these items to notify users when defects that they detected or are responsible for repairing are modified.

4 Select the **All Defects** check box to notify the selected user of every change to a defect.

5 Alternatively, click the **Condition** button to define a filter under which the selected user will receive mail. Note that if you define multiple filters, the selected user will only receive mail if all of the conditions are met. For more information on filtering, refer to the *Mercury Quality Center User's Guide*.

6 Click **Save** to save your changes.

Customizing the Subject of Defect Mail

You can customize the subject line of defect e-mail sent automatically to users, for all projects or for a specific project. For example, you can define a subject line such as the following:

Defect # 4321 has been created or updated - Buttons on print dialog are not aligned

The line can contain the values of Quality Center fields. To include a field value from the defect that is being sent, prefix the field name with a question mark (?). Field names must be upper-case. For example:

Defect # ?BG_BUG_ID has been created or updated - ?BG_SUMMARY

To customize the subject of defect mail for all projects:

You can customize the subject line for all your projects by adding the **AUTO_MAIL_SUBJECT_FORMAT** parameter in the **Site Configuration** tab. For more information, see "Setting Quality Center Configuration Parameters" on page 107.

To customize the subject of defect mail for a specific project:

1 In Site Administration, click the **Site Projects** tab.

2 In the Projects list, double-click the project for which you want to customize the e-mail subject line.

3 Select the **DATACONST** table.

4 In the SQL pane, type an SQL INSERT statement to insert a row into the table with the following values:

> ➤ In the **DC_CONST_NAME** column, insert the parameter name **AUTO_MAIL_SUBJECT_FORMAT**.

> ➤ In the **DC_VALUE** column, insert the strings and the names of fields to be placed in the subject line.

For example, type the following SQL statement into the SQL pane:

insert into dataconst values ('AUTO_MAIL_SUBJECT_FORMAT', 'DEFAULT.TESTPROJ - Defect # ?BG_BUG_ID has been created or updated - ?BG_SUMMARY')

The subject line you define is specific to the project, so you can include the project name in the line.

For more information on modifying project tables, see "Querying Project Tables" on page 38.

5 Click the **Execute SQL** button. The row is added to the **DATACONST** table to set the e-mail subject.

13

Setting Traceability Notification Rules

As a Quality Center project administrator, you can activate traceability notification rules for your project. This instructs Quality Center to create alerts and send e-mail to notify those responsible when changes occur in your project that may impact the testing process.

This chapter describes:

➤ About Setting Traceability Notification Rules

➤ Setting Traceability Notification Rules

About Setting Traceability Notification Rules

You can keep track of your requirements, tests and defects as you perform your project testing process. When an entity changes, you can instruct Quality Center to notify those responsible for any associated entities.

The traceability rules you can activate are based on the following associations you can create in Quality Center:

➤ You can associate a test in the test plan tree with a requirement. This is performed by creating **requirements coverage** in the Test Plan module, or by creating **tests coverage** in the Requirements module.

➤ You can link a test with a defect. This is performed by creating **Linked Defects** in the Test Plan module, or by adding a defect during a manual test run.

After you have established associations in your project, you can then trace changes using these associations. When an entity in your project changes, Quality Center notifies you of any associated entities that may be impacted by the change.

Notification involves two steps. Quality Center flags the associated entity, and then sends e-mail to the user responsible for the entity.

There are four traceability notification rules you can activate:

Rule	Entity Flagged	User Notified	Entity Changed
1	Test	Test designer. (Displayed in the Test Plan module, **Details** tab, in the **Designer** box.)	Linked requirement has any change, excluding a change in the status. For example, an added attachment.
2	Test Instance	Responsible tester. (Displayed in the Test Lab module, Execution Grid, in the **Responsible Tester** column.)	Linked defect status changes to "Fixed".
3	Defect	User responsible for the defect. (Displayed in the Defects module in the **Assigned To** column.)	Linked test run status changes to "Passed".
4	Test	Test designer and all project users. Also, note the following: • Only the designer of the linked test is notified by e-mail • Only the designer of the linked test can delete the alert. (Test designer name is displayed in the Test Plan module, **Details** tab, in the **Designer** box.)	Linked requirement has any change, excluding a change in the status. For example, an added attachment.

For more information on traceability, refer to the *Mercury Quality Center User's Guide*.

Setting Traceability Notification Rules

You can activate four traceability notification rules.

To set traceability notification rules:

1 In the Project Customization window, click the **Set Traceability Notification Rules** link. The Set Traceability Notification Rules page opens.

2 Select **Active** to activate a traceability rule. This instructs Quality Center to flag the entity when the associated entity changes.

3 Select **E-mail** to instruct Quality Center to send notification e-mail to the specified user when the associated entity changes.

4 Click **Save** to save your changes.

14

Generating Workflow Scripts

Quality Center provides script generators to enable you to perform commonly needed customizations on the Defects module dialog boxes.

For information on writing workflow scripts to customize the user interface and to control user actions in any Quality Center module, see Part III, "Workflow Customization".
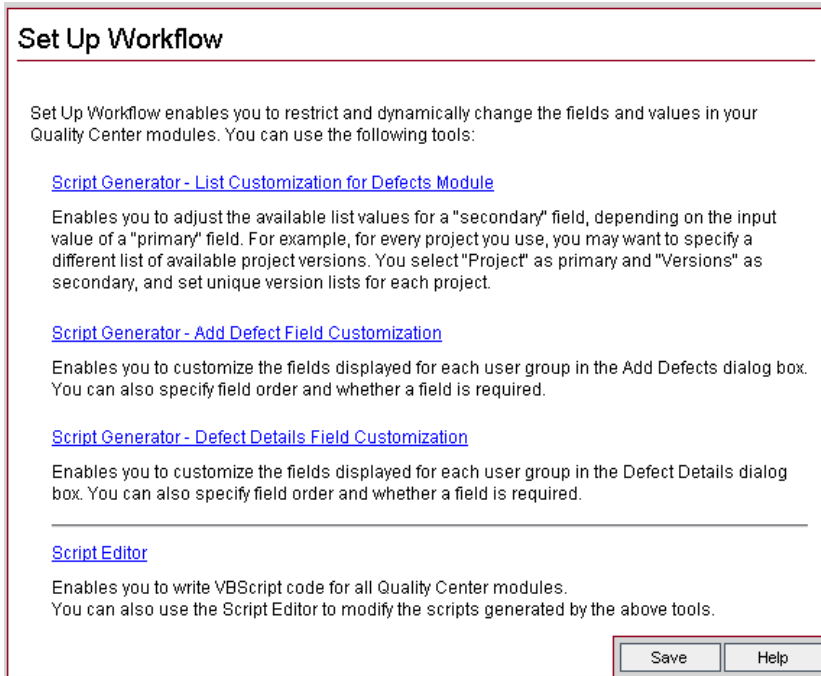
This chapter describes the following:

➤ About Generating Workflow Scripts

➤ Customizing Defects Module Field Lists

➤ Customizing Defects Module Dialog Boxes

About Generating Workflow Scripts

The Set Up Workflow page provides links to script generators and a script editor. You can use the script generators to perform customizations on the input fields of the Defects module dialog boxes. You can use the script editor to create scripts to control the workflow in any Quality Center module.

To open the Set Up Workflow page, click the **Set Up Workflow** link in the Project Customization window.

The Set Up Workflow page contains the following links:

➤ The **Script Generator - List Customization for Defects Module** link enables you to customize the field lists displayed for fields on the dialog boxes of the Defects module. For more information, see "Customizing Defects Module Field Lists" on page 191.

➤ The **Script Generator - Add Defect Field Customization** link enables you to modify the appearance of the Add Defect dialog box. For more information, see "Customizing Defects Module Dialog Boxes" on page 194.

➤ The **Script Generator - Defect Details Field Customization** link enables you to modify the appearance of the Defect Details dialog box. For more information, see "Customizing Defects Module Dialog Boxes" on page 194.

➤ The **Script Editor** link enables you to write VBScript code to customize the Quality Center workflow in any module. You place your code in the appropriate Quality Center event so that the script is triggered when the relevant user action takes place. You can also use the script editor to modify scripts created by the script generators. For more information, see Chapter 15, "Workflow Customization at a Glance".

Customizing Defects Module Field Lists

A field list is a list of values displayed in a drop-down list, from which the user can choose a value for the field.

You can specify that a different field list be used for a Defects module field, depending on the value of another field. For example, you can set the **Detected in Versions** list to change depending on the value in the **Project** field.

Note: This script generator can be used to customize field lists in the Defects module only.

To customize a field list, you must define the following rules:

➤ **Primary/Secondary Rule:** Select the primary and secondary fields. When a primary field value is changed, the list of values in the secondary field changes automatically. For example, you could select **Project** as the primary field and **Detected in Versions** as the secondary field.

➤ **List Match Rule:** Select the list that you want to display in the secondary field for each value of the primary field.

Note: When workflow customization has been used to change a list of values for a field that has transition rules defined, the field may only be modified in a way that satisfies both the workflow script and the transition rules. For more information, see "Setting Transition Rules" on page 146.

To customize a field list:

1 In the Project Customization window, click the **Set Up Workflow** link. The Set Up Workflow page opens.

2 Click the **Script Generator - List Customization for Defects Module** link. The Script Generator - List Customization dialog box opens.
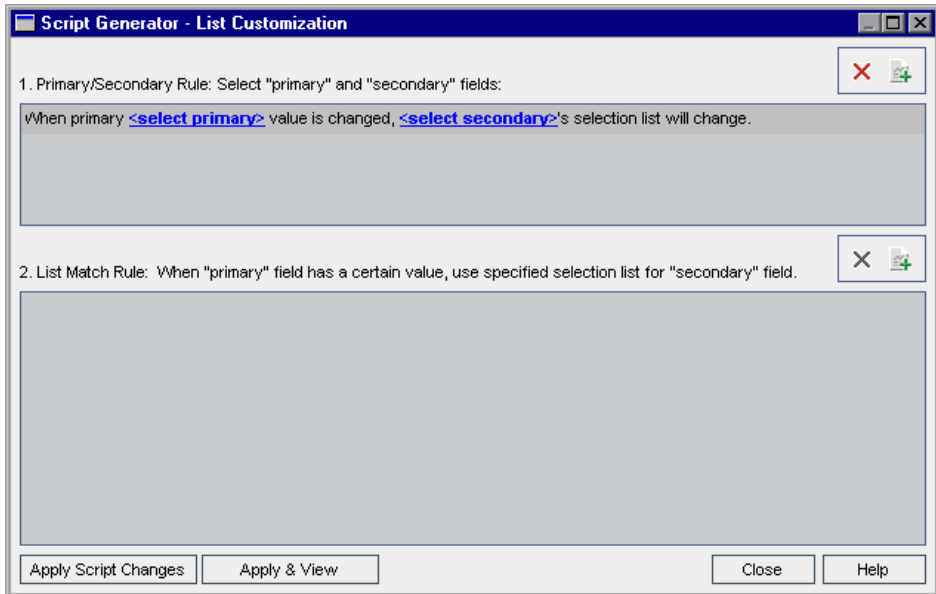
3 Under **Primary/Secondary Rule**, select the primary field and the secondary field:

➤ To set a rule, click **<select primary>** and select a field name. Click **<select secondary>** and select a field name.

➤ To add a new rule, click the **Add Primary/Secondary Rule** button. Select field names for **<select primary>** and **<select secondary>**.

➤ To delete a rule, select the rule and click the **Delete Primary/Secondary Rule** button. Click **Yes** to confirm.

4 Under **Primary/Secondary Rule**, select the primary/secondary rule for which you want to set list match rules.
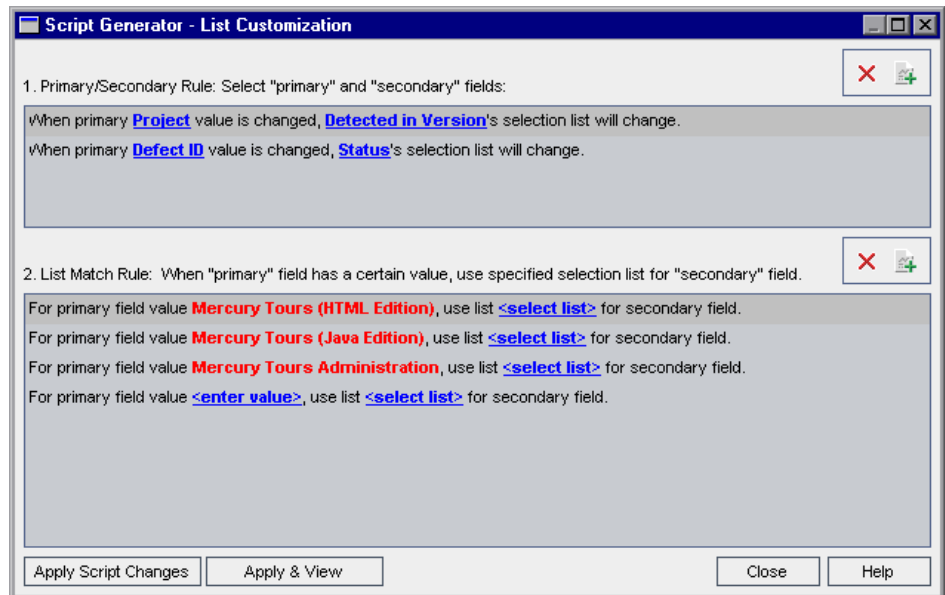
5 Under **List Match Rule**, select the field list to be used in the secondary field for specific values entered into the primary field:

➤ To set a rule for a defined primary field value, click **<select list>** and select a list name.

➤ To set a rule for an undefined primary field value, click **<enter value>** and type a primary field value. Press **Enter**. Click **<select list>** and select a list name.

➤ To add a new list match rule, click the **Add List Match Rule** button. Click **<enter value>** and type a primary field value. Click **<select list>** and select a list name.

➤ To delete a list match rule, select the rule and click the **Delete List Match Rule** button. Click **Yes** to confirm.

6 To save your changes, do one of the following:

➤ Click the **Apply Script Changes** button to save your changes and close the script generator.

➤ Click the **Apply & View** button to save your changes and view the generated script in the Script Editor.

If you use the Script Editor to modify a script that was created by a script generator, your modifications are overwritten the next time you run that script generator. It is recommended that you rename the generated script before you modify it. For more information on the Script Editor, see Chapter 16, "Working with the Workflow Script Editor".

Customizing Defects Module Dialog Boxes

You can modify the appearance of the Add Defect and Defect Details dialog boxes by setting different fields to be visible for each user group. You can also sort the order in which the fields are displayed on the dialog box for each user group.

For example, you may want the **Assigned To** and **Priority** fields to appear only for a user that has developer privileges. Also, you can customize the **Assigned To** field so that it is displayed before the **Priority** field for this user group.

To perform a customization for all user groups, you can use the script editor to write a script. For more information, see "Example: Customizing a Defects Module Dialog Box" on page 253.

Note: These script generators can be used to customize dialog boxes in the Defects module only.

To customize Defects module dialog boxes by user group:

1 In the Project Customization window, click the **Set Up Workflow** link. The Set Up Workflow page opens.

2 To modify the appearance of the Add Defect dialog box, click the **Script Generator - Add Defect Field Customization** link. The Script Generator - Add Defect Field Customization dialog box opens.
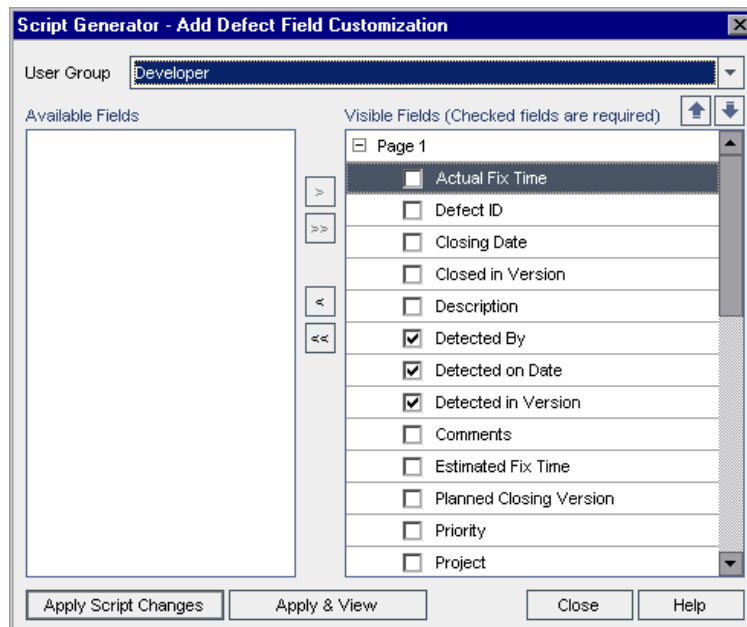
To modify the appearance of the Defect Details dialog box, click the **Script Generator - Defect Details Field Customization** link. The Script Generator - Defect Details Field Customization dialog box opens.
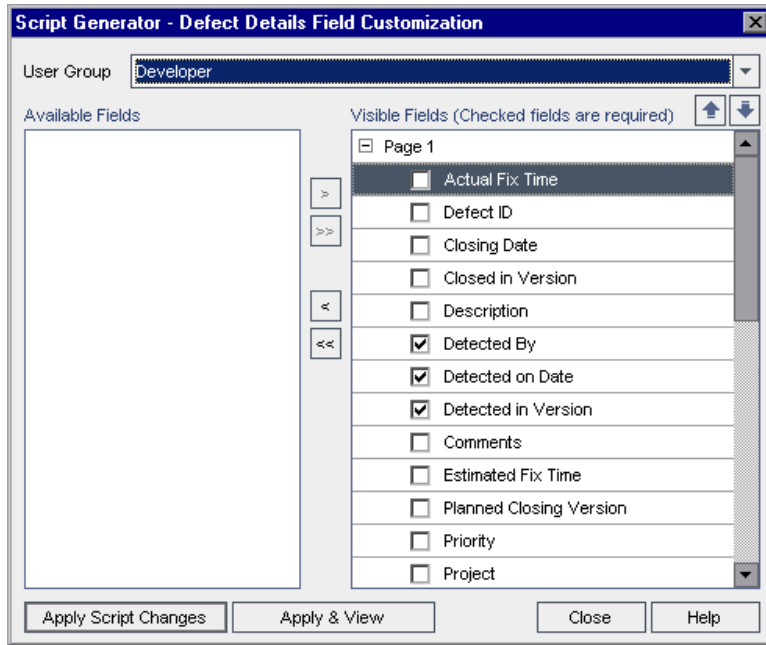
Available Fields contains the names of all the fields you can display. **Visible Fields** contains the names of the fields that can currently be seen by the selected user group, and their sorting priority.

3 From the **User Group** list, select the user group to which the customizations are to apply.

4 Choose field names and click the arrow buttons (> and <) to move a name between **Available Fields** and **Visible Fields**. Click the double arrow buttons (>> and <<) to move all the names from one list to the other. You can also drag the field names between lists.

5 In **Visible Fields**, to set a field as a required field, select the check box next to it. For a required field, a value is mandatory. Its title is displayed in red in the Add Defect or Defect Details dialog box.

6 You can set the order in which fields are displayed for the selected user group by using the up and down arrows. You can also drag the field names up or down.

7 You can set the Add Defect and Defect Details dialog boxes to include one or more input pages. By default, all fields are displayed on one page. Use the up and down arrows to move fields to the appropriate page.

8 To save your changes, do one of the following:

➤ Click the **Apply Script Changes** button to save your changes and close the script generator.

➤ Click the **Apply & View** button to save your changes and view the generated script in the Script Editor.

If you use the Script Editor to modify a script that was created by a script generator, your modifications are overwritten the next time you run that script generator. It is recommended that you rename the generated script before you modify it. For more information on the Script Editor, see Chapter 16, "Working with the Workflow Script Editor".

Part III

Workflow Customization

15

Workflow Customization at a Glance

You can write workflow scripts to customize the Quality Center user interface, and to control the actions that users can perform.

To customize workflow:

1 In the Project Customization window, click the **Set Up Workflow** link. The Set Up Workflow page opens.

Set Up Workflow

Set Up Workflow enables you to restrict and dynamically change the fields and values in your Quality Center modules. You can use the following tools:

Script Generator - List Customization for Defects Module

Enables you to adjust the available list values for a "secondary" field, depending on the input value of a "primary" field. For example, for every project you use, you may want to specify a different list of available project versions. You select "Project" as primary and "Versions" as secondary, and set unique version lists for each project.

Script Generator - Add Defect Field Customization

Enables you to customize the fields displayed for each user group in the Add Defects dialog box. You can also specify field order and whether a field is required.

Script Generator - Defect Details Field Customization

Enables you to customize the fields displayed for each user group in the Defect Details dialog box. You can also specify field order and whether a field is required.

Script Editor

Enables you to write VBScript code for all Quality Center modules.
You can also use the Script Editor to modify the scripts generated by the above tools.

| Save | Help |

2 To perform commonly-needed customization of a Defects module dialog box, click the appropriate **Script Generator** link on the Set Up Workflow page. You need not be familiar with VBScript, or with Quality Center events and objects to use this feature. For more information, see Chapter 14, "Generating Workflow Scripts".

3 To write or modify scripts by entering code into the appropriate event procedures, open the Script Editor. To create workflow scripts, you must be familiar with VBScript. You can open the Script Editor either from a script generator or directly:

➤ To write a script that is similar to a script created by a script generator, click the relevant **Script Generator** link and set the customization you want to perform. Click the **Apply & View** button on the script generator dialog box. The Script Editor opens to display the scripts that were generated.

➤ To create your own scripts, click the **Script Editor** link. The Script Editor opens to display a Scripts Tree that lists the existing event procedures.

For more information on the Script Editor, see Chapter 16, "Working with the Workflow Script Editor".

4 Decide which Quality Center event should trigger your script. You must place your code in the procedure of the appropriate module and event so that it is invoked for the relevant user action. For more information, see Chapter 17, "Workflow Event Reference".

5 Decide which Quality Center objects your script must access. Your script performs customizations based on information obtained from the relevant objects. You customize the workflow by using the methods and properties of the objects. For more information, see Chapter 18, "Workflow Object Reference".

6 Examine the sample scripts to find one that can be adapted for your use. Sample scripts are provided in this guide and in the TestDirector for Quality Center Knowledge Base. Scripts generated by the workflow script generators can also be used as a basis for your scripts.

➤ For examples of common customizations that can be performed by using workflow scripts, see Chapter 19, "Workflow Examples".

➤ For an index to Knowledge Base articles that provide examples of workflow scripts, refer to the TestDirector for Quality Center Knowledge Base (http://support.mercury.com) and search for Problem ID 29497.

16

Working with the Workflow Script Editor

You can use the Script Editor to create workflow scripts to customize the user interface, and to control user actions.

This chapter describes the following:

➤ About Working with the Workflow Script Editor

➤ The Script Editor

➤ Creating a Workflow Script

➤ Adding a Button to a Toolbar

➤ Setting the Properties of the Script Editor

About Working with the Workflow Script Editor

You can use the Script Editor to create workflow scripts and to add a toolbar button to the window of a Quality Center module.

The Script Editor dialog box contains two tabs:

➤ **Script Editor tab:** You use the Script Editor tab to create and edit workflow scripts. The Script Editor assists you in placing your code in the appropriate Quality Center event procedure. For more information on using the Script Editor, see "Creating a Workflow Script" on page 209.

➤ **Toolbar Button Editor tab:** You use the Toolbar Button Editor tab to add a toolbar button to the window of a Quality Center module. For more information, see "Adding a Button to a Toolbar" on page 212.

The Script Editor

You can use the Script Editor to modify scripts that have been generated by a script generator, or to create a user-defined workflow script. For information on opening the Script Editor, see Chapter 15, "Workflow Customization at a Glance".
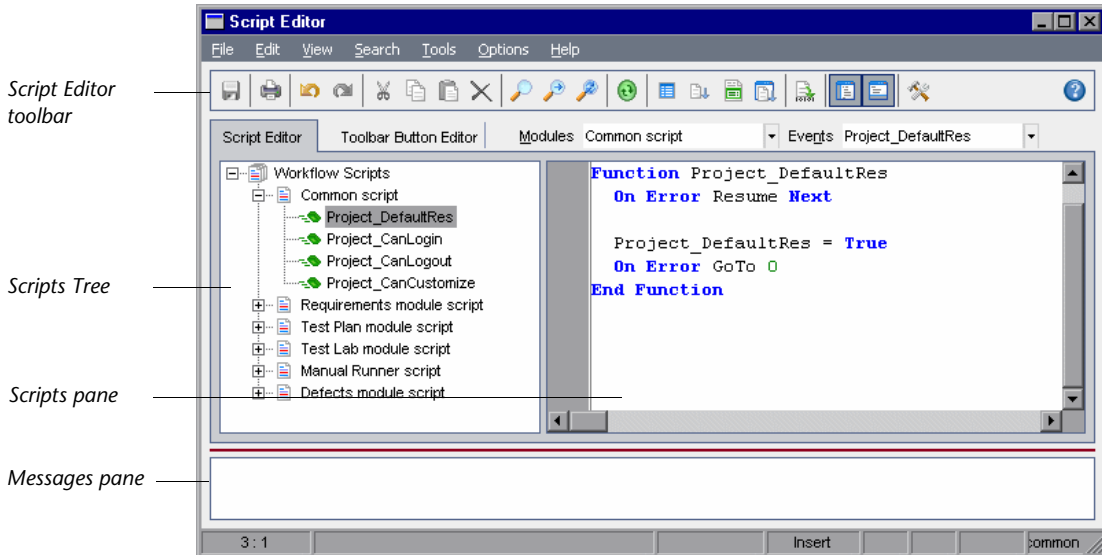
The Script Editor tab contains the following elements:

➤ The *Script Editor toolbar* contains buttons used when creating scripts. For more information, see "Understanding the Script Editor Commands" on page 207.

➤ The *Scripts Tree* lists the event procedures to which you can add code. The event procedures are grouped by the module in which they are triggered. For more information, see Chapter 17, "Workflow Event Reference".

➤ The *Scripts pane* displays the code of the selected event procedure. To create or modify a script, you add VBScript code to the event procedure. For more information, see "Creating a Workflow Script" on page 209.

➤ The *Messages pane* displays any syntax errors encountered when you save or validate a script.

Understanding the Script Editor Commands

The Script Editor toolbar, menu bar, and right-click menu contain the following buttons and menu commands:

Save: Saves the changes made to scripts in the selected module.

Print: Prints the displayed script.

Undo: Reverses the last command or deletes the last entry you typed.

Redo: Reverses the action of your last **Undo** command.

Cut: Removes the selected text and places it on the Clipboard.

Copy: Copies the selected text to the Clipboard.

Paste: Inserts the contents of the Clipboard at the insertion point.

Delete: Deletes the selected text.

Find: Searches for specified text in the scripts of the selected module.

Find Next: Finds the next occurrence of the text specified in the Find Text dialog box.

Replace: Replaces the specified text with replacement text.

Synchronize Tree with Script: Refreshes the Scripts Tree to reflect procedures you have added, deleted or renamed.

Field Names: Displays a list of field names in the project that you can insert into your script.

Code Complete: Displays a list of objects, properties, methods, or field names that you can insert into your script.

Code Template: Displays a list of templates for commonly used VBScript statements that you can insert into your script.

List Value: Opens the Select Value From List dialog box, to enable you to choose an item from a project list.

Syntax Check: Validates the syntax of your script and displays any messages in the Messages pane.

Show/Hide Scripts Tree: Displays or hides the Scripts Tree. If you have opened the Script Editor from a script generator, this is not available.

Show/Hide Messages Pane: Displays or hides the Messages pane.

Properties: Opens the Properties dialog box, enabling you to change the properties of the Script Editor. For more information, see "Setting the Properties of the Script Editor" on page 215.

Save All: To save script changes in all modules, choose **File** > **Save All**.

Revert to Saved: To return to a saved version of a module, select a changed module and choose **File** > **Revert to Saved**.

Select All: To select all text in the scripts pane, choose **Edit** > **Select All**.

Expand All: To expand all nodes in the Scripts Tree, choose **View** > **Expand All**.

Collapse All: To collapse all nodes in the Scripts Tree, choose **View** > **Collapse All**.

Go to Line Number: To jump to a specific line in the Script Editor, choose **Search** > **Go to Line Number**.

Clear Messages: To clear syntax messages displayed in the messages pane, choose **Tools** > **Clear Messages**.

Sort Field Names by Field Labels: When you choose the **Field Names** option, the Script Editor sorts the list by the field name used in the Quality Center database table (for example, **BG_BUG_ID**). To sort the fields by the field label (for example, Defect ID) right-click the script pane and choose **Sort Field Names by Field Labels**.

VBScript Home Page: To get help for the VBScript language, choose **Help** > **VBScript Home Page**.

Creating a Workflow Script

You use the Script Editor to add VBScript code to a Quality Center event procedure, or to create user-defined procedures that can be called from a Quality Center event procedure.

To create a workflow script:

1 Click the **Script Editor** link on the Set Up Workflow window. The Script Editor opens.
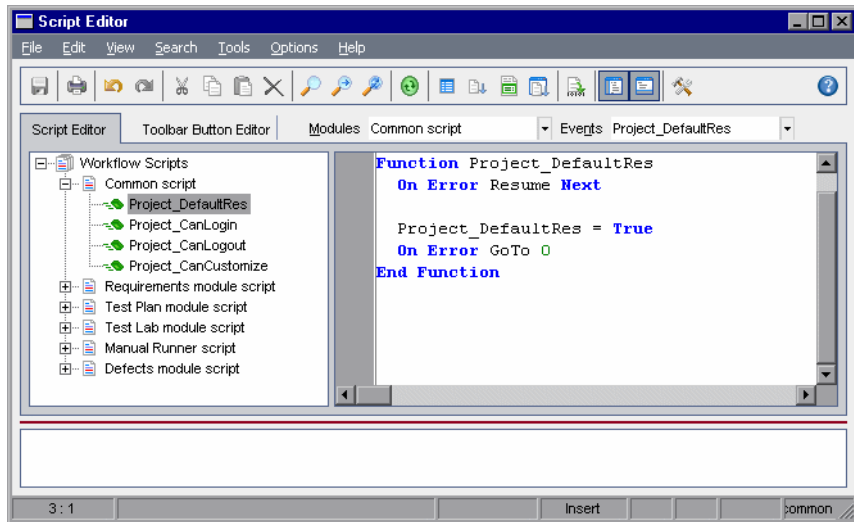
For more information on the Script Editor window, see "The Script Editor" on page 206.

2 Select a module name in the **Modules** list box to expand the node of the module for which you need to customize the workflow.

The Scripts Tree contains the **Common script** node in addition to the nodes for specific modules. When you create user-defined procedures that must be accessible from several modules, place them under the **Common script** node. To declare a global variable that can be used across all modules, declare the variable under the **Common script** node, outside of any function.

3 In the **Events** list box, select the event procedure to which you need to add code, depending on when you want your code to be triggered. The existing script for this event procedure is displayed in the Scripts pane.

For a description of Quality Center event procedures, see Chapter 17, "Workflow Event Reference".

4 Add your VBScript code lines to the script.

Note: A red indicator ● next to a module name in the Scripts Tree indicates that there are unsaved script changes in that module.

---

5 To use the code complete feature instead of typing in the names of Quality Center objects, properties, methods, and fields, place the insertion point at the location where you want to insert an object name and click the **Code Complete** button. For information about Quality Center objects, see Chapter 18, "Workflow Object Reference".

6 To use the code template feature instead of typing in commonly used VBScript statements, place the insertion point where you want to insert the code and click the **Code Template** button. Choose one of the following items from the code template list:

Template	Code Added to Script
FVal: Fields value access	Fields.Field("").Value
List: Quality Center list access	Lists.List()
IfAct: Action "switch" If Block	If ActionName = "" Then End IF
Act: Actions access	Actions.Action("")

Func: Function template	Function
	  On Error Resume Next
	
	  On Error GoTo 0
	End Function

Template	Code Added to Script

Sub: Sub Template	Sub
	  On Error Resume Next
	
	  On Error GoTo 0
	End Sub

Err: Error Handler	On Error Resume Next

7 To insert an item from a field list defined in the project, place the insertion point at the location where you want to add the item. Click the **List Value** button. In the **Lists** box of the Select Value From List dialog box, choose the name of the list. In the **List Items** box, select the list value.

8 To insert a Quality Center field name, place the insertion point at the location where you want to add the field name. Click the **Field Names** button. Select a name from the list of system and user-defined fields in the Quality Center project.

9 To validate the syntax of the script, click **Syntax Check**. Any messages are displayed in the Messages pane.

10 Click the **Save** button to save the script.

11 Close the Script Editor.

Adding a Button to a Toolbar

You can use the Toolbar Button Editor to define a toolbar button to be displayed on the window of a Quality Center module, or on the Manual Runner dialog box.

To add a button to a toolbar:

1 In the Script Editor, click the **Toolbar Button Editor** tab.
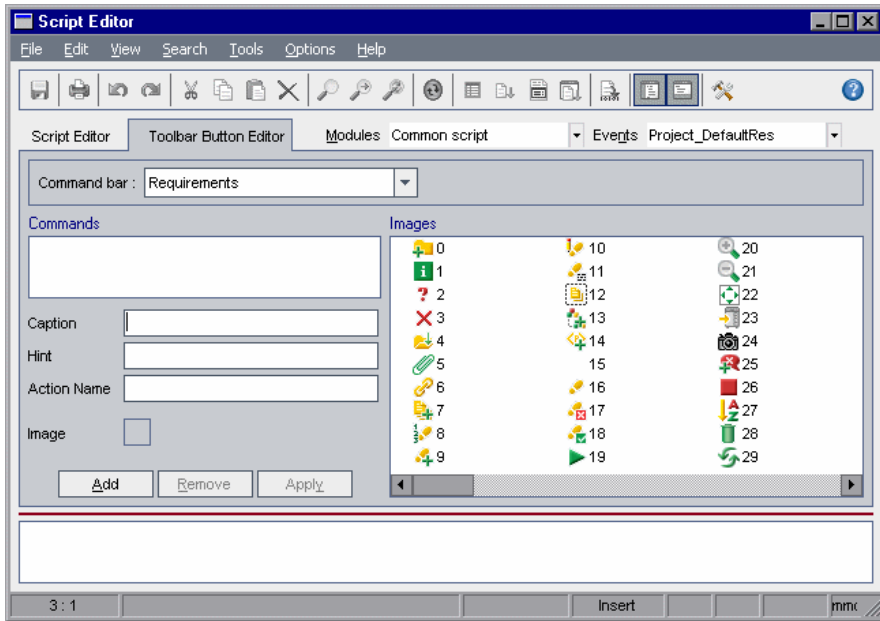
2 From the **Command bar** list, select the toolbar to which you want to add a button:

Option	Toolbar Location
Requirements	Requirements module window
TestPlan	Test Plan module window
TestLab	Test Lab module window
ManualRun	Manual Runner dialog box
Defects	Defects module window

3 Click **Add**. A default command name for the button is added to the **Commands** list.

4 In the **Caption** box, type a new command name for the button, or use the default name.

5 In the **Hint** box, type a tooltip for the button.

6 In the **Action Name** box, type a new action name for the button, or use the default name.

7 Under **Images**, select an icon for the button.

8 Click **Apply** to apply your changes.

9 To delete a button that you have created, select its command name in the Commands list, and click **Remove**.

10 Click the **Save** button to save the new button definition.

11 Click the **Script Editor** tab.

12 In the Scripts Tree of the Script Editor, select the _**ActionCanExecute** event procedure for the module you selected from the **Command bar** list.

13 In the procedure displayed in the scripts pane of the Script Editor, add statements to be performed if the user initiates an action with the action name you defined for the button. Set the return value to True or False.

For example, the following code opens a message box when the user clicks the Requirements_Action1 button on the tool bar of the Requirements module:

```
Function Requirements_ActionCanExecute(ActionName)
    On Error Resume Next
    Requirements_ActionCanExecute = True
        If ActionName = "Requirements_Action1" Then
            MsgBox "You clicked the Action1 button."
        End If
    On Error GoTo 0
End Function
```

For more information, see "Example: Adding Button Functionality" on page 267.

14 Click the **Save** button to save the script.

Setting the Properties of the Script Editor

You can customize the behavior of the Script Editor.

To set the properties of the Script Editor:

1 In the Script Editor, click the **Properties** button or choose **Options** > **Editor Properties**. The Properties dialog box opens.
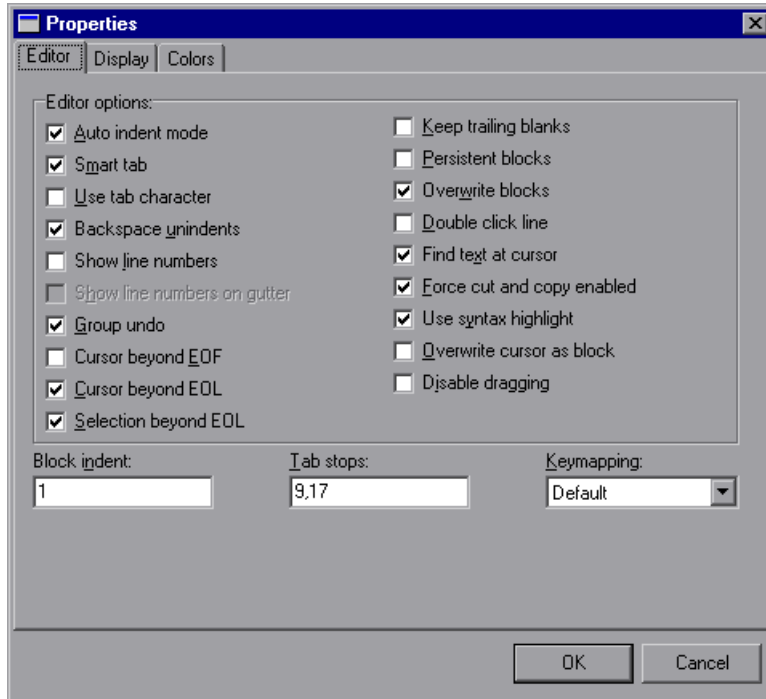
2 In the **Editor** tab, you can set the following options:

Option	Description
Auto indent mode	Places the cursor under the first non-blank character of the preceding non-blank line when you press **Enter**.
Smart tab	Tabs to the first non-blank character in the preceding non-blank line. If **Use tab character** is selected, this option is cleared.

Option	Description
Use tab character	Inserts a tab character. If cleared, inserts space characters. If **Smart tab** is selected, this option is cleared.
Backspace unindents	Aligns the insertion point to the previous indentation level when you press **Backspace**, if the cursor is on the first non-blank character of a line.
Show line numbers	Displays line numbers. If this option is selected, **Show line numbers on gutter** is enabled.
Show line numbers on gutter	Displays line numbers in the gutter instead of in the left margin. If **Show line numbers** is selected, this option is enabled.
Group undo	Reverses your last editing command and any subsequent editing commands of the same type, if you press **Alt+Backspace** or choose **Edit > Undo**.
Cursor beyond EOF	Enables you to place the insertion point after the last line of code.
Cursor beyond EOL	Enables you to position the cursor after the end of the line.
Selection beyond EOL	Enables you to select characters beyond the end of the line.
Keep trailing blanks	Keeps any blank spaces you have at the end of a line.
Persistent blocks	Keeps marked blocks selected, even when the cursor is moved using the arrow keys, until a new block is selected.
Overwrite blocks	Replaces a marked block of text with new text. If **Persistent Blocks** is also selected, text you enter is appended following the currently selected block.
Double click line	Highlights the line when you double-click any character in the line. If disabled, only the selected word is highlighted.

Option	Description
Find text at cursor	Places the text at the cursor into the **Text To Find** list box in the Find Text dialog box when you choose **Search** > **Find**.
Force cut and copy enabled	Enables the **Cut** and **Copy** commands, even when there is no text selected.
Use syntax highlight	Displays script elements according to colors and attributes defined in the **Display** tab and **Colors** tab.
Overwrite cursor as block	Controls the appearance of the caret when using the Overwrite mode.
Disable dragging	Disables dragging and dropping text.
Block indent	Specifies the number of spaces to indent a marked block.
Tab stops	Specifies the locations to which the cursor moves when you press **Tab**.
Keymapping	Sets the keyboard mappings in the Script Editor. Supports the following keyboard mappings: Default, Classic, Brief, Epsilon, and Visual Studio.

3 In the **Display** tab, you can set the following options:

Option	Description
Editor gutter	Enables you to set the visibility, width, color, and style of the gutter.
Editor margin	Enables you to set the visibility, width, color, style, and position of the right margin.
Use mono font	Displays only monospaced screen fonts, such as Courier, in the Editor font box.
Editor font	Lists the available text fonts.
Editor color	Lists the available background colors.
Size	Lists font sizes.

Option	Description
Use Read-Only Color	Enables you to select a color for displaying read-only text from the Read-Only Color box.
Draw Special Symbols	Sets special characters for displaying end-of-file, end-of-line, space, and tab characters.

4 In the **Colors** tab, you can set the following options:

Option	Description
Color SpeedSetting	Enables you to configure the Script Editor display using predefined color combinations.
Element	Specifies syntax highlighting for a particular code element.
Foreground color	Sets the foreground color for the selected code element.
Background color	Sets the background color for the selected code element.
Use defaults for	Displays the code element using default system colors for the foreground, background, or both.
Text attributes	Specifies format attributes for the code element.
Open	Loads a color scheme from your computer.
Save	Saves a color scheme to your computer.

17

Workflow Event Reference

You can write workflow scripts to customize the actions that Quality Center users can perform, and the fields that are available to users in dialog boxes. To write a workflow script, you add VBScript code to event procedures that are triggered by user actions.

This chapter describes the following:

➤ About Quality Center Events

➤ Naming Conventions for Quality Center Event Procedures

➤ Reference for Quality Center Events

About Quality Center Events

During a Quality Center user session, as the user initiates various actions, Quality Center triggers event procedures. You can place code in these procedures to customize the execution of the associated user actions.

The Script Editor lists the event procedures for each Quality Center module, and allows you to add your code to the appropriate procedure. For more information, see Chapter 16, "Working with the Workflow Script Editor".

The code you add to the event procedures can access Quality Center objects. For more information, see Chapter 18, "Workflow Object Reference".

Event procedures can be functions or subroutines:

➤ **Event functions:** These procedures are triggered by Quality Center to check whether the user's action should be performed. You can place code in these functions to determine whether Quality Center may execute the user's request. If your code returns a value of False, Quality Center does not proceed with the action.

For example, when a user clicks the **Submit** button on the Add Defect dialog box, Quality Center invokes the function Defects_Bug_CanPost before posting the defect to the database on the server. You can add code to the Defects_Bug_CanPost function to control whether Quality Center posts the defect. For example, you can ensure that a user cannot reject a defect without adding a comment. For example, see "Example: Object Validation" on page 261.

➤ **Event subroutines:** These procedures are triggered to give you a chance to perform actions when an event takes place.

For example, when a user opens the Add Defect dialog box, Quality Center invokes the subroutine Defects_Bug_New. You can add code to the Defects_Bug_New subroutine to perform actions that should be performed when a user opens the dialog box. For example, you can change the value of the **Detection Mode** field to BTW if the user is not in the QA Tester user group. For example, see "Example: Changing a Field Based on the User Group" on page 260.

Naming Conventions for Quality Center Event Procedures

The naming convention for an event procedure is as follows:

<module>_<entity>_<event>

Note that some event procedure names do not include an entity name.

Module

The module name indicates the Quality Center module or dialog box from which the procedure is triggered. **Module** can be one of the following:

Module	Module from Which the Procedure is Triggered
Project	These procedures are common to all modules. They are listed under the **Common script** node in the Script Editor.
Requirements	Requirements module
TestPlan	Test Plan module
TestLab	Test Lab module
ManualRun	Manual Runner dialog box
Defects	Defects module

Note: You cannot access global variables from the Manual Runner event procedures. A workaround for passing a value to or from Manual Runner is to use the **Settings** object. For example, see "Example: Storing the Last Values Entered" on page 273.

Entity

Entity can be one of the following:

Entity	Description
Req	Requirements module: Requirement data
Test	Test Plan module: Test data
DesignStep	Test Plan module: Design step data
TestSet	Test Lab module: Test set data
TestSetTests	Test Lab module: Test data
Bug	Defects module: Defect data
Step	Manual Runner dialog box: Test run step data
Run	Manual Runner dialog box: Test run data

Event

The **Event** can be either a function name or a subroutine name. The event names are listed in "Reference for Quality Center Events" on page 223.

Reference for Quality Center Events

This section contains an alphabetical reference of the Quality Center event functions and subroutines. It includes the event name, description, syntax, type (Function or Sub), the value returned by a function, and the entities for which the event procedure is available.

For information on the naming conventions for event procedures, see "Naming Conventions for Quality Center Event Procedures" on page 221.

The following event functions are available:

Function Name	When the Function is Triggered
"ActionCanExecute" on page 225	before performing a user action
"Attachment_CanDelete" on page 226	before deleting an attachment
"Attachment_CanOpen" on page 227	before opening an attachment
"Attachment_CanPost" on page 227	before posting an attachment
"CanAddTests" on page 228	before adding tests to a test set
"CanCustomize" on page 229	before opening Customization window
"CanDelete" on page 229	before deleting an object from the server
"CanLogin" on page 231	before a user logs in to the project
"CanLogout" on page 231	before a user logs out of the project
"CanPost" on page 232	before posting an object to the server
"CanRemoveTests" on page 232	before removing tests from a test set
"DefaultRes" on page 233	before resetting project defaults
"FieldCanChange" on page 235	before changing a field value
"GetDetailsPageName" on page 237	before displaying Defect Details dialog box
"GetNewBugPageName" on page 237	before displaying Add Defect dialog box

The following event subroutines are available:

Subroutine Name	When the Subroutine is Triggered
"AfterPost" on page 226	an object has been posted to the server
"Attachment_New" on page 228	an attachment is added
"DialogBox" on page 233	a dialog box is opened or closed
"EnterModule" on page 234	user switches modules
"ExitModule" on page 234	user exits a module
"FieldChange" on page 236	a field value changes
"MoveTo" on page 238	user changes focus
"MoveToSubject" on page 238	user clicks a subject in the test plan tree
"New" on page 239	an object is added
"RunTests" on page 239	user clicks **Run** in the Test Lab module
"RunTestSet" on page 240	user clicks **Run Test Set** in the Test Lab module
"RunTestsManually" on page 240	user clicks **Run** > **Run Manually** in the Test Lab module

ActionCanExecute

This event is triggered before Quality Center performs an action that has been initiated by the user, to check whether the action can be executed.

You can add code to this event procedure to perform actions when the user has initiated a particular action, or to prevent the action from being executed in specific cases. For example, see "Example: Controlling User Permissions" on page 266.

Syntax	<module>_**ActionCanExecute(ActionName)**
	where **ActionName** is the action that the user has initiated
Type	Function
Returns	True or False
Availability	• Project_ActionCanExecute
	• Requirements_ActionCanExecute
	• TestPlan_ActionCanExecute
	• TestLab_ActionCanExecute
	• Defects_ActionCanExecute
	• ManualRun_ActionCanExecute

AfterPost

This event is triggered after an object has been posted to the server.

Project fields should not be changed after they have been posted, because then the new value is not stored in the database.

Syntax	<module>_<entity>_**AfterPost**
Type	Sub
Availability	• Requirements_Req_AfterPost • TestPlan_Test_AfterPost • TestLab_TestSet_AfterPost • Defects_Bug_AfterPost • ManualRun_Step_AfterPost • ManualRun_Run_AfterPost

Attachment_CanDelete

This event is triggered before Quality Center deletes an attachment from the server, to check whether that attachment can be deleted.

Syntax	<module>_**Attachment_CanDelete(Attachment)** where **Attachment** is the **Attachment** interface. For more information, refer to the *Mercury Quality Center Open Test Architecture API Reference*.
Type	Function
Returns	True or False
Availability	• Requirements_Attachment_CanDelete • TestPlan_Attachment_CanDelete • TestLab_Attachment_CanDelete • Defects_Attachment_CanDelete • ManualRun_Attachment_CanDelete

Attachment_CanOpen

This event is triggered before Quality Center opens an attachment from the server, to check whether the attachment can be opened.

Syntax	<module>_**Attachment_CanOpen(Attachment)**
	where **Attachment** is the **IAttachment** interface. For more information, refer to the *Mercury Quality Center Open Test Architecture API Reference*.
Type	Function
Returns	True or False
Availability	• Requirements_Attachment_CanOpen
	• TestPlan_Attachment_CanOpen
	• TestLab_Attachment_CanOpen
	• Defects_Attachment_CanOpen
	• ManualRun_Attachment_CanOpen

Attachment_CanPost

This event is triggered before Quality Center posts an attachment to the server, to check whether the attachment can be posted.

Syntax	<module>_**Attachment_CanPost(Attachment)**
	where **Attachment** is the **IAttachment** interface. For more information, refer to the *Mercury Quality Center Open Test Architecture API Reference*.
Type	Function
Returns	True or False
Availability	• Requirements_Attachment_CanPost
	• TestPlan_Attachment_CanPost
	• TestLab_Attachment_CanPost
	• Defects_Attachment_CanPost
	• ManualRun_Attachment_CanPost

Attachment_New

This event is triggered when an attachment is added to Quality Center.

Syntax	<module>_**Attachment_New(Attachment)**
	where **Attachment** is the **IAttachment** interface. For more information, refer to the *Mercury Quality Center Open Test Architecture API Reference*.
Type	Sub
Availability	• Requirements_Attachment_New
	• TestPlan_Attachment_New
	• TestLab_Attachment_New
	• Defects_Attachment_New
	• ManualRun_Attachment_New

CanAddTests

This event is triggered before Quality Center adds tests to a test set, to check whether the specified tests can be added.

Syntax	<module>_<entity>_**CanAddTests(Tests_List)**
	where **Tests_List** is an array of Test IDs.
Type	Function
Returns	True or False
Availability	TestLab_TestSet_CanAddTests

CanCustomize

This event is triggered when a user attempts to open the Customization window, to check whether the specified user can customize the specified project.

Syntax	<module>_ **CanCustomize(DomainName, ProjectName, UserName)**
	where **DomainName** is the domain name, **ProjectName** is the project name, and **UserName** is the user name.
Type	Function
Returns	True or False
Availability	Project_CanCustomize

CanDelete

This event is triggered before Quality Center deletes an object from the server, to check if the object can be deleted.

It applies to the following objects: requirements, tests or subject folders (in the Test Plan module), test sets or test set folders (in the Test Set module), and defects. The syntax is different for different objects.

➤ For requirements and defects:

Syntax	<module>_<entity>_**CanDelete**
Type	Function
Returns	True or False
Availability	• Requirements_Req_CanDelete
	• Defects_Bug_CanDelete

➤ For tests or subject folders in the Test Plan module:

Syntax	<module>_<entity>_**CanDelete(IsTest, Entity)**
	where:
	• If **IsTest** is True, **Entity** refers to an ITest object. If **IsTest** is False, **Entity** refers to an ISubjectNode object. For more information on ITest and ISubjectNode, refer to the *Mercury Quality Center Open Test Architecture API Reference*.
	• **Entity** is the test or subject folder.
Type	Function
Returns	True or False
Availability	TestPlan_Test_CanDelete

➤ For test sets or test set folders in the Test Set module:

Syntax	<module>_<entity>_**CanDelete(IsTestSet, Entity)**
	where:
	• If **IsTestSet** is True, **Entity** refers to an ITestSet object. If **IsTestSet** is False, **Entity** refers to an ITestSetFolder object. For more information on ITestSet and ITestSetFolder, refer to the *Mercury Quality Center Open Test Architecture API Reference*.
	• **Entity** is the test set or test set folder.
Type	Function
Returns	True or False
Availability	TestLab_TestSet_CanDelete

CanLogin

This event is triggered to check whether the specified user can log in to the specified project.

Syntax	<module>_**CanLogin(DomainName, ProjectName, UserName)**
	where **DomainName** is the domain name, **ProjectName** is the project name, and **UserName** is the user name.
Type	Function
Returns	True or False
Availability	Project_CanLogin

CanLogout

This event is triggered to check whether the current user can log out of the current project.

Syntax	<module>_**CanLogout**
Type	Function
Returns	True or False
Availability	Project_CanLogout

CanPost

This event is triggered before Quality Center posts an object to the server, to check whether the object can be posted.

You can add code to this event procedure to prevent an object from being posted in specific cases. For example, see "Example: Object Validation" on page 261.

Syntax	<module>_<entity>_**CanPost**
Type	Function
Returns	True or False
Availability	• Requirements_Req_CanPost
	• TestPlan_Test_CanPost
	• TestLab_TestSet_CanPost
	• TestLab_TestSetTests_CanPost
	• Defects_Bug_CanPost
	• ManualRun_Step_CanPost
	• ManualRun_Run_CanPost

CanRemoveTests

This event is triggered to check whether the specified tests can be removed from a test set.

Syntax	<module>_<entity>_**CanRemoveTests (Tests_List)**
	where **Tests_List** is an array of Test IDs.
Type	Function
Returns	True or False
Availability	TestLab_TestSet_CanRemoveTests

DefaultRes

This event is triggered when a user attempts to reset the defaults for Quality Center events. If the function returns False, the defaults are not reset.

Syntax	<module>_**DefaultRes**
Type	Function
Returns	True or False
Availability	Project_DefaultRes

DialogBox

This event is triggered when a dialog box is opened or closed.

Syntax	<module>_**DialogBox(DialogBoxName, IsOpen)**
	where **DialogBoxName** is the name of the dialog box, and **IsOpen** indicates whether the dialog box is open.
Type	Sub
Availability	• Requirements_DialogBox
	• TestPlan_DialogBox
	• TestLab_DialogBox
	• Defects_DialogBox
	• ManualRun_DialogBox

EnterModule

This event is triggered when the user switches to this Quality Center module.

You can add code to this event procedure to perform an action whenever the user switches to the specified module. For example, see "Example: Detecting an Empty Password" on page 270.

Syntax	<module>_**EnterModule**
Type	Sub
Availability	• Requirements_EnterModule
	• TestPlan_EnterModule
	• TestLab_EnterModule
	• Defects_EnterModule
	• ManualRun_EnterModule

ExitModule

This event is triggered when the user exits the specified module.

Syntax	<module>_**ExitModule**
Type	Sub
Availability	• Requirements_ExitModule
	• TestPlan_ExitModule
	• TestLab_ExitModule
	• Defects_ExitModule
	• ManualRun_ExitModule

FieldCanChange

This event is triggered before Quality Center changes a field value, to determine whether the field can be changed.

You can add code to this event procedure to prevent a field from being changed in specific cases. For example, see "Example: Field Validation" on page 262.

Syntax	<module>_<entity>_**FieldCanChange(FieldName, NewValue)**
	where **FieldName** is the name of the field and **NewValue** is the name of the field value.
Type	Function
Returns:	True or False
Availability	• Requirements_Req_FieldCanChange
	• TestPlan_Test_FieldCanChange
	• TestPlan_DesignStep_FieldCanChange
	• TestLab_TestSet_FieldCanChange
	• TestLab_TestSetTests_FieldCanChange
	• Defects_Bug_FieldCanChange
	• ManualRun_Step_FieldCanChange
	• ManualRun_Run_FieldCanChange

The code for hiding a field that depends on another field should be placed in the FieldChange event procedure (not in the FieldCanChange event procedure).

FieldChange

This event is triggered when the value of the specified field changes.

Every change of value triggers the field change event when the field loses focus.

You can add code to this event procedure to perform an action when the value of a particular field is changed. For example, you can hide or display one field depending on the value the user enters into another field. For example, see "Example: Changing One Field Based on Another Field" on page 259.

Syntax	<module>_<entity>_**FieldChange(FieldName)**
	where **FieldName** is the name of the field.
Type	Sub
Availability	• Requirements_Req_FieldChange
	• TestPlan_Test_FieldChange
	• TestPlan_DesignStep_FieldChange
	• TestLab_TestSet_FieldChange
	• TestLab_TestSetTests_FieldChange
	• Defects_Bug_FieldChange
	• ManualRun_Step_FieldChange
	• ManualRun_Run_FieldChange

When a user changes a field value using the **Find** > **Replace** command, workflow events are not triggered. If restrictions implemented in workflow scripts are critical, consider disabling the Replace command for specific user groups, to ensure that your restrictions cannot be bypassed.

GetDetailsPageName

This event is triggered by Quality Center to retrieve the name of the Defect Details dialog box page (tab) that has the index number specified in PageNum.

You can add code to this event procedure to customize the tab names on the Defect Details dialog box. For example, see "Example: Changing Tab Names" on page 257.

Syntax	<module>_**GetDetailsPageName(PageName, PageNum)**
	where **PageName** is the default page name (for example, Page 1) and **PageNum** is the page number.
Type	Function
Returns	String containing the page name
Availability	Defects_GetDetailsPageName

GetNewBugPageName

This event is triggered by Quality Center to retrieve the name of the Add Defect dialog box page (tab) that has the index number specified in PageNum.

You can add code to this event procedure to customize the tab names on the Add Defect dialog box. For example, see "Example: Changing Tab Names" on page 257.

Syntax	<module>_**GetNewBugPageName(PageName, PageNum)**
	where **PageName** is the default page name (for example, Page 1) and **PageNum** is the page number.
Type	Function
Returns	String containing the page name
Availability	Defects_GetNewBugPageName

MoveTo

This event is triggered when the user changes focus from one object to another.

You can add code to this event procedure to perform actions when the user changes the focus. For example, see "Example: Presenting a Dynamic Field List" on page 263.

Syntax	<module>_<entity>_**MoveTo**
Type	Sub
Availability	• Requirements_Req_MoveTo
	• TestPlan_Test_MoveTo
	• TestPlan_DesignStep_MoveTo
	• TestLab_TestSet_MoveTo
	• TestLab_TestSetTests_MoveTo
	• Defects_Bug_MoveTo
	• ManualRun_Step_MoveTo

MoveToSubject

This event is triggered when the user moves to the specified subject in the test plan tree.

Syntax	<module>_**MoveToSubject(Subject)**
	where **Subject** is the **ISysTreeNode** interface. For more information, refer to the *Mercury Quality Center Open Test Architecture API Reference*.
Type	Sub
Availability	TestPlan_MoveToSubject

New

This event is triggered when an object is added to Quality Center.

You can add code to this event procedure to perform an action when a new object is added. For example, see "Example: Customizing a Defects Module Dialog Box" on page 253.

Syntax	<module>_<entity>_**New**
Type	Sub
Availability	• Requirements_Req_New • TestPlan_Test_New • TestPlan_DesignStep_New • TestLab_TestSet_New • Defects_Bug_New • ManualRun_Step_New

RunTests

This event is triggered when the user clicks the **Run** button to run tests in the Test Lab module.

Syntax	<module>_**RunTests(Tests)** where **Tests** is an array of Test IDs.
Type	Sub
Availability	TestLab_RunTests

RunTestSet

This event is triggered when the user clicks the **Run Test Set** button to run a test set in the Test Lab module.

Syntax	<module>_**RunTestSet(Tests)**
	where **Tests** is an array of Test IDs.
Type	Sub
Availability	TestLab_RunTestSet

RunTestsManually

This event is triggered when the user clicks the **Run** arrow and chooses **Run Manually** to run tests in the Test Lab module.

Syntax	<module>_**RunTestsManually(Tests)**
	where **Tests** is an array of Test IDs.
Type	Sub
Availability	TestLab_RunTestsManually

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Workflow Object Reference

Workflow scripts can reference Quality Center objects to obtain information and to change project values. This chapter lists the Quality Center objects that are available to workflow scripts.

This chapter describes the following:

➤ About Quality Center Objects

➤ Actions Object

➤ Action Object

➤ Fields Objects

➤ Field Object

➤ Lists Object

➤ TDConnection Object

➤ User Object

About Quality Center Objects

Workflow scripts can obtain information, make decisions based on that information, and change values in the project based on those decisions.

You can obtain information such as the user group to which the current user belongs, and the value of a field, by accessing objects such as the **User** object or the **Field** object.

Your script can change the value of a field, or field list. To do so, the script modifies the **Value** property or the **List** property of the appropriate **Field** object.

For information on the event procedures in which you place VBScript code to create workflow scripts, see Chapter 17, "Workflow Event Reference".

The following table lists the Quality Center objects that are available when you write a script.

Object	Description
Actions	The list of actions that are available for the following modules: Project, Requirements, Test Plan, Test Lab, Defects, and the Manual Runner dialog box. See "Actions Object" on page 243.
Action	The **Action** object is handled by the **Actions** object. See "Action Object" on page 244.
Fields	The following objects provide access to specific fields: • **Req_Fields:** the Requirements module. • **Test_Fields**: tests in the Test Plan module. • **DesignStep_Fields:** design steps in the Test Plan module. • **TestSet_Fields:** test sets in the Test Lab module. • **TestSetTest_Fields:** tests in the Test Lab module. • **Bug_Fields:** defects in the Defects module and the Manual Runner dialog box. • **Step_Fields:** steps in the Manual Runner dialog box. • **Run_Fields:** test runs in the Manual Runner dialog box. See "Fields Objects" on page 245.
Field	The **Field** object is handled by the **Fields** objects. See "Field Object" on page 246.
Lists	Includes the lists that are available in a Quality Center project. See "Lists Object" on page 248.
TDConnection	Provides access to open test architecture (OTA) objects. See "TDConnection Object" on page 249.
User	Includes the properties of the current user. This object is available in all modules. See "TDConnection Object" on page 249.

Note: In some cases, a function returns the object itself instead of the ID property of the object. For example, after the following statement has been executed, testsetf is a reference to a **TestSetFolder** object:
Set testsetf = **TestSet_Fields**("CY_FOLDER_ID")**.Value**.

For information on the Script Editor used to write workflow scripts, see Chapter 16, "Working with the Workflow Script Editor".

For each Quality Center object, this chapter lists the properties of the object. The list includes the property name, a description, and the data type of the property. It indicates whether the property is read-only (R) or whether your script can modify it (R/W).

Actions Object

You can use the **Actions** object to manipulate toolbar buttons, menu commands, and dialog boxes.

For example, to set the Add Defect dialog box to open automatically when a user enters the Defects module, place the following code in the Defects_EnterModule event procedure:

NewDefectAction=**Actions.Action**("BugAddAction1")
NewDefectAction.**Execute**

The **Actions** object has the following property:

Property	R/W	Type	Description
Action	R	Object	Allows access to every action in a list. The index for this property is the action name.

Action Object

You can use the **Action** object to verify whether a button or command is enabled, checked, or visible. You can also use it to execute actions.

For example, to set the Defect Details dialog box to open automatically when the user moves from one defect to another in the Defects Grid, place the following code in the Defects_Bug_MoveTo event procedure:

NewDefectAction=**Actions.Action**("DefectDetailsAction1")
NewDefectAction.**Execute**

To obtain the name of an action, add the following lines to the ActionCanExecute event procedure for the module, perform the action, and note the action name that is printed in the message:

```
Sub <module>_ActionCanExecute(ActionName)
    On Error Resume Next
    MsgBox "You have performed an action named: " & ActionName
    On Error GoTo 0
End Sub
```

This object has the following properties:

Property	R/W	Type	Description
Checked	R/W	Boolean	Indicates whether an action is checked in Quality Center.
Enabled	R/W	Boolean	Indicates whether an action is enabled. A disabled action cannot be invoked by the user, but can be invoked from the workflow script.
Visible	R/W	Boolean	Indicates whether an action is visible in Quality Center.

The **Action** object includes the following method:

Method	Description
Execute	Executes the action.

When a workflow script invokes an action using the **Execute** method of the **Action** object, the workflow events that would be triggered if a user initiated the action from a dialog box, are not triggered. Therefore, when using **Action.Execute**, you must ensure that you do not bypass the site policies you are enforcing with workflow events.

Fields Objects

You can use the following objects in workflow scripts to access the fields of Quality Center modules:

Object	Description
Req_Fields	Provides access to the fields of the Requirements module.
Test_Fields	Provides access to the fields of tests in the Test Plan module.
DesignStep_Fields	Provides access to the fields of the design steps in the Test Plan module.
TestSet_Fields	Provides access to the fields of the test sets in the Test Lab module.
TestSetTest_Fields	Provides access to the fields of the tests in the Test Lab module.
Bug_Fields	Provides access to the fields of the defects in the Defects module and the Manual Runner dialog box.
Step_Fields	Provides access to the fields of the steps in the Manual Runner dialog box.
Run_Fields	Provides access to the fields of the test runs in the Manual Runner dialog box.

For example, to set a certain property for all fields in the **Req_Fields** object, you can refer to each field by its ID number (**Req_Fields.FieldById**). To set all fields to be visible (**IsVisible**) in a dialog box, you can use the following code:

```
For i = 1 to Req_Fields.Count
    Req_Fields.FieldById(i).IsVisible = True
Next
```

These objects have the following properties:

Property	R/W	Type	Description
Count	R	Long	Returns the number of fields in the current object.
Field (FieldName)	R	Object	Accesses the fields by field name or field label.
FieldById (FieldID)	R	Object	Accesses the field by the field ID number.

Field Object

You can use the **Field** object to access the properties of an entity field.

For example, to display a message box when a user does not have permission to change a value in the **Status** field, you can use the following code:

```
Msgbox "You do not have permission to change <" & _
Bug_Fields.Field("BG_STATUS").FieldLabel & "> field."
```

The **Field** object has the following properties:

Property	R/W	Type	Description
FieldLabel	R	String	The displayed label of the field.
FieldName	R	String	The logical name of the field.
IsModified	R	Boolean	Specifies whether the value was modified.
IsMultiValue	R	Boolean	Specifies whether the field can contain multiple values from a lookup list.
IsNull	R	Boolean	Specifies whether the field value is absent.
IsReadOnly	R/W	Boolean	Specifies whether the field is read-only.
IsRequired	R/W	Boolean	Specifies whether a field value is required. This enables you to override field customization information. To modify the **IsRequired** property of a field, the **IsVisible** property must be True. Changes to **IsRequired** are ignored if the field is not visible. **Note:** This property cannot be used with the **Run_Fields** object to set the fields of a run as required.
IsVisible	R/W	Boolean	Specifies whether the field is displayed.
List	R/W	List	Sets or retrieves the field list attached to a field of type lookup list.
PageNo	R/W	Integer	Sets or retrieves the page (tab) on which the field is displayed in the Add Defect and Defect Details dialog boxes.
Value	R/W	Variant	Sets or retrieves the value of the field.
ViewOrder	R/W	Integer	Sets or retrieves the order in which the field appears in the Add Defect and Defect Details dialog boxes.

Lists Object

You can use the **Lists** object to limit field input to a specific list of values.

For example, to set the list in the **Planned Closing Version** field, depending on the **Project** field value, you can use the following code:

```
If Bug_Fields.Field("BG_PROJECT").Value = "Project 1" Then
    Bug_Fields.Field("BG_PLANNED_CLOSING_VER").List _
    = Lists("All Projects")
    ...
End If
```

For more information, see "Example: Presenting a Dynamic Field List" on page 263.

The **Lists** object has the following properties:

Property	R/W	Type	Description
List	R	ISysTreeNode	Accesses the Quality Center lists.

Note: When workflow customization has been used to change a list of values for a field that has transition rules defined, the field may only be modified in a way that satisfies both the workflow script and the transition rules. For more information, see "Setting Transition Rules" on page 146.

TDConnection Object

In workflow scripts, the only objects that are available are the objects of the module in which the code is written and a limited number of global objects. One of the global objects is the **TDConnection** object. **TDConnection** provides access to the open test architecture (OTA) objects.

You can use the **TDConnection** object to access objects from other modules, and to access general session parameters. You can access **TDConnection** properties in any procedure, from any module.

For more information about the **TDConnection** object, and a list of **TDConnection** properties, refer to the *Mercury Quality Center Open Test Architecture API Reference*.

For examples of using the **TDConnection** object in workflow scripts, see Chapter 19, "Workflow Examples".

User Object

You can access the **User** object to retrieve the user name of the current user and to check whether the user belongs to a particular user group. You can retrieve or modify the first and last name of the user.

For example, to have a message box open when the user has project administrator permissions, use the following code:

```
If User.IsInGroup("TDAdmin") Then
    MsgBox "The user " & User.FullName & _
    " has administrative permissions for this project."
End If
```

For more information, see "Example: Changing a Field Based on the User Group" on page 260, and "Example: Controlling User Permissions" on page 266.

To access user properties such as the user password, that cannot be accessed by the **User** object, you can use the **TDConnection** object of the Quality Center open test architecture (OTA). For more information, see "Example: Detecting an Empty Password" on page 270.

The **User** object has the following properties:

Property	R/W	Type	Description
FullName	R/W	String	Sets or retrieves the first and last name of the current user.
IsInGroup (GroupName)	R	Boolean	Checks whether or not the current user is a member of a predefined/user-defined group.
UserName	R	String	Returns the user name used when logging in to Quality Center.

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Workflow Examples

This chapter provides the following examples of workflow scripts:

About the Workflow Examples

The workflow examples presented in this chapter perform several types of task. The following table lists the examples that illustrate each type of task.

Workflow Task	See Examples
dialog box customization	Example: Customizing a Defects Module Dialog Box
	Example: Changing Tab Names
field value automation	Example: Adding a Template to a Memo Field
	Example: Changing One Field Based on Another Field
	Example: Changing a Field Based on the User Group
data validation	Example: Object Validation
	Example: Field Validation
dynamic field customization	Example: Presenting a Dynamic Field List
	Example: Changing Field Properties when a Field Changes
user permission control	Example: Controlling User Permissions
functionality	Example: Adding Button Functionality
error handling	Example: Error Handling
using OTA to obtain session parameters	Example: Obtaining the Session Context
	Example: Obtaining Session Properties
	Example: Detecting an Empty Password
sending mail	Example: Sending Mail
the **Settings** object	Example: Storing the Last Values Entered
copying values between modules	Example: Copying Field Values to Another Object

Example: Customizing a Defects Module Dialog Box

This example shows how you can customize the field layout and other field properties in the Add Defect dialog box. You can create similar code to arrange the layout of the Defect Details dialog box.

This example illustrates a solution that customizes field properties for all user groups. You can also use the script generators to customize the layout of the Defects module dialog boxes. If you use the script generators, you must perform customization separately for each user group. For information on these script generators, see "Customizing Defects Module Dialog Boxes" on page 194.

This example involves the following two procedures:

➤ SetFieldApp is a general purpose procedure that receives a field name and its properties as parameters, and assigns the properties to the field. See "SetFieldApp" on page 254.

➤ FieldCust_AddDefect calls SetFieldApp for each field in the Add Defects dialog box, to set the properties of the field. For some of the fields, FieldCust_AddDefect checks the user group to which the current user belongs, and customizes the field properties accordingly. A call to FieldCust_AddDefect is placed in the Defects_Bug_New event procedure. See "FieldCust_AddDefect" on page 254.

Note: To implement this example, you can run the **Add Defect Field Customization** script generator and then modify the resulting scripts.

➤ Rename the generated function WizardFieldCust_Add to FieldCust_AddDefect and modify it as necessary. (Before you modify a generated script, you must rename it so that it is not overwritten the next time you run the script generator.)

➤ The script generator places a call to WizardFieldCust_Add in the event procedure Defects_Bug_New. Change this to FieldCust_AddDefect.

➤ The function SetFieldApp is generated when you run the script generator. You do not need to rename or modify this function.

SetFieldApp

The function SetFieldApp receives a field name and its properties as parameters, and assigns the properties to the field.

The function assigns the following field properties: field visibility, whether the field is required, the number of the page (tab) on which the field should be displayed, and the view order (from left to right and from top to bottom).

Add a call to the function SetFieldApp in the user-defined function FieldCust_AddDefect.

```
Sub SetFieldApp(FieldName, Vis, Req, PNo, VOrder)
   On Error Resume Next
   With Bug_Fields(FieldName)
      .IsVisible = Vis
      .IsRequired = Req
      .PageNo = PNo
      .ViewOrder = VOrder
   End With
   PrintError "SetFieldApp"
   On Error GoTo 0
End Sub
```

FieldCust_AddDefect

The user-defined function FieldCust_AddDefect calls the function SetFieldApp.

The function first sets all fields to be invisible, not required, and to appear on page 100 at location 0. This ensures that if you add a new field using the **Customize Project Entities** link on the Project Customization window, the layout will not be changed.

Add a call to FieldCust_AddDefect in the Defects_Bug_New event procedure so that it will be triggered when a user adds a new defect:

```
Sub Defects_Bug_New
   FieldCust_AddDefect
End Sub
```

First, the code handles the fields that are common to all user groups. It uses conditional statements for the fields that will appear in the dialog box only for specific user groups, or that will have different properties for different users.

```
Sub FieldCust_AddDefect
    On Error Resume Next
    For i= 0 To Bug_Fields.Count
        SetFieldApp Bug_Fields.FieldByID(i), False, False, 100, 0
    Next

    ViewNum = 0
    PageNum = 0

    SetFieldApp "BG_BUG_ID", True, True, PageNum, ViewNum
    ViewNum = ViewNum + 1
    SetFieldApp "BG_DESCRIPTION", True, False, PageNum, ViewNum
    ViewNum = ViewNum + 1
    SetFieldApp "BG_SUMMARY", True, True, PageNum, ViewNum
    ViewNum = ViewNum + 1
    SetFieldApp "BG_DETECTED_BY", True, True, PageNum, ViewNum
    ViewNum = ViewNum + 1
    SetFieldApp "BG_DETECTION_DATE", True, True, PageNum, ViewNum
    ViewNum = ViewNum + 1
    SetFieldApp "BG_DETECTION_VERSION", True, True, PageNum, _
    ViewNum
    ViewNum = ViewNum + 1
    SetFieldApp "BG_SEVERITY", True, True, PageNum, ViewNum
    ViewNum = ViewNum + 1
    SetFieldApp "BG_PRIORITY", True, True, PageNum, ViewNum
    ViewNum = ViewNum + 1
    SetFieldApp "BG_PROJECT", True, False, PageNum, ViewNum
    ViewNum = ViewNum + 1
    SetFieldApp "BG_REPRODUCIBLE", True, False, PageNum, ViewNum
    ViewNum = ViewNum + 1
    SetFieldApp "BG_STATUS", True, False, PageNum, ViewNum
    ViewNum = ViewNum + 1
```

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' Now handle fields that are different for different user groups

```
    If User.IsInGroup("Developer") Then
        SetFieldApp "BG_PLANNED_CLOSING_VERSION", True, False, _
        PageNum, ViewNum
        ViewNum = ViewNum + 1
        SetFieldApp "BG_PLANNED_FIX_TIME", True, False, PageNum, _
        ViewNum
        ViewNum = ViewNum + 1
    End If

    If User.IsInGroup("QATester") Then
        PageNum = PageNum + 1
        SetFieldApp "BG_USER_01", True, False, PageNum, ViewNum
        ViewNum = ViewNum + 1
        SetFieldApp "BG_USER_02", True, False, PageNum, ViewNum
        ViewNum = ViewNum + 1
    End If

    SetFieldApp "BG_ACTUAL_FIX_TIME", True, False, PageNum, _
    ViewNum
    ViewNum = ViewNum + 1

    :

    PrintError "FieldCust_AddDefect"
    On Error GoTo 0
End Sub
```

Example: Changing Tab Names

You can change the names of the tabs on the Add Defect dialog box. This example sets the tabs to General, Environments, and Business Case.

Add the following code to the Defects_GetNewBugPageName event procedure, which is triggered before Quality Center opens the Add Defect dialog box. To change the tab names on the Defect Details dialog box, add similar code to the event procedure Defects_GetDetailsPageName.

```
Function Defects_GetNewBugPageName(PageName, PageNum)
    On Error Resume Next
    Select case PageNum
        case "1"
            Defects_GetNewBugPageName="General"
        case "2"
            Defects_GetNewBugPageName="Environments"
        case else
            Defects_GetNewBugPageName="Business Case"
    End Select
    PrintError "Defects_GetNewBugPageName"
    On Error GoTo 0
End Function
```

Example: Adding a Template to a Memo Field

You can use workflow scripts to add a default template to a memo field. This example adds text to a memo field called **Business Case** to display the following template:
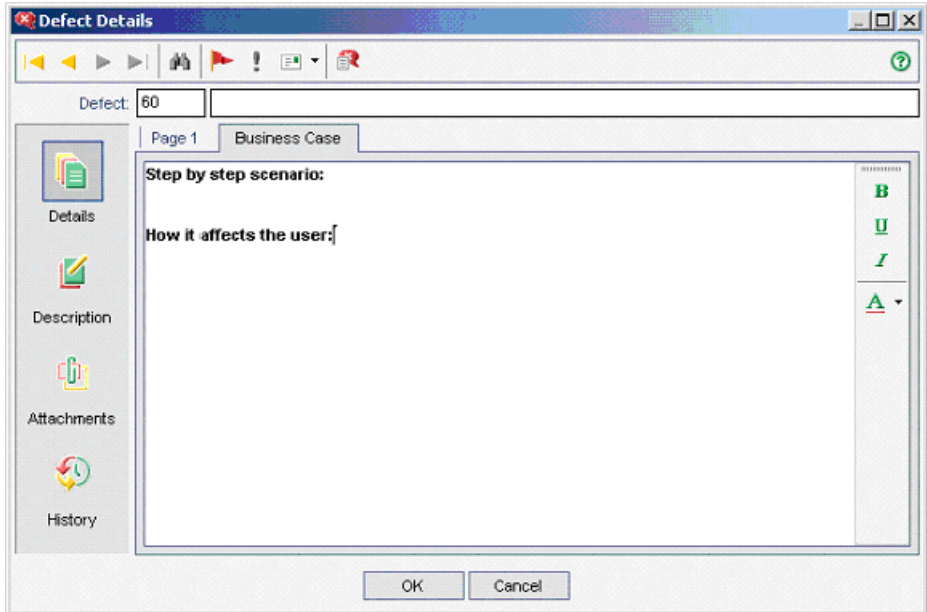
Perform this customization by placing the HTML code for the text into the **BG_USER_25** field when a defect is added. This example assumes that the user-defined field **BG_USER_25** is used to store a business case string.

Add the code to the Defects_Bug_New event procedure, which is triggered when a user adds a new defect.

```
Sub Defects_Bug_New
    On Error Resume Next
    Bug_Fields("BG_USER_25").value = _
    "<html><body><b>Step by step scenario:</b>" & _
    "<br><br><br><b>How it affects the user:</b></body></html>"
    PrintError "Defects_Bug_New"
    On Error GoTo 0
End Sub
```

Example: Changing One Field Based on Another Field

This example demonstrates how you can change a field value based on the value entered into another field.

For example, you can cause defects to be assigned to user **alex_qc** when UI Suggestion is entered into the **Category** field, and to user **alice_qc** when Security Issues is entered.

The example assumes that the user-defined field **BG_USER_05** is used to store the category. When the **Category** field is changed in the Defects module, the **BG_RESPONSIBLE** field is assigned the appropriate value.

Add the code to the Defects_Bug_FieldChange event procedure so that it is triggered when a user changes a field value in the Defects module.

```
Sub Defects_Bug_FieldChange(FieldName)
    On Error Resume Next
    If FieldName = "BG_USER_05" then
        Select case Bug_Fields("BG_USER_05").Value
        case "UI Suggestion"
            Bug_Fields("BG_RESPONSIBLE").value="alex_qc"
        case "Security Issue"
            Bug_Fields("BG_RESPONSIBLE").value="alice_qc"
        End Select
    End If
    PrintError "Defects_Bug_FieldChange"
    On Error GoTo 0
End Sub
```

Example: Changing a Field Based on the User Group

This example demonstrates how you can change a field value according to the user group of the user entering the defect.

In this example, the user-defined field **BG_USER_01** is a detection mode field in which the user who detected the defect can enter the way in which it was discovered. Possible values are Formal testing, Informal testing, and BTW.

The example sets the value of the detection mode field to BTW when a defect is opened by a user who is not in the QA Tester group.

Add the code to event procedure Defects_Bug_New, so that it is triggered when a defect is added.

```
Sub Defects_Bug_New
    On Error Resume Next
    If not User.IsInGroup("QATester") then
        Bug_Fields("BG_USER_01").Value = "BTW"
    End If
    PrintError "Defects_Bug_New"
    On Error GoTo 0
End Sub
```

Example: Object Validation

This example demonstrates how you can perform validations of all fields by using the CanPost event procedure. For example, this code segment ensures that a user cannot reject a defect without adding a comment.

In this example, a user may not post a defect where the defect status (**BG_STATUS**) has been changed to Rejected unless some explanatory text has been entered in the **R&D Comment** field (**BG_DEV_COMMENTS**).

Add the code to the Defects_Bug_CanPost event procedure so that the check is performed when the user attempts to submit the defect.

```
Function Defects_Bug_CanPost
    On Error Resume Next
    If Bug_Fields("BG_STATUS").IsModified and _
    Bug_Fields("BG_STATUS").Value = "Rejected" and _
    not Bug_Fields("BG_DEV_COMMENTS").IsModified then
        Defects_Bug_CanPost = False
        msgbox "You must enter a comment when rejecting a defect."
    Else
        Defects_Bug_CanPost = True
    End If
    PrintError "Defects_Bug_CanPost"
    On Error GoTo 0
End Function
```

Example: Field Validation

This example demonstrates how to validate a single field value. For example, the following code segment shows how you can ensure that a user in a specific group cannot lower the priority of a defect.

In this example, if the user is in the QATester group and the **BG_PRIORITY** field is being modified, the new value of the **BG_PRIORITY** field cannot be lower than the current value.

This example assumes that in the **Priority** field list for the project, lower priorities come first when the values are sorted in ascending order. For example, the list meets this requirement if the elements are as follows: 1-Low, 2-Medium, 3-High.

Add the code to the Defects_Bug_FieldCanChange event procedure so that it is triggered when the user attempts to change a field value in the Defects module.

```
Function Defects_Bug_FieldCanChange(FieldName, NewValue)
    On Error Resume Next
    If User.IsInGroup("QATester") and FieldName ="BG_PRIORITY" Then
        If NewValue < Bug_Fields("BG_PRIORITY").Value then
            Defects_Bug_FieldCanChange = False
            msgbox "You do not have permission to lower defect priority."
        Else
            Defects_Bug_FieldCanChange = True
        End If
    End If
    PrintError "Defects_Bug_FieldCanChange"
    On Error GoTo 0
End Function
```

Example: Presenting a Dynamic Field List

This example demonstrates how you can present a different field list in a field, depending on the value of another field.

The user-defined function SW_SetLists_Environment checks the value of the **Environment Specification** field and assigns the appropriate field list to the **Environment Type** field.

This example assumes that the field lists have been defined in the project. For more information, see "Customizing Project Lists" on page 175.

Note: To use workflow scripts to change or create lists that can be assigned to fields, you must use the open test architecture (OTA) interface.

Add code to the Defects_Bug_MoveTo event procedure so that the user-defined function SW_SetLists_Environment is called when the user changes focus in the defects module.

```
Sub Defects_Bug_MoveTo()
    On Error Resume Next
    SW_SetLists_Environment
    PrintError "Defects_Bug_MoveTo"
    On Error GoTo 0
End Sub
```

Add code to the Defects_Bug_FieldChange event procedure so that the user-defined function SW_SetLists_Environment is called when a user changes the value of the **Environment Type** field in the Defects module.

```
Sub Defects_Bug_FieldChange(FieldName)
    On Error Resume Next
    If FieldName = "BG_USER_01" then
        SW_SetLists_Environment
    End If
    PrintError "Defects_Bug_FieldChange"
    On Error GoTo 0
End Sub
```

The user-defined function SW_SetLists_Environment checks the value of the **Environment Specification** field (**BG_USER_02**) and assigns the appropriate field list to the **Environment Type** field (**BG_USER_01**).

```
Sub SW_SetLists_Environment()
    Dim listName
    On Error Resume Next
    Select Case Bug_Fields("BG_USER_01").Value
    Case "Browser"
        listName = "Browsers"
    Case "Database Type"
        listName = "Database Type"
    Case "Operating System"
        listName = "Platform"
    Case "Web Server"
        listName = "Web Server"
    Case Else
        listName = "Environment Specification"
    End Select
    Bug_Fields("BG_USER_02").List = Lists(listName)
    PrintError ("Set Environment List")
    On Error GoTo 0
End Sub
```

Example: Changing Field Properties when a Field Changes

This example demonstrates how you can change the properties of a field when a different field is changed.

In this example, if the status of the defect (**BG_STATUS**) is changed to Closed, the user must provide a value in the field **Closed in Build** (**BG_CLOSING_VERSION**).

Add the code to the Defects_Bug_FieldChange event procedure, to make the **Closed in Build** field a required field if the status is changed to Closed.

```
Sub Defects_Bug_FieldChange(FieldName)
    On Error Resume Next
    If FieldName= "BG_STATUS" and _
    Bug_Fields("BG_STATUS").value="Closed" then
        Bug_Fields("BG_CLOSING_VERSION").IsRequired=True
    End If
    PrintError "Defects_Bug_FieldChange"
    On Error GoTo 0
End Sub
```

Example: Controlling User Permissions

This example demonstrates how you can prevent members of specific user groups from performing an action.

The code allows a user to replace a defect field value only if the user belongs to the Admin user group.

Add the code to the Defects_ActionCanExecute event procedure so that the check is performed when a user attempts to execute an action.

```
Function Defects_ActionCanExecute(ActionName)
    On Error Resume Next
    If ActionName = "BugReplaceAction1" _
        And Not User.IsInGroup("Admin") then
        Defects_ActionCanExecute = False
        msgbox "You do not have permission to perform this action"
    Else
        Defects_ActionCanExecute = True
    End If
    PrintError "Defects_ActionCanExecute"
    On Error GoTo 0
End Function
```

Example: Adding Button Functionality

This example opens a calculator when a user clicks a button defined with action name Calculator.

Add the code to the Defects_ActionCanExecute event procedure, so that it is triggered when a user initiates an action.

For information about the **Wscript.Shell** object, refer to the Microsoft documentation. To access help for the VBScript language, choose **Help > VBScript Home Page** in the Script Editor.

```
Function Defects_ActionCanExecute(ActionName)
    On Error Resume Next
    If ActionName = "Calculator" Then
        Set shell = CreateObject("Wscript.Shell")
        shell.Run "Calc"
        set shell = Nothing
    End If
    Defects_ActionCanExecute = Project_DefaultRes
    PrintError "Defects_ActionCanExecute"
    On Error GoTo 0
End Function
```

Example: Error Handling

This example demonstrates how you can display a standard error message. Error handling should be added to each workflow script that you write, because errors that are not detected by the workflow code can cause the user's browser to crash.

The user-defined function PrintError receives the name of the calling procedure as a parameter. If an error has occurred, PrintError prints out the error number, description and severity, and the name of the procedure in which the error occurred.

You do not need to create an **Err** object, because it is intrinsic to VBScript. For more information about the **Err** object, refer to the Microsoft documentation.

```
Sub PrintError(strFunctionName)
    If Err.Number <> 0 Then
        MsgBox "Error #" & Err.Number & ": " & Err.Description, _
        vbOKOnly+vbCritical, _
        "Workflow Error in Function " & strFunctionName
    End If
End Sub
```

The following code segment illustrates how you can add error handling to your subroutines.

```
Sub <sub_name>()
    On Error Resume Next
    :
    [Your code here]
    :
    PrintError "<sub_name>"
End Sub
```

The following code segment illustrates how you can add error handling to your functions.

```
Function <function_name>()
    On Error Resume Next
    :
    [Your code here]
    :
    PrintError "<function_name>"
End Function
```

Example: Obtaining the Session Context

You can use the **TDConnection** object in a workflow script to retrieve information about the session in which the user is working at the time that the script is executed.

In the following example, the server time is displayed in a message box:

MsgBox "The current time on the server is: " & TDConnection.ServerTime

Example: Obtaining Session Properties

This example demonstrates how to use the **TDConnection** object to obtain the properties of the current session. Add the code to the procedure where these properties are needed. The properties do not depend on each other, so each of the properties can be retrieved separately.

The following are examples of session properties:

TDConnection.ServerName
TDConnection.ServerTime
TDConnection.DomainName
TDConnection.ProjectName
TDConnection.Password
User.UserName

Note that there is no need to use **TDConnection** to retrieve the user name because the workflow has a predefined **User** object. For more information, see "TDConnection Object" on page 249.

The example below tests the first five characters of the server URL to determine whether the user is connected to the server using HTTP or HTTPS:

```
If Left(UCase(TDConnection.ServerName), 5) = "HTTPS" Then
    MsgBox "You are currently connected to the server using SSL."
Else
    MsgBox "You are not using SSL."
End If
```

Example: Detecting an Empty Password

This example accesses **TDConnection** to retrieve the password of the current user. It prints a message if the user has an empty password.

The following user-defined function is added to the common script section so that it can be accessed from all modules.

```
Function CheckPassword
    On Error Resume Next
    If isObject(TDConnection) Then
        Set tdc = TDConnection
        currentPwd = tdc.Password
        If len(currentPwd) < 1 Then
            MsgBox "Your password is empty (null)." & _
            "Please change your password (Tools -> Change Password).", 0, _
            "Your Password Is Empty"
        End If
    End If
    On Error GoTo 0
End Function
```

Add the following lines to the EnterModule event procedure for each module so that a user with an empty password receives a message when they enter the module. This example is for the Defects module:

```
Sub Defects_EnterModule
    On Error Resume Next
    CheckPassword
    On Error GoTo 0
End Sub
```

Example: Sending Mail

These examples demonstrate how to use the **TDConnection** object to send mail from the Defects module, and to send mail when a field value changes in the Test Plan module.

Sending Mail from the Defects Module

This example sends mail from the Defects module.

Add a call to the SendDefect procedure in the Defects_Bug_AfterPost event procedure.

Note: If the SendDefect procedure is called before the defect is submitted, the values that were changed in the current modification will not be included. The database is updated with the new values only after the defect is posted.

```
Sub SendDefect (iObjectId, strTo, strCc, strSubject, strComment)
    On Error Resume Next
    Dim objBugFactory, objBug
    Set objBugFactory = TDConnection.BugFactory
    Set objBug = objBugFactory.Item(iObjectId)
    objBug.Mail strTo, strCc, 2, strSubject, strComment
    Set objBug = Nothing
    Set objBugFactory = Nothing
    PrintError "SendDefect"
    On Error Then GoTo 0
End Sub
```

The constant 2 in the call to objBug.Mail indicates that the history should be included with the mail. For a list of the constants that can be used to customize e-mail, refer to the tagTDMAIL_FLAGS enumeration in the *Mercury Quality Center Open Test Architecture API Reference*. In workflow scripts, use numeric constants and not the enumeration values.

Sending Mail When a Test Plan Module Field Value Changes

The example below demonstrates how a similar function could be called when the value of the status field is changed in the Test Plan module.

The code is added to the TestPlan_Test_FieldChange event procedure. It constructs a subject and comment for the e-mail, and calls a user-defined function, SendTest. SendTest sends mail from the Test Plan module. You would code SendTest similarly to the SendDefect subroutine shown in "Sending Mail from the Defects Module" on page 271.

```
Sub TestPlan_Test_FieldChange(FieldName)
   On Error Resume Next
   Dim strSubject, strComment
   If FieldName = "TS_STATUS" Then
      strSubject = "Test Change Notification" & _
         " for project " & TDConnection.ProjectName & _
         " in domain " & TDConnection.DomainName
      strComment = "The user " & User.FullName & _
         " changed the status of the test " & _
         Test_Fields("TS_NAME").Value & _
         " to " & Test_Fields("TS_ STATUS").Value
      SendTest Test_Fields("TS_TEST_ID").Value, _
         Test_Fields("TS_RESPONSIBLE").Value, "[QA Testers]", _
         strSubject, StrComment
   End If
End Sub
```

Example: Storing the Last Values Entered

This example shows how to use the **TDConnection** object to implement persistent data between actions. The lifetime of a variable in a routine is only for the routine run. Therefore, persistent data must be stored if it must be available later. It is recommended that you use the Quality Center API to store persistent data whenever possible instead of using external objects, files, or the registry.

In this example, a user-defined function SW_KeepLastValue uses the **Settings** object to save the values entered into the fields **BG_DETECTION_VERSION**, **BG_USER_01**, and **BG_USER_03** when a user posts a defect. These values are retrieved and assigned as default values when this user adds a new defect.

The user-defined function is called with the SET action from Defects_Bug_CanPost, before a new defect is posted by the user. The values in the fields are stored.

```
Function Defects_Bug_CanPost()
    If Bug_Fields("BG_BUG_ID").Value = "" Then
        SW_KeepLastValue ("SET")
    End If
End Function
```

The function is called with the GET action from the Defects_Bug_New event procedure. When a user adds a new defect, the values stored in the fields for this user are entered into these fields.

```
Sub Defects_Bug_New()
    SW_KeepLastValue ("GET")
End Sub
```

Depending on the action passed as a parameter, the user-defined function SW_KeepLastValue stores the values of the fields in the common settings table for the current user, or reads the values from the **Settings** object and assigns the values to the appropriate fields.

```
Sub SW_KeepLastValue(action)
Dim tdc, vals, flds
Dim uset, pairs, pair
Dim bld
On Error Resume Next
    bld = ""
    Set tdc = TDConnection
    Set uset = tdc.UserSettings

    If action = "SET" Then
        flds = Array("BG_DETECTION_VERSION", _
        "BG_USER_01", "BG_USER_03")
        vals = ""
        For i = 0 To UBound(flds)
            If vals <> "" Then vals = vals & ";"
            vals = vals & flds(i) & "=" & Bug_Fields(flds(i)).Value
        Next
        'Open category KeepLValueSetting
        uset.Open ("KeepLValueSetting")
        'Setting KeepValueFields in category KeepLValueSetting
        uset.Value("KeepValueFields") = vals
        uset.Close
    End If 'SET
```

```
    If action = "GET" Then
        uset.Open ("KeepLValueSetting")
        vals = uset.Value("KeepValueFields")
        If vals <> "" Then
            pairs = Split(vals, ";")
            For i = 0 To UBound(pairs)
                pair = Split(pairs(i), "=")
                If UBound(pair) = 1 Then
                    Select Case pair(0)
                        Case "BG_USER_03"
                            bld = pair(1)
                        Case Else
                            If Bug_Fields(pair(0)).Value = "" Then
                                Bug_Fields(pair(0)).Value = pair(1)
                            End If
                    End Select
                    If Bug_Fields("BG_DETECTION_VERSION").Value <> "" _
                    And bld <> "" Then
                        SW_SetLists_VersionsBuilds _
                        "BG_DETECTION_VERSION", _
                        "BG_USER_03"
                        Bug_Fields("BG_USER_03").Value = bld
                        If Err.Number <> 0 Then Err.Clear
                    End If 'Bug_Fields
                End If 'UBound(pair)
            Next
        End If 'vals <> ""
    End If 'GET

    uset.Close

    PrintError ("Keep Last Value (" & action & ")")
    On Error GoTo 0
End Sub
```

Example: Copying Field Values to Another Object

This example shows how to use the **TDConnection** object to copy the value from the **Build Number** field of a Run (**RN_USER_02**) to the **Last Ran On Build** field of a Test in a Test Set (**TC_USER_03**).

Add the code to the ManualRun_Run_AfterPost event procedure.

```
Sub ManualRun_Run_AfterPost
   On Error Resume Next
   Set TSFactory = TDConnection.TestSetFactory
   Set TS = TSFactory.Item(Run_Fields("RN_CYCLE_ID").value)

   Set TSTestFactory =TS.TSTestFactory
   Set TSTest = TSTestFactory.Item(Run_Fields("RN_TEST_ID").Value)

   TSTest.Field("TC_USER_03") = Run_Fields("RN_USER_02")
   TSTest.Post

   Set TSFactory = Nothing
   Set TS = Nothing
   Set TSTestFactory =Nothing
   Set TSTest = Nothing

   PrintError ("ManualRun_Run_AfterPost")
   On Error GoTo 0
End Sub
```

Part IV

Appendix

A

Verifying Quality Center Server Components

After installing Quality Center, 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, and port availability.

The Quality Center Checker is a diagnostic tool that tests many of the Quality Center server components that Quality Center uses. Running the Quality Center Checker can pinpoint the cause of many server side problems associated with accessing Quality Center.

The following components are verified by the Quality Center Checker:

Component	Description
Computer Information	Verifies information about the operating system.
<application server name> Application Server	Verifies information about your application server such as directory paths, operating system, ports, and service packs.
File System	Verifies that sufficient disk space is available.
Site Administrator Information	Verifies the configuration of the database server and the Site Administration database. Also verifies your Quality Center license.
Application Communication	Verifies the connection between Quality Center and Site Administration.

To verify Quality Center server components:

1 To open the Quality Center Checker:

➤ **From Windows:** Choose **Start** > **Programs** > **Mercury Quality Center** > **Mercury Quality Center Checker**. Alternatively, run the **qcchecker.bat** file from the **..\MercuryInteractive\Quality Center\qcchecker\bin** directory.

➤ **From Linux or Solaris:** Run the **qcchecker.sh** file from the **..\MercuryInteractive\Quality Center\qcchecker\bin** directory.

The Quality Center Checker window opens.
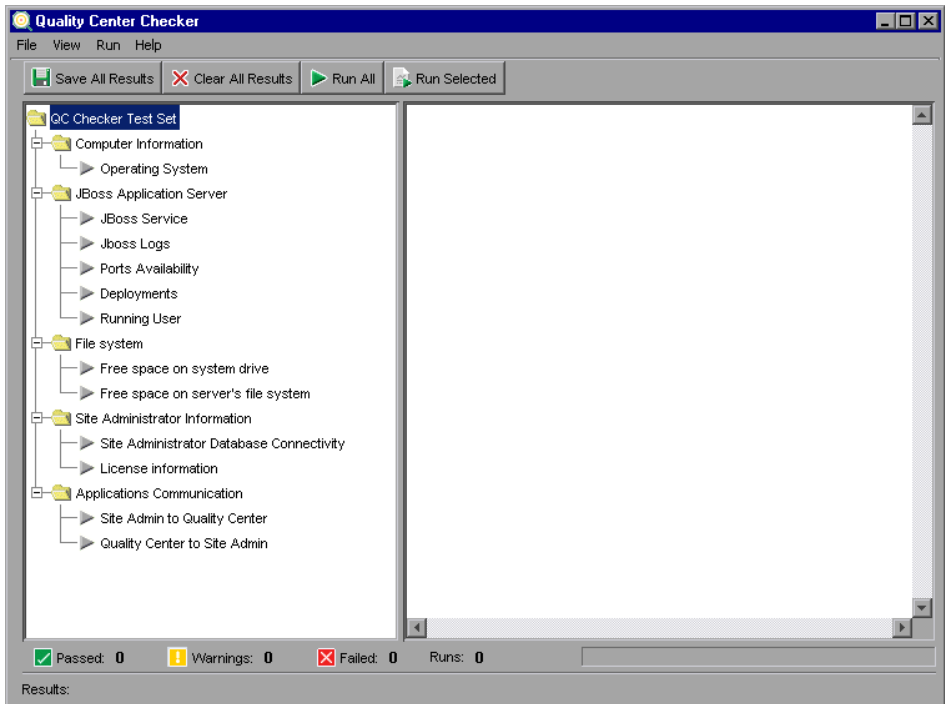
You can expand and collapse all branches in the components tree. To expand all branches, right-click any branch and choose **Expand All**. To collapse all branches, right-click any branch and choose **Collapse All**.

2 To verify the status of the server components, you can:

Run Selected

➤ Select a branch and click the **Run Selected** button or choose **Run** > **Run Selected**.

Run All

➤ Click the **Run All** button or choose **Run** > **Run All** to verify all components.

3 If a parameter value is required to run a component, the Required Parameters dialog box opens.
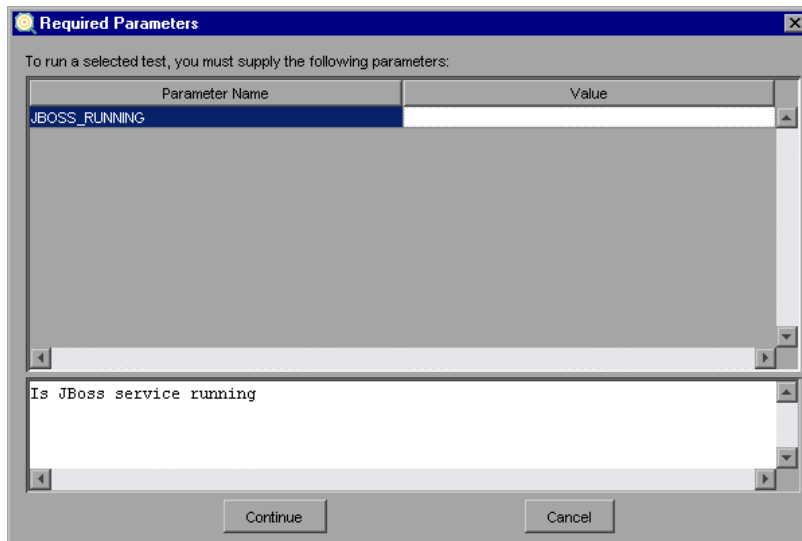
Click the **Value** box of the required parameter and type the value. Click **Continue**. The verification process continues.

Note that to view whether parameters are required before you start verifying a component, select the branch and choose **Run** > **Required Parameter**. If parameters are required the Required Parameters dialog box opens.

4 In the right pane of the Quality Center Checker window, you can view a report of the verified components.
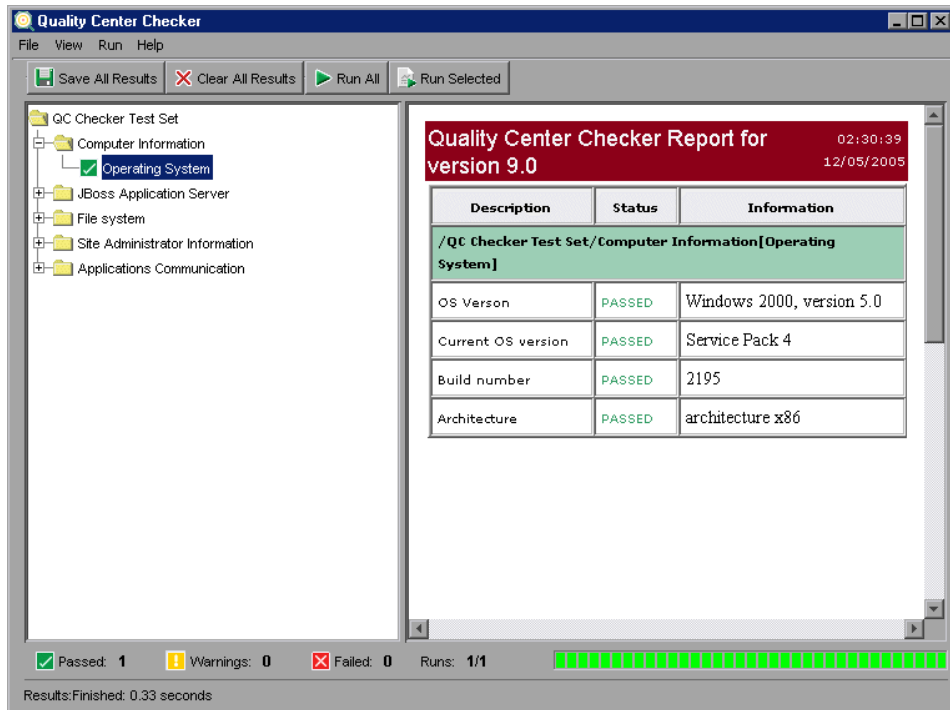
The report displays description, status, and information on each branch that was verified. To view additional report information, choose **View** > **Show Properties**.

The status bar indicates the status of the verified components. Passed components are displayed in green with a check mark. Failed components are displayed in red with an X. Components that may lead to problems and require the attention of the Quality Center site administrator are displayed in yellow with an exclamation point.
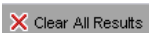
5 To clear all results, click the **Clear All Results** button or choose **File** > **Clear All Results**.
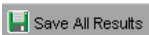
6 To save all results, click the **Save All Results** button or choose **File** > **Save All Results**.

7 To close the Quality Center Checker, choose **File** > **Exit**.

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