HP Quality Center

Software Version: 10.00

Tutorial

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- Software Version number, which indicates the software version.
- Document Release Date, which changes each time the document is updated.
- Software Release Date, which indicates the release date of this version of the software.

To check for recent updates, or to verify that you are using the most recent edition of a document, go to:

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*   Download software patches
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*   Look up HP support contacts
*   Review information about available services
*   Enter into discussions with other software customers
*   Research and register for software training

Most of the support areas require that you register as an HP Passport user and sign in. Many also require a support contract. To register for an HP Passport ID, go to:

http://h20229.www2.hp.com/passport-registration.html

To find more information about access levels, go to:

http://h20230.www2.hp.com/new_access_levels.jsp

Table of Contents

Welcome to This Tutorial

Welcome to this tutorial, a self-paced guide that teaches you how to use HP Quality Center, the HP Web-based solution for application life cycle management.

This tutorial instructs you how to use Quality Center to organize and manage all phases of the application life cycle, including defining releases, specifying requirements, planning tests, executing tests, and tracking defects. It also instructs you how to create baselines for tracking changes in your project over time, and how to customize your project.

To successfully complete the tutorial, you should perform the tutorial in the order in which the information is presented.

How This Tutorial Is Organized

This tutorial contains the following lessons:

Lesson 1   Introducing Quality Center

Introduces you to the application life cycle management process, and familiarizes you with the Quality Center user interface and the sample Mercury Tours Web site.

Lesson 2   Specifying Releases and Cycles

Shows you how to define releases and cycles and monitor their progress and quality.

Lesson 3 **Specifying Requirements**

Shows you how to define requirements, view the requirements tree, and convert requirements to tests.

Lesson 4 **Planning Tests**

Shows you how to create a test plan tree, define test steps, link tests to requirements, and automate manual tests.

Lesson 5 **Running Tests**

Shows you how to define test sets, schedule test runs, and run manual and automated tests.

Lesson 6 **Adding and Tracking Defects**

Shows you how to add new defects, update defects, and manage defects.

Lesson 7 **Alerting on Changes**

Shows you how to keep track of changes made to your requirements, tests, and defects as you perform your project testing.

Lesson 8 **Generating Reports and Graphs**

Shows you how to monitor the application life cycle management process by creating reports and graphs.

Lesson 9 **Creating Libraries and Baselines**

Shows you how to create libraries and baselines, and how to compare baselines to track changes in your project.

Lesson 10 **Customizing Projects**

Shows you how to set up project users, and how to create project fields and lists.

Lesson 11 **Conclusion**

Summarizes the Quality Center application life cycle management process and suggests the steps to consider for each phase.

Before You Begin

To work with this tutorial, consider the following specifications:

Important: The lessons in this tutorial are based on the
QualityCenter_Demo project. Verify with your administrator that you are
working with the correct version of the **QualityCenter_Demo** project. This
version is available with Quality Center 10.00 Patch 1 (or above) and is
obtained by importing the **QualityCenter_Demo.qcp** file using Site
Administration. For more information, refer to the *HP Quality Center
Installation Guide*.

Specifications	Description
Quality Center Editions	Quality Center is available in three different editions — Starter, Enterprise and Premier.
	This tutorial assumes that you are working in Quality Center Enterprise Edition or Quality Center Premier Edition. Some of the lessons and exercises in this tutorial are not applicable if you are working in Quality Center Starter Edition.
	To determine which Quality Center edition you are using, contact your Quality Center site administrator.
QualityCenter_Demo	A demo project that introduces you to Quality Center and includes sample releases, requirements, tests, test sets, test runs, and defects.
	To ensure that you get the same results as the ones specified in this tutorial, make sure that you work on a new copy of the **QualityCenter_Demo** project. For more information, contact your Quality Center site administrator.

Specifications	Description
Mercury Tours	A sample application that simulates a Web-based site for reserving flights, hotel rooms, car rentals, cruises, and vacation deals.
	Note: Mercury Tours is installed during the installation of Quality Center on a server machine. For more information, refer to the *HP Quality Center Installation Guide*.
QuickTest Professional or WinRunner	To run the automated tests in this tutorial, you must have QuickTest Professional or WinRunner installed on your machine.
	➤ To integrate Quality Center with QuickTest Professional, you must install the **HP QuickTest Professional Add-in** and the **HP Quality Center Connectivity Add-in** from the HP Quality Center Add-ins page.
	➤ To integrate Quality Center with WinRunner, you must install the **HP Quality Center Connectivity Add-in** from the HP Quality Center Add-ins page.
	For more information on Quality Center add-ins, refer to the *HP Quality Center Installation Guide*.

Documentation Library

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

➤ Click **Documentation Library** in the Quality Center Help menu to open the Documentation Library home page. The home page provides quick links to the main help topics.

➤ Click **Help on this page** in the Quality Center Help menu to open the Documentation Library to the topic that describes the current page.

Documentation Library Guides

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

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

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

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

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

Quality Center Guides

HP Quality Center User Guide explains how to use Quality Center to organize and execute all phases of the application life cycle management process. It describes how to specify releases, define requirements, plan tests, run tests, and track defects. (Available online and in PDF format.)

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

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

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

HP Quality Center Upgrade Preparation Guide explains how to detect and repair problems before beginning a project upgrade. (Available in PDF format.)

HP Quality Center Database Best Practices Guide provides best practices for deploying Quality Center on database servers. (Available in PDF format.)

Business Process Testing Guides

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

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

API References

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

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

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

HP Quality Center Entity Dependencies API Reference provides an online reference for managing relations between Quality Center entities. The reference covers a subset of the Quality Center COM-based API and a subset of the data tables used when managing relations. You can use this reference to integrate testing tools with Quality Center. (Available online.)

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

Additional Online Resources

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

Troubleshooting & Knowledge Base accesses the Troubleshooting page on the HP Software Support Web site where you can search the Self-solve knowledge base. Choose **Help** > **Troubleshooting & Knowledge Base**. The URL for this Web site is http://h20230.www2.hp.com/troubleshooting.jsp.

HP Software Support accesses the HP Software Support Web site. This site enables you to browse the Self-solve knowledge base. You can also post to and search user discussion forums, submit support requests, download patches and updated documentation, and more. Choose **Help** > **HP Software Support**. The URL for this Web site is www.hp.com/go/hpsoftwaresupport.

Most of the support areas require that you register as an HP Passport user and sign in. Many also require a support contract.

To find more information about access levels, go to:
http://h20230.www2.hp.com/new_access_levels.jsp

To register for an HP Passport user ID, go to:
http://h20229.www2.hp.com/passport-registration.html

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

Add-ins Page opens the HP Quality Center Add-ins Page, which offers integration and synchronization solutions with HP and third-party tools. For more information, refer to the *HP Quality Center Installation Guide*.

Documentation Updates

HP Software is continually updating its product documentation with new information.

To check for recent updates, or to verify that you are using the most recent edition of a document, go to the HP Software Product Manuals Web site (http://h20230.www2.hp.com/selfsolve/manuals).
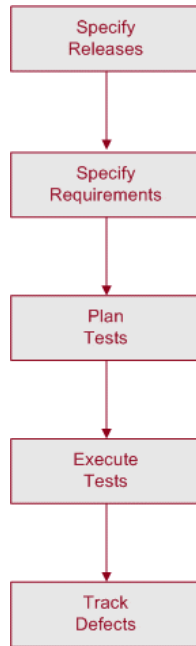
1

Introducing Quality Center

Quality Center helps you organize and manage all phases of the application life cycle management process, including defining releases, specifying requirements, planning tests, executing tests, and tracking defects.

In this lesson, you will learn about:

➤ The Application Life Cycle Management Process on page 16

➤ Starting Quality Center on page 17

➤ The Quality Center Window on page 20

➤ The Mercury Tours Sample Web Site on page 24

The Application Life Cycle Management Process

The application life cycle management process with Quality Center includes the following phases:

```
┌──────────────┐
│   Specify    │
│   Releases   │
└──────────────┘
        │
        ▼
┌──────────────┐
│   Specify    │
│ Requirements │
└──────────────┘
        │
        ▼
┌──────────────┐
│     Plan     │
│    Tests     │
└──────────────┘
        │
        ▼
┌──────────────┐
│   Execute    │
│    Tests     │
└──────────────┘
        │
        ▼
┌──────────────┐
│    Track     │
│   Defects    │
└──────────────┘
```

➤ **Specify Releases.** Develop a release-cycle management plan.

➤ **Specify Requirements.** Analyze your application and determine your requirements.

➤ **Plan Tests.** Plan and confirm which tests need to be performed and how these tests must be run.

➤ **Run Tests.** Organize test sets, schedule their execution, perform test runs, and analyze the results of these runs.

➤ **Track Defects.** Add defects that were detected in the application and track how repairs are progressing.

Throughout the process, you can generate reports and graphs to assist you in "go/no-go" decisions about your application readiness.

Starting Quality Center

You start Quality Center from your Web browser using the
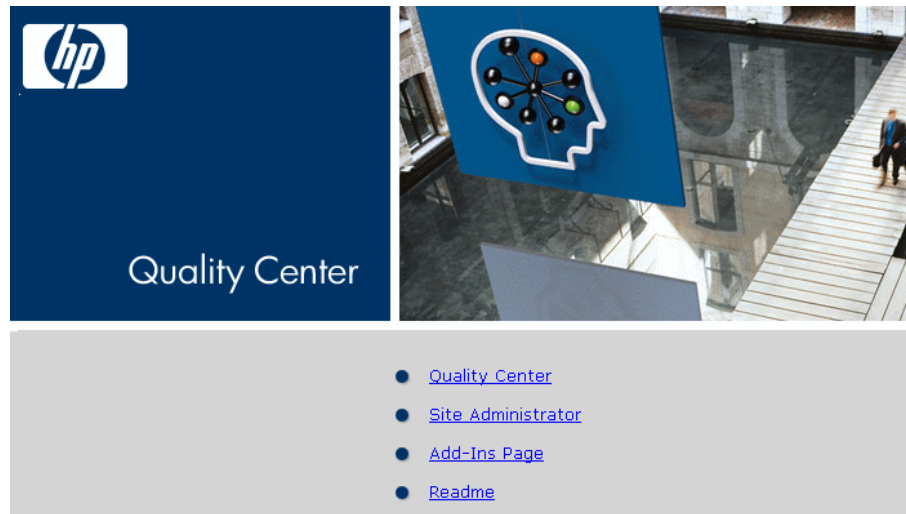HP Quality Center URL.

To start Quality Center:

1 Verify tutorial prerequisites.

Before you begin the lessons in this tutorial, verify that you have the
appropriate prerequisites. For more information, see "Before You Begin" on
page 9.

2 Open the Quality Center Options window.

Open your Web browser and type your Quality Center URL:
http://<Quality Center server name>[:<port number>]/qcbin. Contact your
system administrator if you do not have the correct path.

The Quality Center Options window opens.

3 Open Quality Center.

Click the **Quality Center** link.

The first time you run Quality Center, files are downloaded to your machine, and if it is not already installed, the Microsoft .NET Framework 2.0 Setup program runs. Subsequently, Quality Center carries out a version check. If there is a newer version on the server, updated files are downloaded to your machine.

The Quality Center Login window opens.
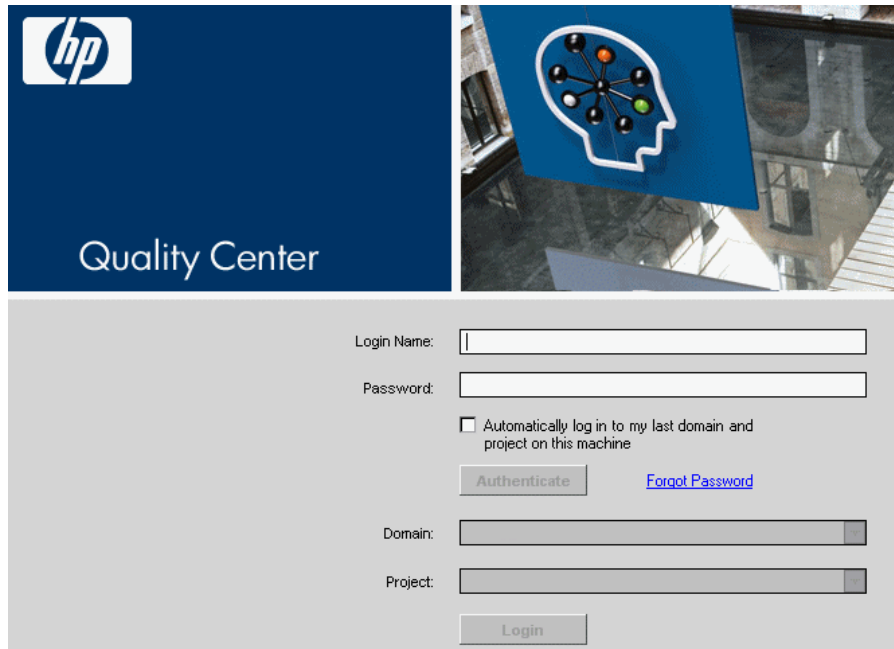
4 Type a user name and authenticate.

In the **Login Name** box, type one of the following names: **alice_qc**, **cecil_qc**, or **michael_qc**.

Skip the **Password** box. A password was not assigned to any of the above user names.

Click the **Authenticate** button. Quality Center verifies your user name and password and determines which domains and projects you can access.

5 **Log in to the project.**

In the **Domain** list, select **DEFAULT**.

In the **Project** list, select **QualityCenter_Demo.** If more than one **QualityCenter_Demo** project is listed, contact your Quality Center site administrator to determine which project to use.

Click the **Login** button.

The first time you run Quality Center, the Welcome page opens. From the Welcome page, you can directly access the Quality Center documentation and feature movies.

When you log in to a project, the Quality Center main window opens and displays the module in which you were last working. In the upper-right corner of the window, the domain name, project name, and your user name are displayed.

The Quality Center Window

In this exercise, you will explore the Quality Center modules and their common elements. You will also learn how to navigate the online help.

To explore the Quality Center window:
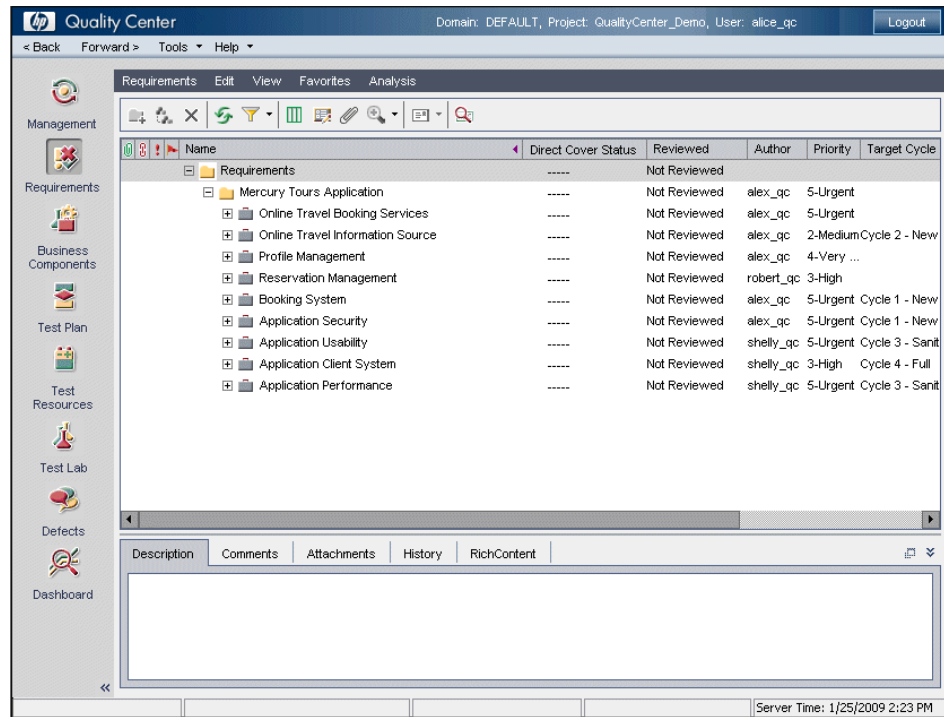
1 Explore the Quality Center modules.

Click the following buttons on the sidebar:

Button	Description
	The **Management** module includes the following sub-modules: ➤ **Releases.** Enables you to define releases and cycles for the application management process. ➤ **Libraries.** Enables you to define libraries to track changes in your project, reuse entities in a project, or share entities across multiple projects. **Quality Center Starter Edition:** The Management module is not available for Quality Center Starter Edition.
	The **Requirements** module enables you to manage requirements in a hierarchical tree-structure. Requirements can be linked to other requirements, tests, or defects.
	Depending on your Quality Center license, you may also have access to the **Business Components** module. The Business Components module enables subject matter experts to drive the quality optimization process. For more information, refer to the *HP Business Process Testing User Guide*.
	The **Test Plan** module enables you to develop and manage tests in a hierarchical tree-structure. Tests can be linked to requirements and defects.
	The **Test Resources** module enables you to manage test resources in a hierarchical tree-structure. Test resources can be associated with tests.
	The **Test Lab** module enables you to run tests on your application and analyze the results.

Button	Description
	The **Defects** module enables you to add defects, determine repair priorities, repair open defects, and analyze the data.
	The **Dashboard** module enables you to create graphs, reports, and Excel reports. You can also create dashboard pages, which enable you to view multiple graphs side-by-side.

2 Explore the common Quality Center elements.

All the Quality Center modules have common elements. For example, click the **Requirements** button on the sidebar.

Each of the Quality Center modules contains the following key elements:

➤ **Quality Center common toolbar.** This toolbar is accessible from all modules and contains the following buttons:

Button	Description
Back	Navigates back to your previous location in Quality Center.
Forward	Navigates forward to your next location in Quality Center.
Tools	Includes options that enable you to select a different project, customize your project, add new defects, check spelling and grammar, delete history data from your project, and open the Document Generator.
Help	Enables you to open the Quality Center Documentation Library and other additional online resources. It also enables you to display version information for each Quality Center client component. For more information, see "Documentation Library" on page 10 and "Additional Online Resources" on page 13.
Logout	Logs you out of your current project and returns you to the Quality Center Login window.

➤ **Module menu bar.** Displays the names of menus from which you select commands in the current Quality Center module.

➤ **Module toolbar.** This is located below the menu bar. It contains buttons for frequently used commands in the current Quality Center module.

3 View Quality Center help topics.

To view the help topic of the Requirements module window, click the **Requirements** button on the sidebar. The Requirement module is displayed. Choose **Help** > **Help on this page**. The help topic opens in a separate window.

To display the navigation pane, which includes the Contents, Index, Search, and Favorites tabs, click the **Show Navigation** button. The navigation pane is displayed on the left side of the page.

To view the Quality Center Documentation Library home page, in the **Contents** tab, click **Home**. The Documentation Library home page opens.
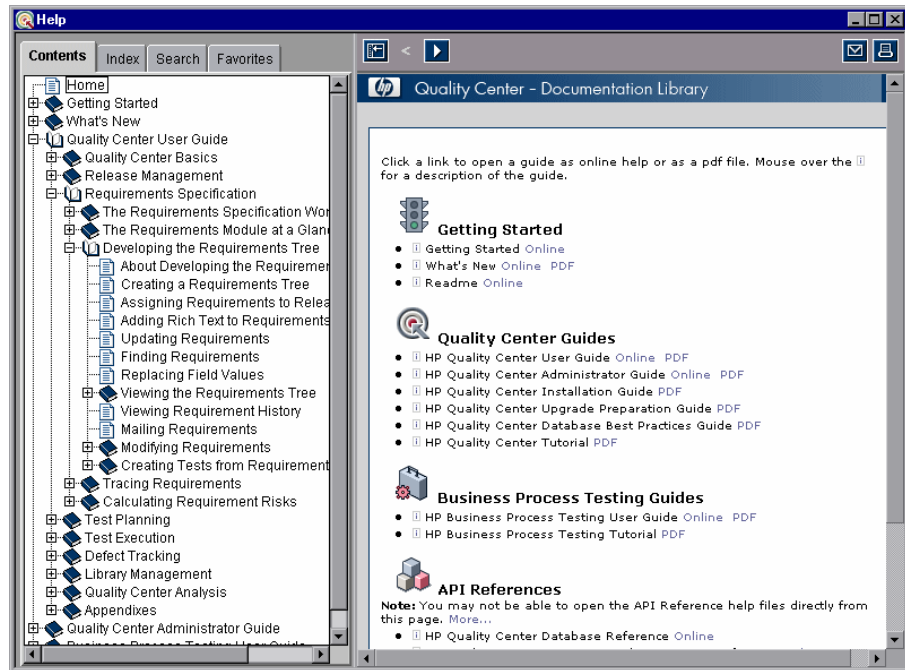
The Documentation Library consists of guides and references, available online, in PDF format, or both.

Click the **Close** button.

The Mercury Tours Sample Web Site

Mercury Tours is the sample Web application used in this tutorial. It simulates a Web-based application for reserving flights, hotel rooms, car rentals, cruises, and vacation deals. Before continuing with the tutorial, familiarize yourself with this application.

To explore Mercury Tours:

1 Open the Mercury Tours application.

Open a separate instance of your Web browser, and type this URL: http://<Quality Center server name>[<:port number>]/mtours

The Mercury Tours home page opens.

2 Register with Mercury Tours.

Click **Register**. The Register page opens.

Under **User Information**, enter any user name and password, and confirm your password. (Other information is not required.)

Click **Submit**. Mercury Tours confirms your registration.

3 Log on to Mercury Tours.

Click **Sign-on**. The Sign-on page opens.

Type your registered user name and password. Click **Submit**.

The Flight Finder page opens.

4 Reserve a flight.

Follow the on-screen instructions to reserve a flight.

5 End your Mercury Tours session.

Click **Sign-off** to log out.

2

Specifying Releases and Cycles

You begin the application life cycle management process by specifying releases and cycles. A **release** represents a group of changes in one or more applications that will be available for distribution at the same time. Each release can contain a number of cycles. A **cycle** represents a development and QA cycle based on the project timeline. The releases and cycles have defined start and end dates.

You can organize and track your upcoming releases by defining a hierarchical releases tree containing releases and cycle. In this lesson, you will add a release to an existing releases tree, and then add cycles to the release.

Quality Center Starter Edition: This lesson is not available for Quality Center Starter Edition.

In this lesson, you will learn about:

Defining Releases and Cycles

In this exercise, you will define a release and then add cycles to the release. Releases and cycles each have start dates and end dates. The date range for a cycle must be contained within the date range of the release.

To define a release and its cycles:

1 Open the QualityCenter_Demo project.

If the **QualityCenter_Demo** project is not already open, log in to the project. For more information, see "Starting Quality Center" on page 17.

2 Display the Releases module.

Click the **Management** button on the sidebar and then click the **Releases** tab.

3 Create a new release folder.

In the releases tree, select the root **Releases** folder. Click the **New Release Folder** button. The New Release Folder dialog box opens.

In the **Release Folder Name** box, type Service Packs.

Click **OK**. The Service Packs release folder is added to the releases tree.

In the **Description** box in the right pane, type the following description for the release folder: This folder contains service pack releases.

4 Add a release.

In the releases tree, make sure that the new **Service Packs** release folder is selected.

Click the **New Release** button. The New Release dialog box opens.

In the **Release Name** box, type Service Pack 1.

Click **OK**. The **Service Pack 1** release is added to the **Service Packs** release folder.

In the right pane, in the **Start Date** box, click the down arrow and select yesterday's date. In the **End Date** box, click the down arrow and select the date two months from today's date. In the **Description** box, type the following description for the release: This release is the first service pack release.

5 Add a cycle to the release.

In the releases tree, select the **Service Pack 1** release.

Click the **New Cycle** button. The New Cycle dialog box opens.

In the **Cycle Name** box, type Cycle 1 - New Features.

Click **OK**. The **Cycle 1 - New Features** cycle is added to the **Service Pack 1** release.

In the right pane, in the **Start Date** box, click the down arrow and select yesterday's date. In the **End Date** box, click the down arrow and select the date a month from today's date. In the **Description** box, type the following description for the cycle: This cycle tests new features added for this service pack.

6 Add a second cycle to the release.

In the releases tree, right-click the **Service Pack 1** release and choose **New Cycle**. The New Cycle dialog box opens.

In the **Cycle Name** box, type Cycle 2 - Full.

Click **OK**. The **Cycle 2 - Full** cycle is added to the **Service Pack 1** release.

In the right pane, in the **Start Date** box, click the down arrow and select the date one month and a day from today's date. In the **End Date** box, click the down arrow and select the date two months from today's date. In the **Description** box, type the following description for the cycle: This cycle fully tests all application features.

Viewing Releases and Cycles

You can view graphs and statistics to display the progress of your releases and cycles. This exercise introduces these graphs and statistics. In later lessons, you will see how the graphs and statistics change to reflect the changing status of your project.

To view releases and cycles:

1 Make sure the Releases module is displayed.

If the Releases module is not displayed, click the **Management** button on the sidebar and then click the **Releases** tab.

2 Display the Progress graph for the Service Pack 1.

In the releases tree, select the **Service Pack 1** release, located in the **Service Packs** release folder. In the right pane, click the **Progress** tab.
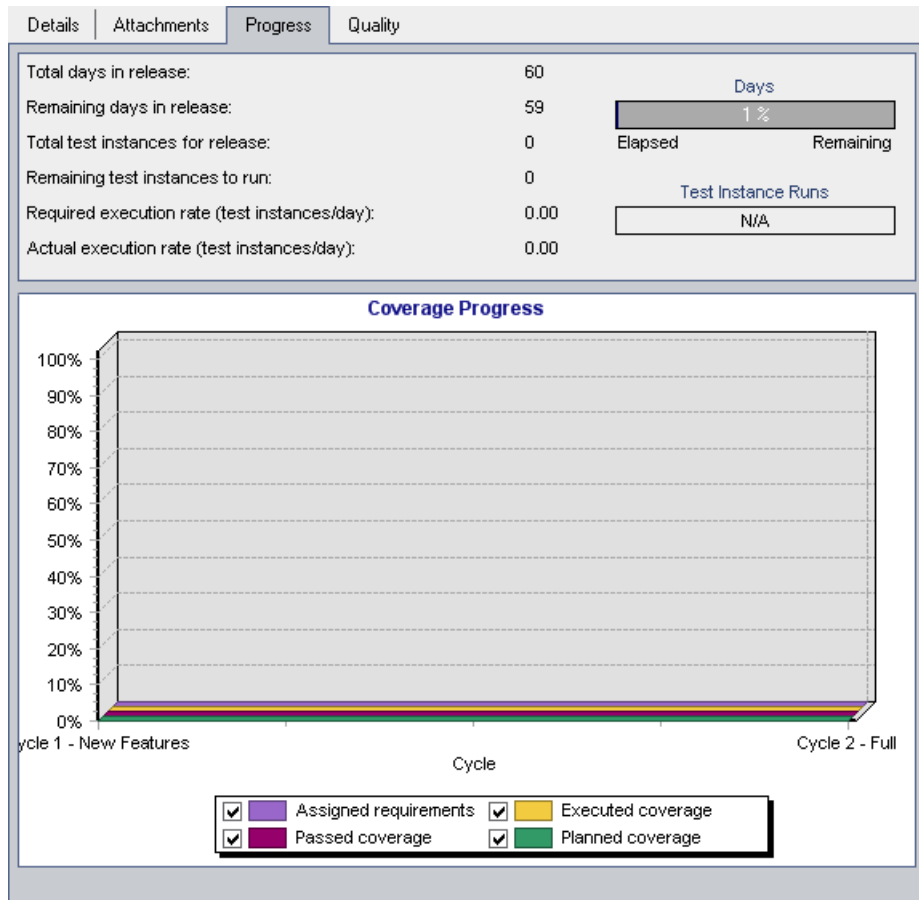
The Progress tab displays the progress of the release based on requirement coverage, elapsed and remaining time, and actual and remaining test instances to run. As you have not yet created requirements or tests, the information in the Coverage Progress graph indicates 0% progress.

3 Display the Progress graph for a cycle.

In the releases tree, select the **Cycle 1 - New Features** cycle, located in the **Service Pack 1** release.

In the right pane, click the **Progress** tab. You can see that the information available is similar to that available for the release, but at the cycle level. As in the case of the release, you have not yet created requirements and tests, therefore the information in the Coverage Progress graph indicates 0% progress.

3

Specifying Requirements

Requirements describe in detail what needs to be solved or achieved to meet the objectives of your application under development.

You define the requirements in Quality Center by creating a **requirements tree** in the Requirements module. This is a graphical representation of your requirements specification, displaying your requirements hierarchically. You can group and sort requirements in the tree, monitor the progress in meeting requirements, and generate detailed reports and graphs. In this lesson, you will create requirements in an existing requirements tree. You will then assign the requirements to a cycle in the releases tree.

In this lesson, you will learn about:

➤ Defining Requirements on page 36

➤ Viewing Requirements on page 41

➤ Converting Requirements on page 44

Defining Requirements

In this exercise, you will define requirements for testing the functionality of reserving cruises in Mercury Tours.

Quality Center Starter Edition: If you are using Quality Center Starter Edition, multiple requirement types are not supported. In addition, fields and commands related to cycles and releases are not available.

To define a requirement:

1 Open the QualityCenter_Demo project.

If the **QualityCenter_Demo** project is not already open, log in to the project. For more information, see "Starting Quality Center" on page 17.

2 Display the Requirements module.

Click the **Requirements** button on the sidebar.

Choose **View** > **Requirements Tree** to display requirements in a tree.

3 Select the Mercury Tours Application requirement.
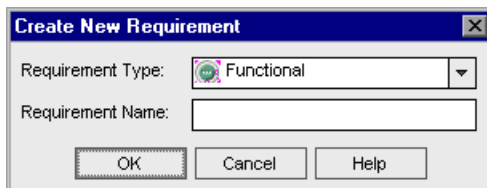
Expand the **Requirements** root requirement and select the **Mercury Tours Application** requirement.

4 Create a new requirement and assign it to a requirement type.

Quality Center Starter Edition: If you are using Quality Center Starter Edition, proceed to Step 5 on page 38.

Click the **New Requirement** button. The Create New Requirement dialog box opens.

Create New Requirement	✕
Requirement Type:	⊙ Functional ▼
Requirement Name:	
OK	Cancel	Help

In the **Requirement Type** box, select **Functional**. Each requirement belongs to a requirement type. The requirement type to which a requirement belongs determines which fields are available for the requirement. Your project administrator can modify existing types and add new types.

In the **Requirement Name** box, type Cruise Reservation.

Click **OK**. The New Requirement dialog box opens.

5 Quality Center Starter Edition: Create a new requirement.

This step only applies if you are using Quality Center Starter Edition.

Click the **New Requirement** button. The New Requirement dialog box opens.

In the **Requirement Name** box, type Cruise Reservation.

6 Add details to the requirement.

Type or select the following:

Priority: 4-Very High

Product: Mercury Tours Web Site

Click **Submit**. The **Cruise Reservation** requirement is added to the requirements tree under the **Mercury Tours Application** requirement.

Click **Close** to close the New Requirement dialog box.

7 Add a child requirement and assign it to a requirement type.

Quality Center Starter Edition: If you are using Quality Center Starter Edition, proceed to Step 8.

In the requirements tree, make sure that the new **Cruise Reservation** requirement is selected.

Click the **New Requirement** button to add a requirement below **Cruise Reservation**.

In the Create New Requirement dialog box, select **Functional** in the **Requirement Type** box and type Cruise Search in the **Requirement Name** box. Click **OK**. The New Requirement dialog box opens.

Type or select the following:

Priority: 4-Very High

Product: Mercury Tours Web Site

Click **Submit**. The **Cruise Search** requirement is added as a child of the **Cruise Reservation** requirement. Click **Close** to close the New Requirement dialog box.

8 Quality Center Starter Edition: Add a child requirement.

This step only applies if you are using Quality Center Starter Edition.

In the requirements tree, make sure that the new **Cruise Reservation** requirement is selected.

Click the **New Requirement** button to add a requirement below **Cruise Reservation**.

In the New Requirement dialog box, type Cruise Search in the **Requirement Name** box.

Type or select the following:

Priority: 4-Very High

Product: Mercury Tours Web Site

Click **Submit**. The **Cruise Search** requirement is added as a child of the **Cruise Reservation** requirement. Click **Close** to close the New Requirement dialog box.

9 **Add the Cruise Booking child requirement.**

Quality Center Starter Edition: If you are using Quality Center Starter Edition, proceed to Step 10.

In the requirements tree, make sure that the **Cruise Reservation** requirement is selected.

Click the **New Requirement** button to add a requirement below **Cruise Reservation**.

In the Create New Requirement dialog box, select **Functional** in the **Requirement Type** box and type Cruise Booking in the **Requirement Name** box. Click **OK**. The New Requirement dialog box opens.

Type or select the following:

Priority: 4-Very High

Product: Mercury Tours Web Site

Click **Submit**. The **Cruise Booking** requirement is added as a child of the **Cruise Reservation** requirement. Click **Close** to close the New Requirement dialog box.

10 **Quality Center Starter Edition: Add the Cruise Booking child requirement.**

This step only applies if you are using Quality Center Starter Edition.

In the requirements tree, make sure that the **Cruise Reservation** requirement is selected.

Click the **New Requirement** button to add a requirement below **Cruise Reservation**.

In the New Requirement dialog box, type Cruise Booking in the **Requirement Name** box.

Type or select the following:

Priority: 4-Very High

Product: Mercury Tours Web Site

Click **Submit**. The **Cruise Booking** requirement is added as a child of the **Cruise Reservation** requirement. Click **Close** to close the New Requirement dialog box.

11 Assign the requirements to a cycle.

Quality Center Starter Edition: If you are using Quality Center Starter Edition, ignore this step.

In the requirements tree, select **Cruise Reservation**.

Choose **Requirements** > **Assign to Cycle**. The releases tree opens. In the **Service Packs** releases folder, in the **Service Pack 1** release, select the check box for the **Cycle 1 - New Features** cycle.

Click **OK** to close the releases tree.

Click **Yes** to assign the cycle to the requirement and its sub requirements.

Viewing Requirements

You can change the way requirements are displayed. In this exercise, you will learn how to zoom in and out of the requirements tree, and how to display and filter requirements in the requirements grid.

To view requirements:

1 Make sure the Requirements module is displayed.

If the Requirements module is not displayed, click the **Requirements** button on the sidebar.

Choose **View** > **Requirements Tree** to display requirements in the Requirements Tree view.

2 Zoom in and out of the requirements tree.

Select **Cruise Reservation** in the requirements tree.

To zoom in, click the **Zoom In** button in the toolbar. The requirements tree displays only the child requirements of **Cruise Reservation**.

To reverse the zoom-in action and display the entire requirements tree, click the **Zoom In** arrow and choose **Zoom Out To Root**.

3 View requirements in the requirements grid.

Choose **View > Requirements Grid** to display requirements in a flat non-hierarchical view. Each line in the grid displays a separate requirement.

4 Define a filter to view requirements created on a specific date.

Click the **Set Filter/Sort** button. The Filter dialog box opens.

For the **Creation Date** field, click the **Filter Condition** box. Click the browse button. The Select Filter Condition dialog box opens, displaying today's date in the calendar.

Select the date on which you added requirements.

Click **OK** to close the Select Filter Condition dialog box.

Click **OK** to apply your chosen filter.

The Requirements Grid displays the requirements you added.

Converting Requirements

After you create the requirements tree, you can use the requirements as a basis for defining your test plan tree in the Test Plan module. For more information, see the lesson "Planning Tests" on page 51.

You can use the Convert to Tests wizard to assist you when designing your test plan tree. The wizard enables you to convert selected requirements or all requirements in the requirements tree to subjects or tests in the test plan tree.

In this exercise, you will convert the **Cruise Reservation** requirement to a subject in the test plan tree, and the child requirements of **Cruise Reservation** to tests in the Cruise Reservation subject folder.

To convert a requirement:

1 Make sure the Requirements module is displayed.

If the Requirements module is not displayed, click the **Requirements** button on the sidebar.

Choose **View** > **Requirements Tree** to display requirements in the Requirements Tree view.

2 Select a requirement.

In the requirements tree, select **Cruise Reservation**.

3 Open the Convert to Tests wizard.

Choose **Requirements** > **Convert to Tests**. The Step 1 dialog box opens.
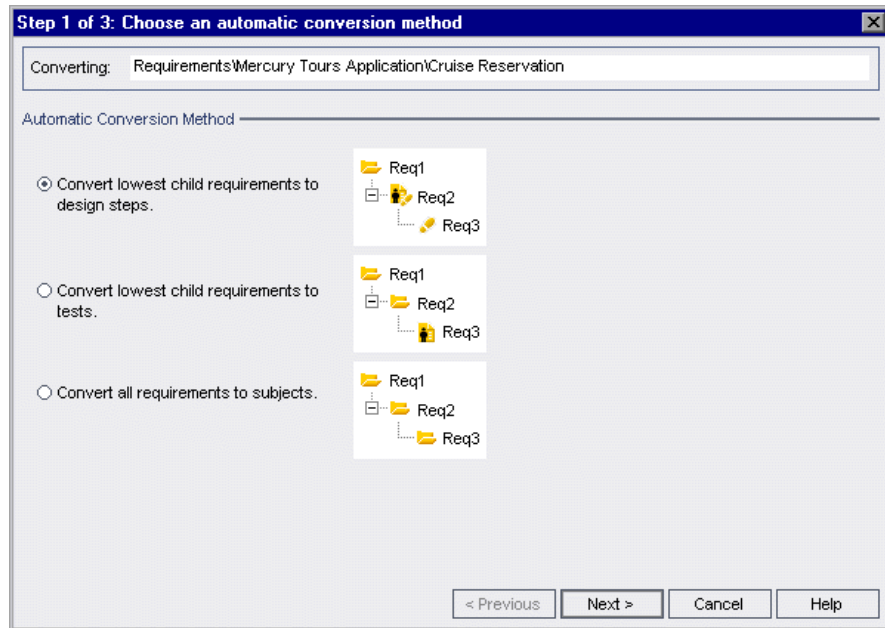
4 Choose an automatic conversion method.

Select the second option, **Convert lowest child requirements to tests**, to convert the selected requirement to a subject folder, and its child requirements to tests.

5 Start the conversion process.

Click **Next** to begin converting the requirements. When the conversion process is complete, the results are displayed in the Step 2 dialog box.
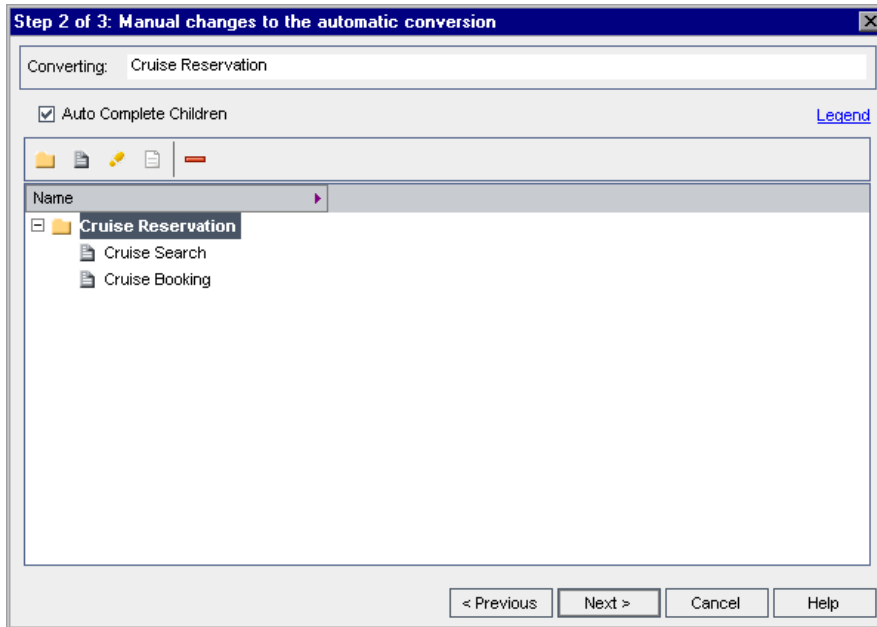
Click **Next**. The Step 3 dialog box opens.

Step 3 of 3: Choose the destination subject path	☒
Converting: Cruise Reservation	

Destination Subject Path ——————————————————

Subject |...|

| < Previous | Finish | Cancel | Help |
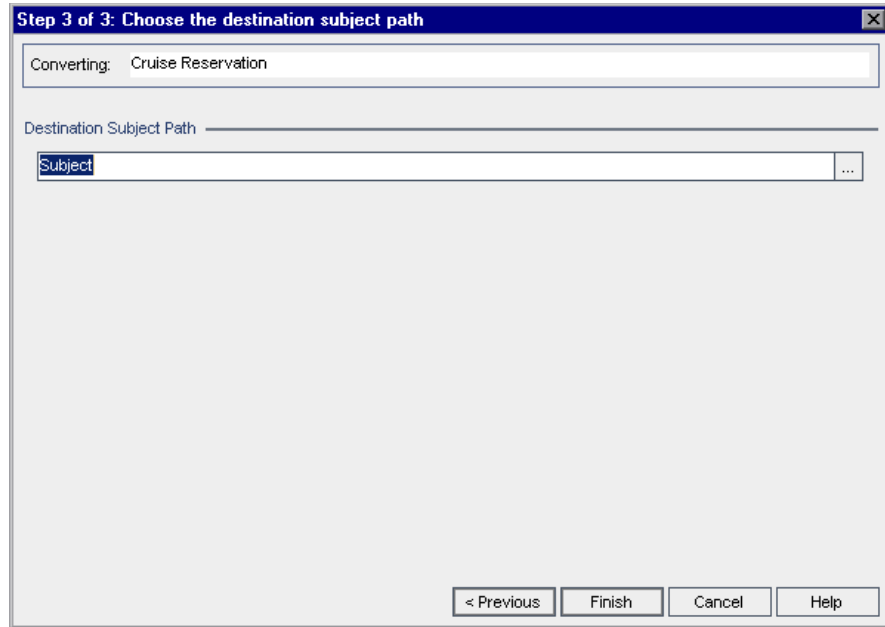
6 Choose the destination subject path.

In the **Destination Subject Path** box, click the browse button. The Select Destination Subject dialog box opens.

If any filters are applied, click the **Set Filter/Sort** arrow and choose **Clear Filter/Sort**. Click **Yes** to confirm.

In the test plan tree, select the **Cruises** subject.
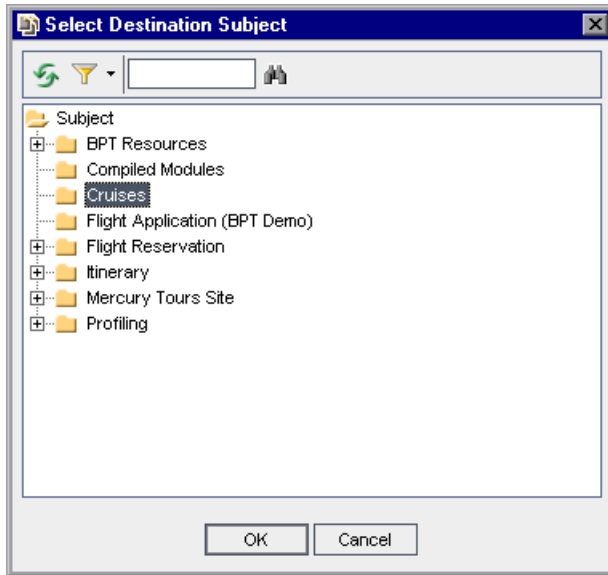
Click **OK** to close the Select Destination Subject dialog box. The **Destination Subject Path** box now indicates this path:
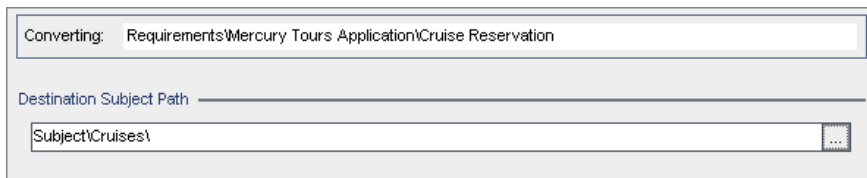
7 Finalize the conversion process.

Click **Finish**. Click **OK**.

8 View the tests in the test plan tree.

Click the **Test Plan** button on the sidebar to display the Test Plan module.

In the test plan tree, expand **Cruises**. The test plan tree displays **Cruise Reservation** under **Cruises**.

Expand **Cruise Reservation**. The test plan tree displays the **Cruise Booking** and **Cruise Search** tests.
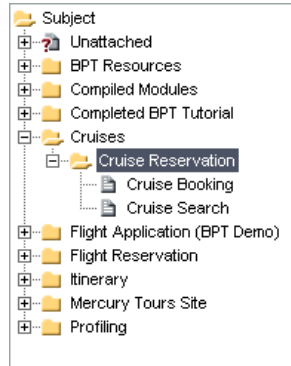
4

Planning Tests

After you define your requirements, you need to determine your testing goal and outline the strategy for achieving your goal.

After you determine your testing goal, you build a **test plan tree,** which hierarchically divides your application into testing units, or subjects. For each subject in the test plan tree, you define tests that contain steps.

For each test step, you specify the actions to be performed on your application and the expected result. You can increase the flexibility of a test step by adding parameters.

To keep track of the relationship between your tests and your requirements, you can link them. This can help you ensure compliance with your requirements throughout the application life cycle management process.

After you design your tests, you can decide which tests to automate. When you automate a test, you can generate a test script and then complete it using other HP testing tools (for example, QuickTest Professional or WinRunner).

In this lesson, you will learn about:

Developing a Test Plan Tree

The typical application is too large to test as a whole. The Test Plan module enables you to divide your application according to functionality. You divide your application into units, or subjects, by creating a **test plan tree**. The test plan tree is a graphical representation of your test plan, displaying your tests according to the hierarchical relationship of their functions. After you define subjects in the tree, you decide which tests to create for each subject, and add them to the tree.

In Lesson 3, you converted the **Cruise Reservation** requirement and its child requirements to subjects and tests in the test plan tree (see "Converting Requirements" on page 44). In this exercise, you will add a subject and a test to the test plan tree in the Test Plan module.

To develop a test plan tree:

1 Open the QualityCenter_Demo project.

If the **QualityCenter_Demo** project is not already open, log in to the project. For more information, see "Starting Quality Center" on page 17.

2 Display the Test Plan module.

Click the **Test Plan** button on the sidebar.

3 Add a subject folder to the test plan tree.

Select the **Cruises** subject folder and click the **New Folder** button. The New Folder dialog box opens.

In the **Folder Name** box, type Cruise Cancellation. Click **OK**. The new subject folder appears under the **Cruises** subject folder in the test plan tree.

In the **Description** tab in the right pane, type a description of the subject: This folder contains tests that verify the Cancel Reservation functionality.

4 Add a test to the subject folder.

Select the **Cruise Cancellation** folder and click the **New Test** button. The Create New Test dialog box opens.

In the **Test Type** box, select **QUICKTEST_TEST** to create a QuickTest Professional test, or select **WR-AUTOMATED** to create a WinRunner test.

In the **Test Name** box, type a name for the test: Cancel All Reservations.

Click **OK**. The Required Test Fields dialog box opens.
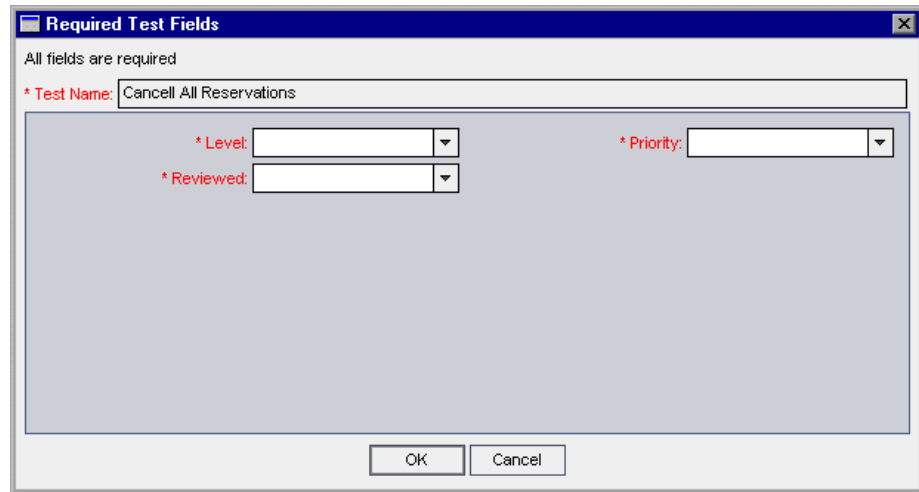
Select the following:

Level: Basic

Reviewed: Not Reviewed

Priority: 4-Very High

Click **OK**. The new test is added to the test plan tree under the **Cruise Cancellation** Subject folder.

53
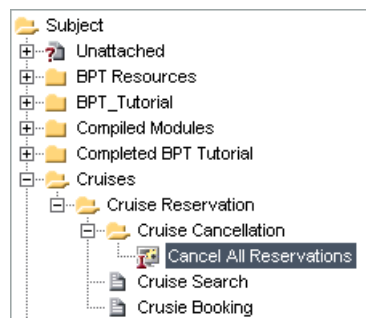
5 Add a test description.

In the **Details** tab, you can see the test name, test designer, creation date, test status, and other information.

In the **Description** tab, type a description for the test: The test verifies cancellation of cruise reservations in the Itinerary page.

Designing Test Steps

After you add a test to the test plan tree and define basic test information, you define test steps—detailed, step-by-step instructions that specify how to execute the test. A step includes the actions to be performed on your application and the expected results.

You can create test steps for both manual and automated tests. For manual tests, you complete test planning by designing the test steps. Using your plan, you can begin test execution immediately. For automated tests, you create automated test scripts using HP testing tools, custom testing tools, or third-party testing tools.

In this exercise, you will create the **Cruise Booking** test. This test verifies the process of booking a cruise through the Mercury Tours site.

To design a test step:

1 Make sure the Test Plan module is displayed.

If the Test Plan module is not displayed, click the **Test Plan** button on the sidebar.

2 Display the Cruise Booking test.

Expand the **Cruises** and **Cruise Reservation** subject folders, and select the **Cruise Booking** test.

3 Open the Design Step Editor.

Click the **Design Steps** tab.

Click the **New Step** button. The Design Step Editor opens.
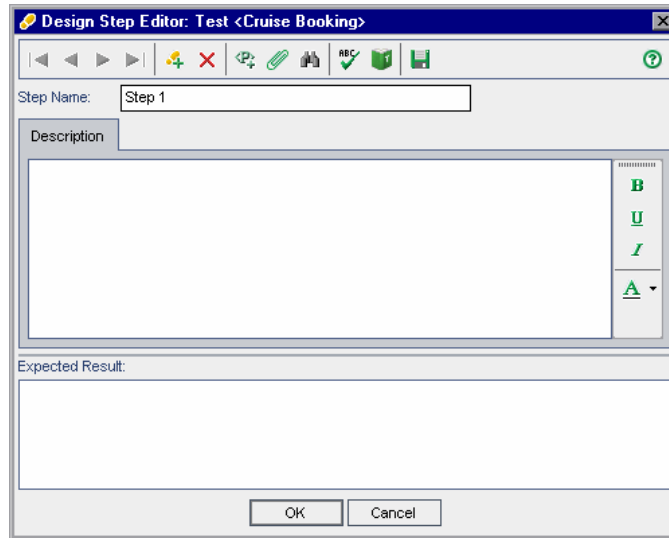
In the **Step Name** box, a step name is displayed. The default name is the sequential number of the test step (**Step 1** if you are adding steps to a test for the first time).

4 **Define a step for displaying the Cruise Special page.**

In the Design Step Editor, type the following:

Step Name: Display the Cruise Special page.

Description: Click the Cruises button.

Expected Result: The Cruise Special page opens.

5 **Define a step for reserving the cruise.**

In the Design Step Editor, make sure the previous step is selected.

Click the **New Step** button. The **Step Name** box displays **Step 2**.

Type the following:

Step Name: Display the Cruise Reservation page.

Description: Click the Now Accepting Reservations button.

Expected Result: The Cruise Reservation page opens.

6 Define a step for booking the cruise.

In the Design Step Editor, make sure the previous step is selected.

Click the **New Step** button. The **Step Name** box displays **Step 3**.

Type the following:

Step Name: Book the cruise.

Description: Enter passenger name, credit card information, and address. Click OK.

Expected Result: The Cruise Confirmation page opens.

7 Define a step for printing the cruise confirmation information.

In the Design Step Editor, make sure the previous step is selected.

Click the **New Step** button. The **Step Name** box displays **Step 4**.

Type the following:

Step Name: Print cruise confirmation.

Description: Click the Print button.

Expected Result: A confirmation page is printed.

8 Define a step for logging off the Mercury Tours site.

In the Design Step Editor, make sure the previous step is selected.

Click the **New Step** button. The **Step Name** box displays **Step 5**.

Type the following:

Step Name: Log off.
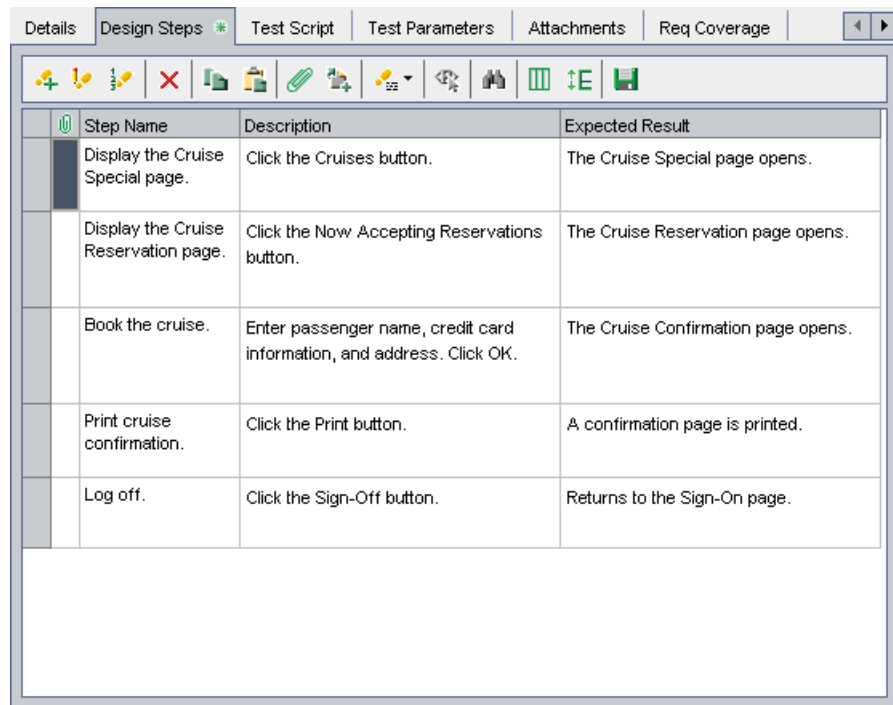
Description: Click the Sign-Off button.

Expected Result: Returns to the Sign-On page.

9 **Close the Design Step Editor.**

Click **OK**. The Design Steps tab displays the design steps.

	Step Name	Description	Expected Result
	Display the Cruise Special page.	Click the Cruises button.	The Cruise Special page opens.
	Display the Cruise Reservation page.	Click the Now Accepting Reservations button.	The Cruise Reservation page opens.
	Book the cruise.	Enter passenger name, credit card information, and address. Click OK.	The Cruise Confirmation page opens.
	Print cruise confirmation.	Click the Print button.	A confirmation page is printed.
	Log off.	Click the Sign-Off button.	Returns to the Sign-On page.

Tabs: Details | Design Steps | Test Script | Test Parameters | Attachments | Req Coverage

Copying Test Steps

You can copy steps from another test in the same project or from a different project. In this exercise, you will copy the test steps from the **Cruise Booking** test and paste them into the **Cruise Search** test.

To copy a test step:

1 **Display the Design Steps tab for the Cruise Booking test.**

In the test plan tree, expand the **Cruises** and **Cruise Reservation** subject folders, and select the **Cruise Booking** test.

Click the **Design Steps** tab.

2 Select the steps that you want to copy.

Position the mouse pointer in the gray sidebar on the left. The mouse pointer changes to an arrow. Press the SHIFT or CTRL key and select each row.

	Step Name	Description	Expected Result
	Display the Cruise Special page.	Click the Cruises button.	The Cruise Special page opens.
	Display the Cruise Reservation page.	Click the Now Accepting Reservations button.	The Cruise Reservation page opens.
	Book the cruise.	Enter passenger name, credit card information, and address. Click OK.	The Cruise Confirmation page opens.
	Print cruise confirmation.	Click the Print button.	A confirmation page is printed.
	Log off.	Click the Sign-Off button.	Returns to the Sign-On page.

Tabs: Details | Design Steps * | Test Script | Test Parameters | Attachments | Req Coverage

3 Copy the selected steps.

Click the **Copy Steps** button.

4 Paste the steps into the Cruise Search test.

In the test plan tree, select the **Cruise Search** test.

In the **Design Steps** tab, click the **Paste Steps** button. The test steps are copied to the Design Steps tab.

Calling Tests with Parameters

To increase the flexibility of manual tests, you can add parameters to design steps. This enables you to run the same test repeatedly with different data each time. A **test parameter** is a variable that can be assigned a value outside the test from which it is defined.

Manual tests with parameters can be called from other tests. This is useful if you have common steps you often want to perform as part of other tests. For example, you can create a template test **Login_Template** that logs a user in when you start the application. You need to call this test at the beginning of each test. In some cases, you will want to log in as a regular user while in others, you will need to log in as the project administrator.

For this purpose, you can create two parameters, <<<user name>>> and <<<password>>>, and change the values according to the type of test that is calling **Login_Template**. If the most common login is a regular user, you can set the default values for the parameters to a regular user name and password.

In "Designing Test Steps" on page 54, you created a test for booking a cruise. In this exercise, you will enhance your test by calling the **Connect And Sign-On** test. This template test includes parameters for the Mercury Tours URL address and for the user name and password used to log in to the site.

To call a test with parameters:

1 Display the Design Steps tab for the Cruise Booking test.

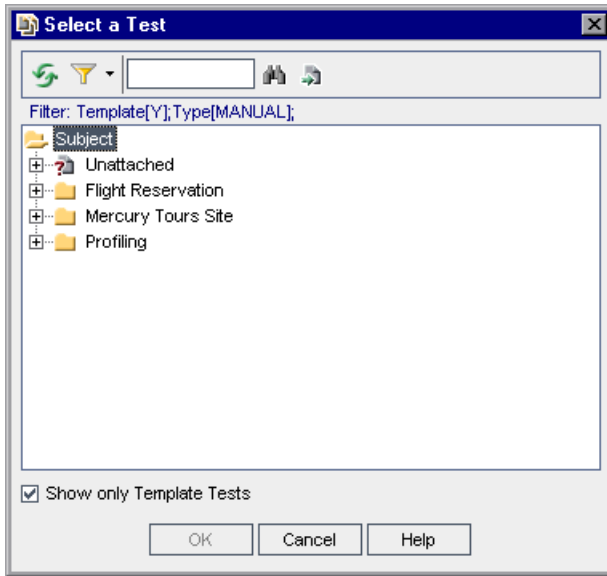In the test plan tree, expand the **Cruises** and **Cruise Reservation** subject folders, and select the **Cruise Booking** test.

Click the **Design Steps** tab.

2 Select the test with parameters that you want to call.
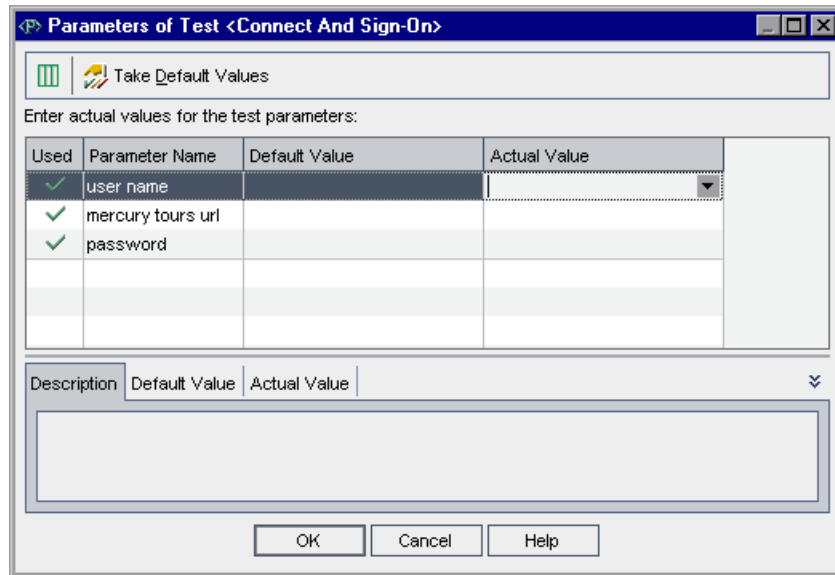
Click the **Call to Test** button. The Select a Test dialog box opens.

In the **Find** box, type Connect, and click the **Find** button. The **Connect And Sign-On** test is highlighted.

Click **OK**. The Parameters of Test dialog box opens and displays the parameters contained in the called test.

3 Assign actual values to the parameters.

In the **Actual Value** column, type the following:

user name: Your user name. Use the same name as the one used in Mercury Tours. For more information, see "The Mercury Tours Sample Web Site" on page 24.

mercury tours url: http://<Quality Center server name>[:<port number>]/mtours

password: Leave blank. You will assign a value to this parameter when you run your test (see "Running Tests Manually" on page 92).

Click **OK**. The **Call <Connect And Sign-On>** step is added to your design steps.

4 Reorder the steps.

Position the mouse pointer on the gray sidebar to the left of the
Call Connect And Sign-On step. The mouse pointer changes to an arrow.
Click and drag the step to the top row.

	Step Name	Description	Expected Result
	Call <Connect	Call <Connect And Sign-On> with the	
	Display the Cruise Special page.	Click the Cruises button.	The Cruise Special page opens.
	Display the Cruise Reservation page.	Click the Now Accepting Reservations button.	The Cruise Reservation page opens.
	Book the cruise.	Enter passenger name, credit card information, and address. Click OK.	The Cruise Confirmation page opens.
	Print cruise confirmation.	Click the Print button.	A confirmation page is printed.
	Log off.	Click the Sign-Off button.	Returns to the Sign-On page.

Tabs: Details | Design Steps * | Test Script | Test Parameters | Attachments | Req Coverage

Creating and Viewing Requirements Coverage

It is essential that the tests in your test plan comply with your requirements. To help ensure compliance throughout the application life cycle management process, you can add links between your tests in the Test Plan module and your requirements in the Requirements module.

In the Test Plan module, you create **requirements coverage** by selecting requirements to link to a test. Alternatively, in the Requirements module, you create **tests coverage** by selecting tests to link to a requirement. A test can cover more than one requirement, and a requirement can be covered by more than one test.

To further ensure compliance with your testing requirements, after you log defects, you can link your requirements and tests to defects (see "Linking Defects to Tests" on page 116). This ensures that if a requirement changes, you can identify which tests and defects are affected, and who is responsible for them.

In these exercises, you will learn about the following:

➤ Linking Requirements to a Test

➤ Linking Tests to a Requirement

➤ Analyzing Test Coverage

Linking Requirements to a Test

In this exercise you will view existing requirements coverage for the **Cruise Booking** test and create new requirements coverage by linking the **Cruise Search** requirement to the **Cruise Booking** test.

You will also add requirements coverage for the following tests: **Cancel All Reservations**, **Airline Preference**, and **Number of Passengers**.

To link a requirement to a test:

1 Make sure that the Test Plan module is displayed.

If the Test Plan module is not displayed, click the **Test Plan** button on the sidebar.

2 Display the Cruise Booking test.

Expand the **Cruises** and **Cruise Reservation** subject folders, and select the **Cruise Booking** test.

3 Display the Req Coverage tab.

In the right pane, click the **Req Coverage** tab. The existing requirements coverage is displayed in the coverage grid. Note that the **Cruise Booking** requirement is already linked to the **Cruise Booking** test because you converted the requirement to a test (see "Converting Requirements" on page 44).

4 Display the requirements tree.

Click the **Select Req** button and expand the requirements tree displayed on the right.
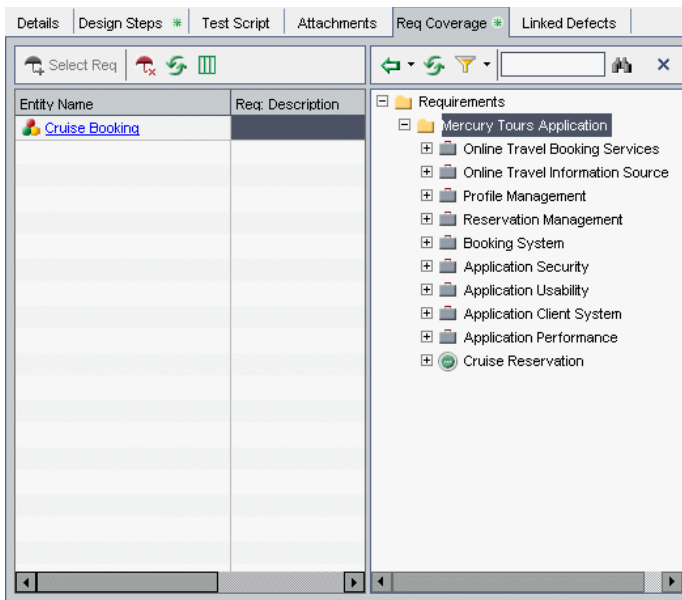
5 Add the Cruise Search requirement to the coverage grid.

In the requirements tree in the right pane, under **Cruise Reservation**, select **Cruise Search**.

Click the **Add to Coverage (Without Children)** button. The **Cruise Search** requirement is added to the coverage grid.

Tip: You can also drag a requirement in the requirements tree to the coverage grid. The requirement is added to the coverage grid without its child requirements.

---

6 Add coverage to the Cancel All Reservations test.

In the test plan tree, expand the **Cruises** and **Cruise Cancellation** subject folders, and select the **Cancel All Reservations** test.

In the requirements tree in the right pane, under **Cruise Reservation**, select **Cruise Search** and drag the requirement to the coverage grid. Select **Cruise Booking** and drag the requirement to the coverage grid.

7 Add coverage to the Airline Preference test.

In the test plan tree, expand the **Flight Reservation** and **Flight Finder** subject folders, and select the **Airline Preference** test.

In the requirements tree in the right pane, under **Cruise Reservation**, select **Cruise Search** and drag the requirement to the coverage grid. Select **Cruise Booking** and drag the requirement to the coverage grid.

8 Delete coverage for the Airline Preference test.

In the coverage grid, select **Flight Tickets**. Click the **Remove Selected** button. Click **Yes** to confirm.

Select **Airline Company** and click the **Remove Selected** button. Click **Yes** to confirm.

9 Add coverage to the Number of Passengers test.

In the test plan tree, expand the **Flight Reservation** and **Flight Finder** subject folders, and select the **Number of Passengers** test.

In the requirements tree in the right pane, under **Cruise Reservation**, select **Cruise Search** and drag the requirement to the coverage grid.

10 Hide the requirements tree.

Click the **Close** button.

Linking Tests to a Requirement

In this exercise, you will create tests coverage by linking the **Cruise Search** test to the **Cruise Booking** requirement.

To link a test to a requirement:

1 Display the Requirements module.

Click the **Requirements** button on the sidebar.

2 Display the requirements tree in Requirement Details View.

Choose **View** > **Requirement Details**. The Requirement Details view is displayed.

3 Display the Cruise Booking requirement.

In the requirements tree, expand the **Cruise Reservation** folder, and select the **Cruise Booking** requirement.

4 Display the Test Coverage tab.

In the right pane, click the **Test Coverage** tab. The coverage grid indicates that the **Cruise Booking** requirement is already linked to the following tests: **Cruise Booking**, **Cancel All Reservations**, and **Airline Preference**.

5 Display the test plan tree.

If the test plan tree is not displayed, in the Test Coverage tab, click the **Select Tests** button to show the test plan tree on the right.
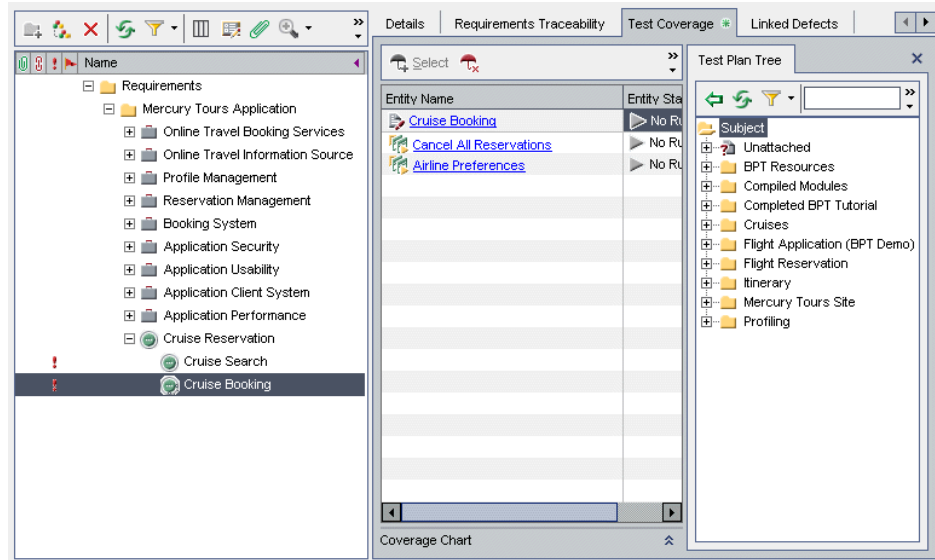
6 Select the Cruise Search test in the test plan tree.

In the Test Plan Tree tab, expand the **Cruises** and **Cruise Reservation** subject folders, and select the **Cruise Search** test.

7 Add the test to the coverage grid.

Click the **Add to Coverage** button. The **Cruise Search** test is added to the coverage grid.

Tip: You can also drag a test or a subject folder in the Test Plan Tree to the coverage grid.

---

8 Hide the test plan tree.

Click the **Close** button above the tests plan tree.

Analyzing Test Coverage

After you create test coverage, you can use the Coverage Analysis view in the Requirements module to analyze the breakdown of child requirements according to test coverage.

In this exercise, you will analyze the **Application Client System** requirement.

To analyze test coverage:

1 **Make sure that the Requirements module is displayed.**

If the Requirements module is not displayed, click the **Requirements** button on the sidebar.

2 **Display the requirements tree in Coverage Analysis view.**

Choose **View** > **Coverage Analysis**. The Coverage Analysis view is displayed.

3 **Display the Application Client System requirement in Coverage Analysis view.**

If any filters are applied, click the **Set Filter/Sort** arrow and choose **Clear Filter/Sort**. Click **Yes** to confirm.

Under the **Mercury Tours Application** requirement, expand the **Application Client System** requirement and its children.

In the Coverage Analysis column, you can see graphically the number of children that have a direct cover status and those that are not yet covered.

4 Display coverage analysis for the Application Client System requirement.

Right-click the **Application Client System** requirement, and choose **Coverage Analysis**. The Coverage Analysis dialog box opens.
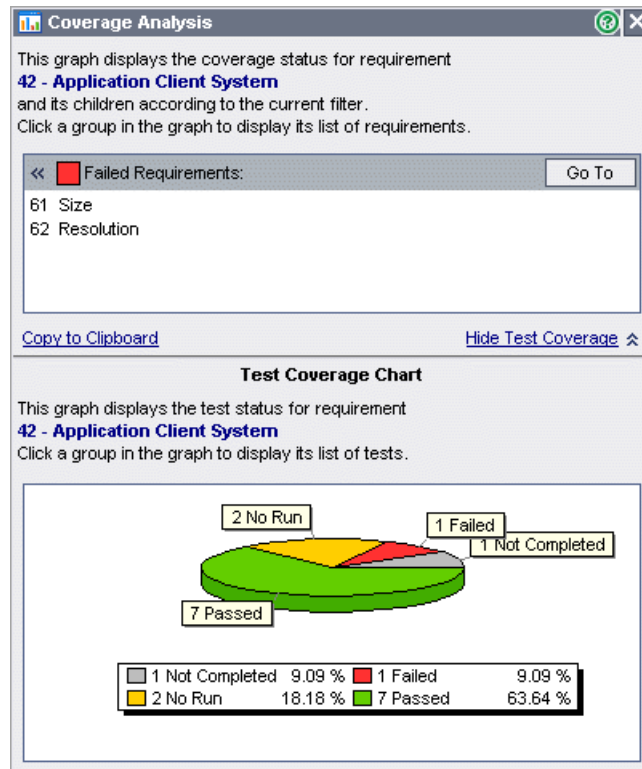

69

5 Display the child requirements with a "Failed" status.

Click the red **Failed** area of the graph. The child requirements with a "Failed" status are listed.
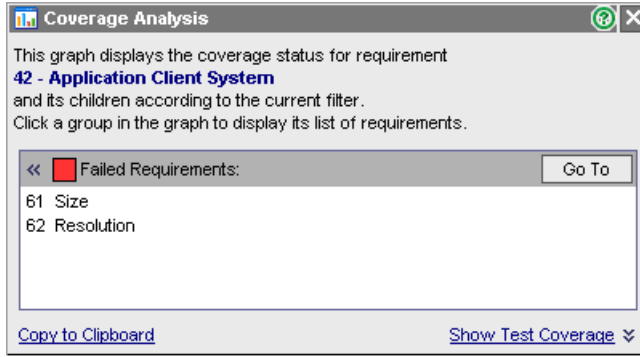
6 Display test coverage for the requirement.

Click the **Show Test Coverage** link to extend the Coverage Analysis dialog box and display the Test Coverage Chart.

This pie chart graphically displays the full test coverage for the requirement, grouped according to test status.

Click the **Passed** section of the chart to open the Tests Coverage dialog box and display the list of tests with the selected status. Close the Test Coverage dialog box.

7 Close the Coverage Analysis dialog box.

Click the **Close** button.

Generating Automated Test Scripts

Test planning involves deciding which tests to automate. If you choose to execute tests manually, the tests are ready for execution as soon as you define the test steps. If you choose to automate tests, you can generate test scripts and complete them using other HP testing tools (for example, QuickTest Professional or WinRunner).

Consider these issues when deciding whether to automate a test.

Do automate:	➤ Tests that run with each new version of your application to check the stability of basic functionality across the entire application (regression tests).
	➤ Tests that use multiple data values for the same operation (data-driven tests).
	➤ Tests that are run many times (stress tests) and tests that check a multi-user client/server system (load tests).
Do not automate:	➤ Tests that are executed only once.
	➤ Tests that require immediate execution.
	➤ Tests that check how easy the application is to use (usability tests).
	➤ Tests that do not have predictable results.

In this exercise, you will generate an automated test script for the **Address Options** test.

To generate an automated test script:

1 Display the Test Plan module.

Click the **Test Plan** button on the sidebar.

2 Locate the Address Options manual test.

Select the **Subject** folder at the root of the test plan tree and choose **Edit > Find**. The Find Folder/Test dialog box opens.

In **Value To Find,** type Book.

Select the **Include Tests** checkbox to search for folders and tests.

Click **Find**. The Search Results dialog box opens and displays a list of possible matches.

Double-click the **Flight Reservation\Book Flight** folder to highlight the test in the test plan tree. Click **Close** to close the Search Results dialog box.

In the test plan tree, select the **Address Options** test.

3 Display the Design Steps tab.

In the right pane, click the **Design Steps** tab.

4 Generate a test script.

Click the **Generate Script** button.

Choose **QUICKTEST_TEST** to generate a QuickTest Professional test, or choose **WR-AUTOMATED** to generate a WinRunner test.

The steps in the **Address Options** test are used to create an automated test script. In the test plan tree, the manual test with the steps icon next to the test is now replaced with the automated test icon.

5 View the test script.

Click the **Test Script** tab.

To display and modify your test script in the testing tool in which it was created, click the **Launch** button.

5

Running Tests

Throughout the application life cycle management process, you can run manual and automated tests to locate defects and assess the quality of your application.

You start by creating **test sets** and choosing which tests to include in each set. A test set is a group of tests in a Quality Center project designed to achieve specific testing goals. Quality Center enables you to control the execution of tests in a test set by setting conditions and scheduling the date and time for executing your tests.

After you define test sets, you can begin to execute your tests. You can then use Quality Center to view and analyze the results of your tests.

When you run a test manually, you execute the test steps you defined in test planning. You pass or fail each step, depending on whether the actual results match the expected output. When you run a test automatically, Quality Center opens the selected testing tool, which runs the test, and imports the test results to Quality Center.

In this lesson, you will learn about:

Defining Test Sets

After you design tests in the Test Plan module, you create a **test sets tree**. A test sets tree enables you to organize your testing needs by grouping **test sets** in folders and organizing them in different hierarchical levels in the Test Lab module. You assign each test set folder to a cycle. This enables you to group together test sets that will be run during the same cycle and analyze the progress of the cycle as you run your tests.

Test sets can include both manual and automated tests. You can also include instances of the same test in different test sets or add more than one instance to the same test set.

To decide which test sets to create, consider the goals you defined at the beginning of the application life cycle management process. Consider issues such as the current state of the application and the addition or modification of new features.

Following are examples of general categories of test sets you can create:

Test Set	Description
Sanity	Checks entire application at a basic level—focusing on breadth, rather than depth—to verify that the application is functional and stable. This set includes fundamental tests that contain positive checks, validating that the application is functioning properly. For example, in the Mercury Tours application, you could test whether the application opens and enables you to log in.
Regression	Tests the system in a more in-depth manner than a sanity set. This set can include both positive and negative checks. Negative tests attempt to fail an application to demonstrate that the application is not functioning properly.

Test Set	Description
Advanced	Tests both breadth and depth. This set covers the entire application, and also tests the application's advanced options. You can run this set when there is ample time for testing.
Function	Tests a subsystem of an application. This could be a single feature or a group of features. For example, in the Mercury Tours application, a function set could test all activities related to booking a flight.

In this exercise, you will define the **Mercury Tours Site** test set. You will also set failure rules for the test set to instruct Quality Center how to proceed in the event that an automated test in the test set fails.

Quality Center Starter Edition: If you are using Quality Center Starter Edition, fields and commands related to cycles and releases are not available in Quality Center.

To define a test set:

1 Open the QualityCenter_Demo project.

If the **QualityCenter_Demo** project is not already open, log in to the project. For more information, see "Starting Quality Center" on page 17.

2 Display the Test Lab module.

Click the **Test Lab** button on the sidebar.

Choose **View > Test Sets Tree** to display test sets in the test sets tree.

3 Add a folder to the test sets tree.

In the test sets tree in the left pane, select the **Root** folder.

Click the **New Folder** button. The New Folder dialog box opens.

In the **Folder Name** box, type Service Pack 1 and click **OK**.

4 Create subfolders for the test set folder.

Select the Service Pack 1 folder you created and repeat the previous step to create two subfolders, named Cycle 1 - New Features, and Cycle 2 - Full.

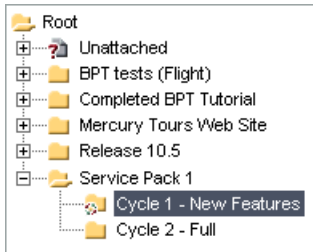**5 Assign the test set folders to a cycle.**

Quality Center Starter Edition: If you are using Quality Center Starter Edition, proceed to Step 6.

Select the **Cycle 1 - New Features** test set folder and click the **Assign to Cycle** button. The Assign to Cycle dialog box opens.

In the **Service Packs** releases folder, in the **Service Pack 1** release, select the **Cycle 1 - New Features** cycle.

Click **OK**. The icon for the folder in the test sets tree changes to show that the folder has been assigned to a cycle.
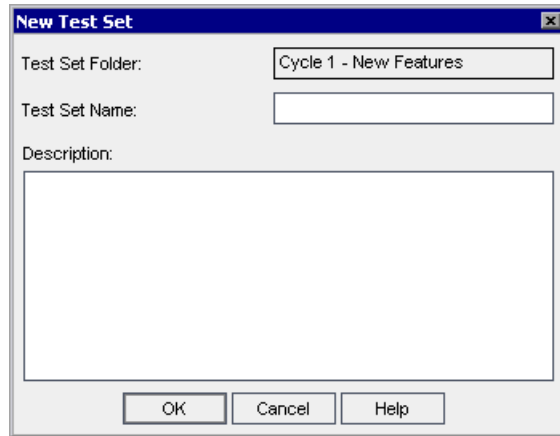

Right-click the **Cycle 2 - Full** test sets folder and choose **Assign to Cycle**. Assign the folder to the **Cycle 2 - Full** cycle, located in the **Service Pack 1** release in the releases tree.

6 **Add a test set to the Cycle 1 - New Features test set folder.**

In the test sets tree, select **Cycle 1- New Features**.

Click the **New Test Set** button. The New Test Set dialog box opens.
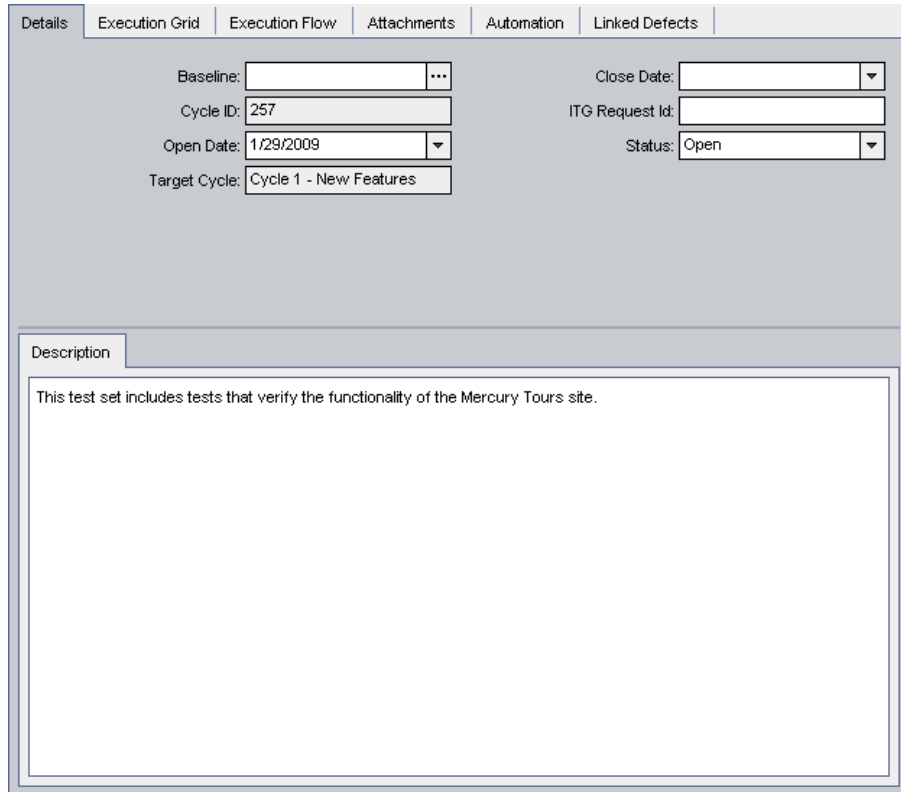

Type the following:

Test Set Name: Mercury Tours Site

Description: This test set includes tests that verify the functionality of the Mercury Tours site.

Click **OK**. The **Mercury Tours Site** test set is added to the test sets tree in the left pane.

7 Define the test set details.

Click the **Details** tab. By default, the **Status** indicates that the test set is **Open**.

Perform the following:

Open Date: Select a date from the calendar for the planned opening date for the test set.

Close Date: Select the planned closing date for the test set.

8 Set rules for the automated tests in the test set in the event of a test failure.

Click the **Automation** tab. Click **On Failure**.

Perform the following:

On automated test failure: Select the first check box and make sure that the number of times an automated test can be rerun is set to **1**.

On final test failure: Make sure that the **Do nothing** option is selected.

9 Instruct Quality Center to send email to specified users if certain events occur.

Click **Notifications**.

Perform the following:

Send email in the event of: Select the first check box to send email notification if any test in the test set fails.

To: Type your email address.

Message: Type the following:
This test failed. Please review the test results and submit a defect.

Adding Tests to a Test Set

After you define a test set, you can add test instances to your test set. In this exercise, you will add test instances to the **Mercury Tours Site** test set.

To add a test to a test set:

1 Make sure the Test Lab module is displayed.

If the Test Lab module is not displayed, click the **Test Lab** button on the sidebar.

If the Test Sets Tree view is not displayed, choose **View > Test Sets Tree**.
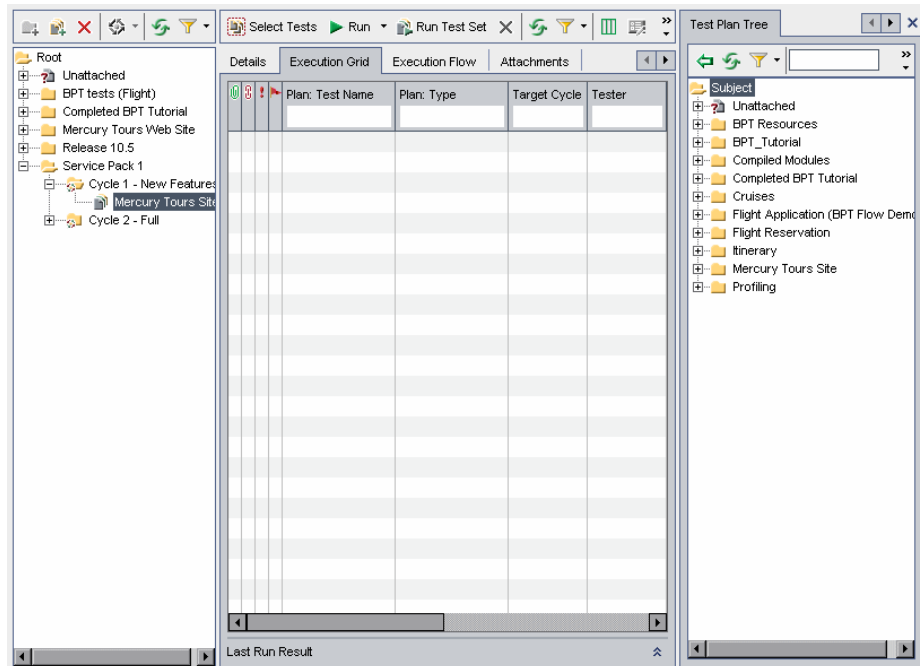
2 Display the Execution Grid tab.

In the test sets tree, expand the **Cycle 1 - New Features** test set folder under **Service Pack 1**. Select the **Mercury Tours Site** test set.

Click the **Execution Grid** tab.

3 Display the test plan tree if it is not already displayed.

Click the **Select Tests** button. The right pane displays the test plan tree.

If any filters are applied, clear them:

In the test plan tree, click the **Set Filter/Sort** arrow and choose **Clear Filter/Sort**. Click **Yes** to confirm.

In the Execution Grid, click the **Set Filter/Sort** arrow and choose **Clear Filter/Sort**. Click **Yes** to confirm.

4 Add the Cruises folder to the test set.

In the test plan tree, select the **Cruises** folder and click the **Add Tests to Test Set** button.

Click **Yes** to confirm. The Parameters of Test dialog box opens because you are adding a test with an unassigned parameter value to a test set. Click **Cancel** to close the dialog box. You will assign this parameter value when you run the Cruise Booking test (see "Running Tests Manually" on page 92). The tests are added to the test set.

5 Add the Airline Preference test to the test set.

To search for the test, in the **Find** box, type airline and click the **Find** button. The **Airline Preference** test is highlighted in the test plan tree.

Double-click the **Airline Preference** test. The test instance is added to the test set.

6 Add the Number of Passengers test to the test set.

To search for the test, in the **Find** box, type Number of Passengers and click the **Find** button. The **Number of Passengers** test is highlighted in the test plan tree.

Drag the **Number of Passengers** test from the test plan tree to the Execution Grid to add it to the test set.

7 Close the right pane.

Click the **Close** button.

Scheduling Test Runs

The Execution Flow tab enables you to specify a date and time to execute a test instance and set conditions for it. A **condition** is based on the results of another specified test instance in the Execution Flow. By setting conditions, you can postpone the execution of a test instance until another specified test instance finishes running or passes. You can also set the sequence in which to execute the test instances.

For example, you can schedule Test 2 to run only after Test 1 finishes, and Test 3 to run only if Test 2 passes. You can also schedule Test 1 and Test 2 to run a day before Test 3. The Execution Flow displays the tests and their conditions in a diagram.
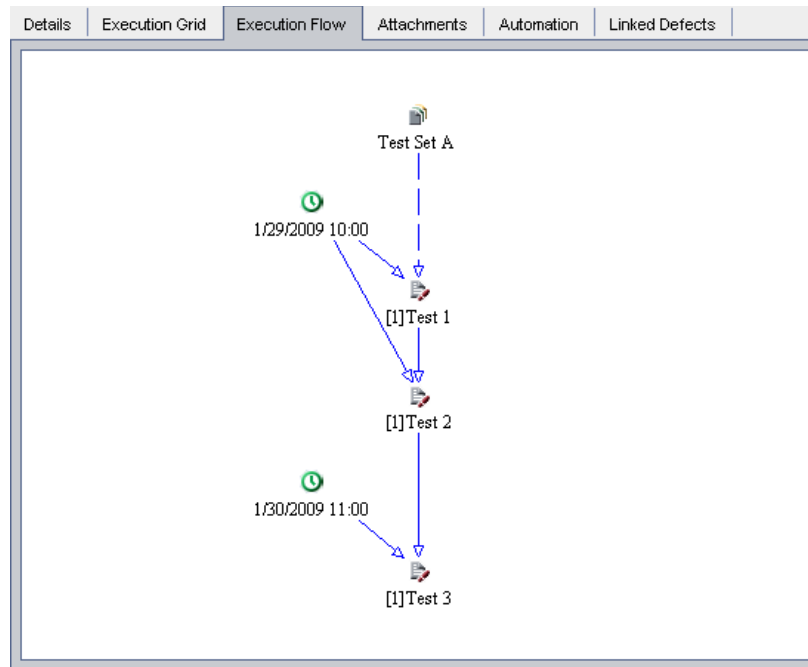
A **dashed line** — — — ▷ arrow indicates a test with no conditions. A **solid line** ————▷ arrow indicates a condition and can be blue or green. If the solid line is blue, it indicates that the condition is set to Finished. If the solid line is green, it indicates that the condition is set to Passed. A **Time Dependency** ◑ icon is displayed for time-dependent tests.

In this exercise, you will create a new test set and add to it three test instances that verify the login procedure on the Sign-On page of the Mercury Tours site. Then, you will set the conditions for each test instance and specify when each one is to be run.

To schedule a test run:

1 Make sure the Test Lab module is displayed.
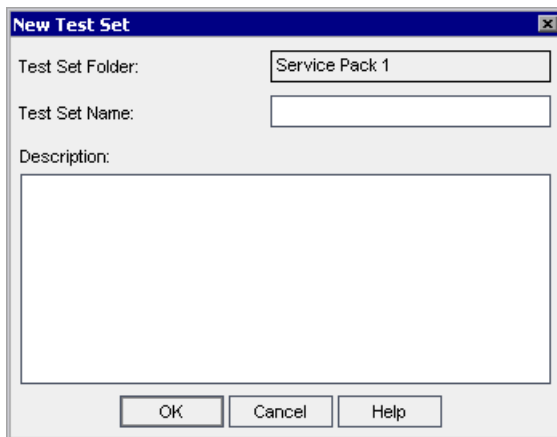
If the Test Lab module is not displayed, click the **Test Lab** button on the sidebar.

Choose **View** > **Test Sets Tree** to display test sets in the test sets tree.

2 Create a new test set.

In the test sets tree, choose the **Service Pack 1** folder and click the **New Test Set** button. The New Test Set dialog box opens.

New Test Set	☒
Test Set Folder:	Service Pack 1
Test Set Name:	
Description:	

OK   Cancel   Help

Type the following:

Test Set Name: Test Run Schedule

Description: This test set is used to explain how to schedule a test run.

Click **OK**. The **Test Run Schedule** test set is added to the test sets tree in the left pane.

3 Add a test instance from the Sign-On/Sign-Off folder to the Test Run Schedule test set.

Click the **Execution Flow** tab. If the test plan tree is not open, click the **Select Tests** button. The test plan tree is displayed in the right pane.

In the **Find** box in the test plan tree, type sign and click the **Find** button to search for the **Sign-On/Sign-Off** folder. The **Sign-On/Sign-Off** folder is highlighted in the test plan tree.

Select the **Sign-On Page** test. Click the **Add Tests to Test Set** button. The Parameters of Test dialog box opens because you are adding a test instance with an unassigned parameter value to a test set. Click **Cancel** to close the dialog box. The test instance is added to the test set.

4 Add two additional test instances to the test set.

Drag the **Sign-On User Name** test to the Execution Flow area. The Parameters of Test dialog box opens. Click **Cancel**.

Double-click the **Sign-On Password** test to add it to the Execution Flow. The Parameters of Test dialog box opens. Click **Cancel**.
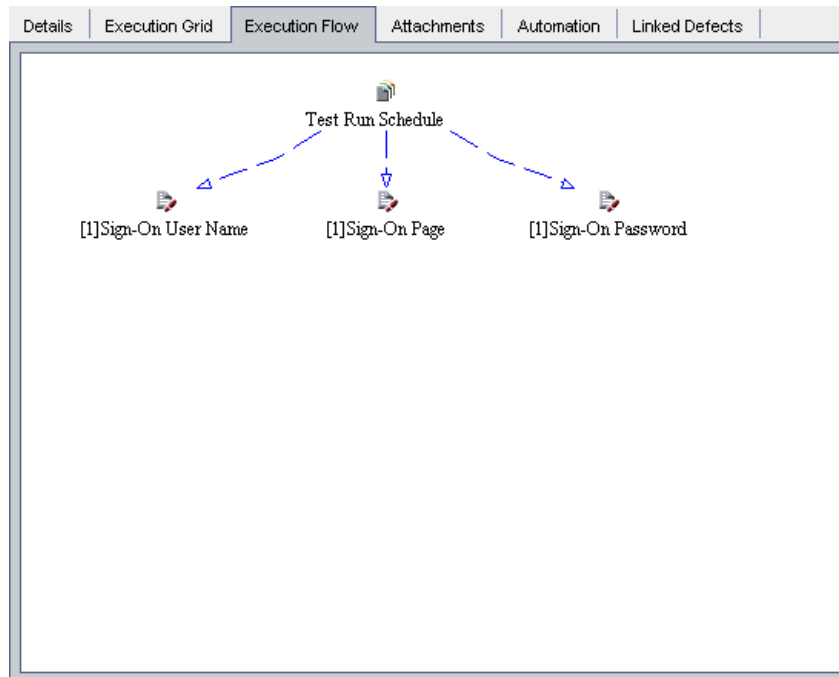
5 Add an execution condition to the Sign-On User Name test.

Right-click the **Sign-On User Name** test instance and choose **Test Run Schedule**. The Run Schedule dialog box opens and displays the Execution Conditions tab.
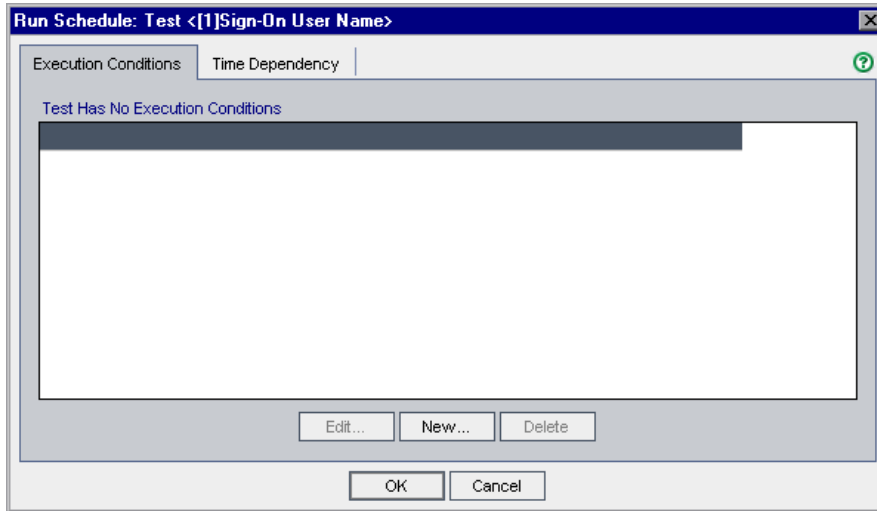
Click **New**. The New Execution Condition dialog box opens.
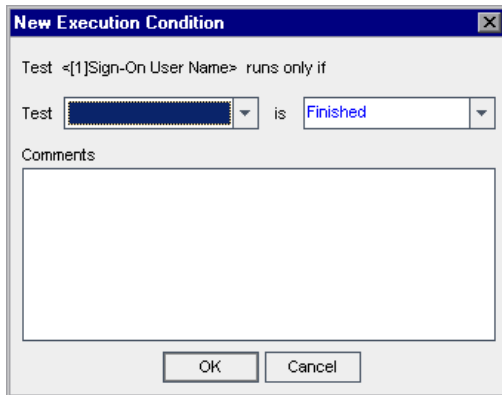
In the **Test** box, select **<[1]Sign-On Page>**.

Select **Passed** from the list on the right to instruct Quality Center to execute the **Sign-On User Name** test instance only if the **Sign-On Page** test instance finishes executing and passes.

Click **OK**. The condition is added to the Run Schedule dialog box.
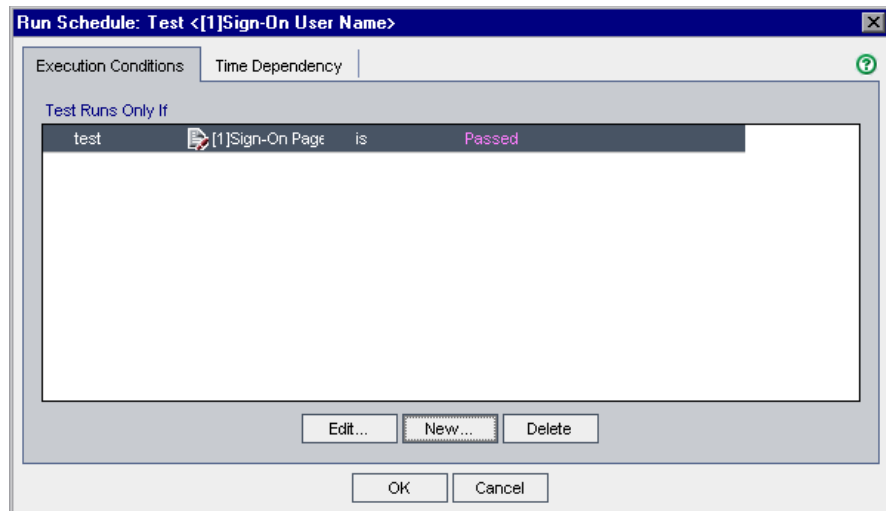
6 Add a time dependency condition to the Sign-On User Name test instance.

Click the **Time Dependency** tab.

89
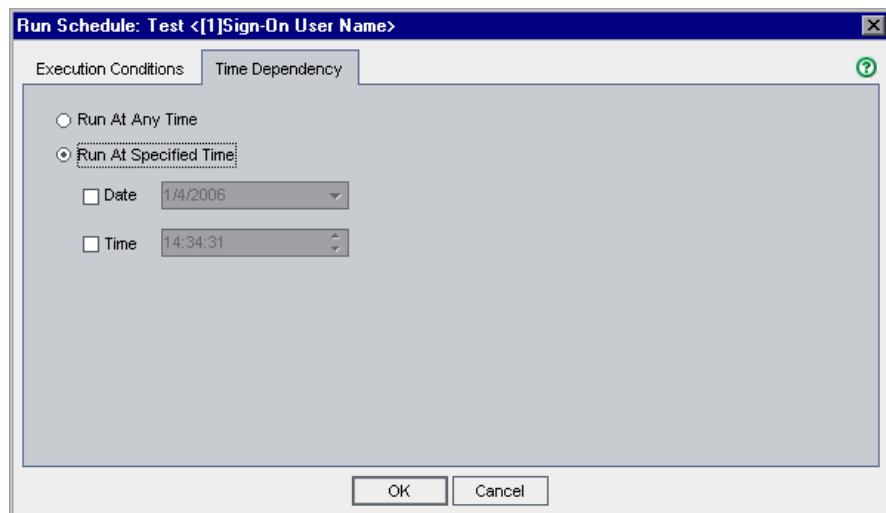
Under **Run At Specified Time**, select the **Date** check box and select tomorrow's date.

Click **OK** to close the Run Schedule dialog box. Your conditions are displayed in the Execution Flow diagram.
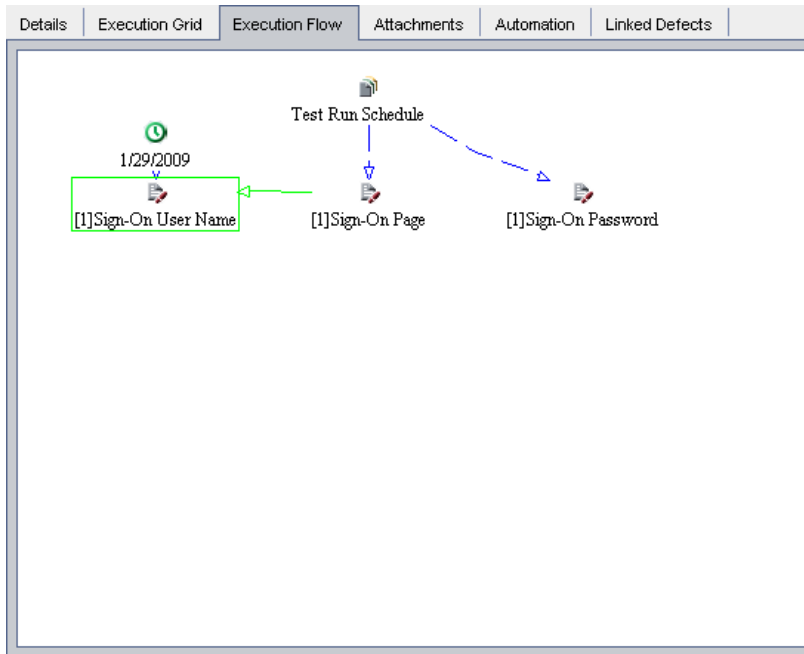
7 **Add an execution condition to the Sign-On Password test.**

Add the same execution condition as described in Step 5 on page 88 for the **Sign-On Password** test. This time select **Sign-On User Name** from the **Test** box in the New Execution Condition dialog box.

8 Add a time dependency condition to the Sign-On Password test.

Add the same time dependency condition as described in Step 6 on page 89 for the **Sign-On Password** test.

Click **OK** to close the Run Schedule dialog box. Your conditions are displayed in the Execution flow diagram.
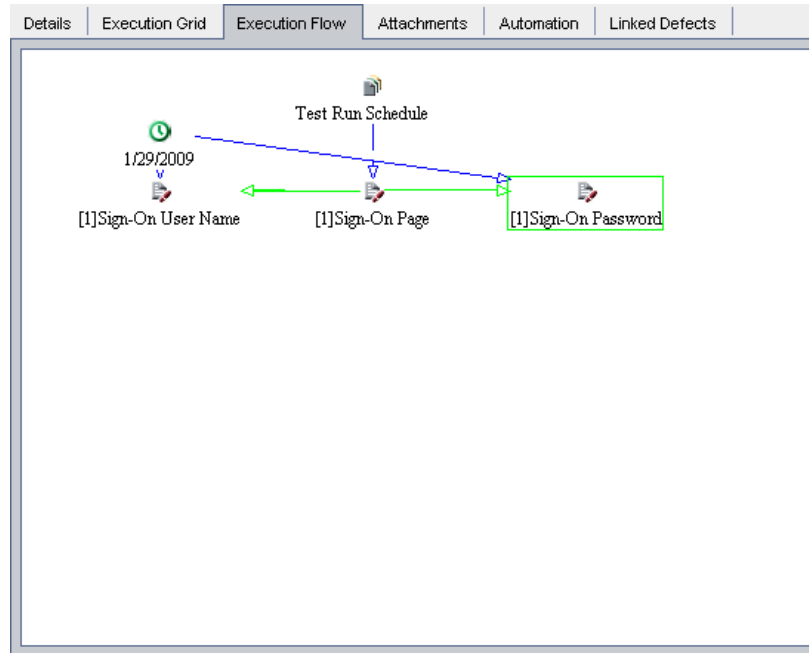
9 Rearrange the tests in a hierarchical layout.

Click the **Arrange Layout** button.
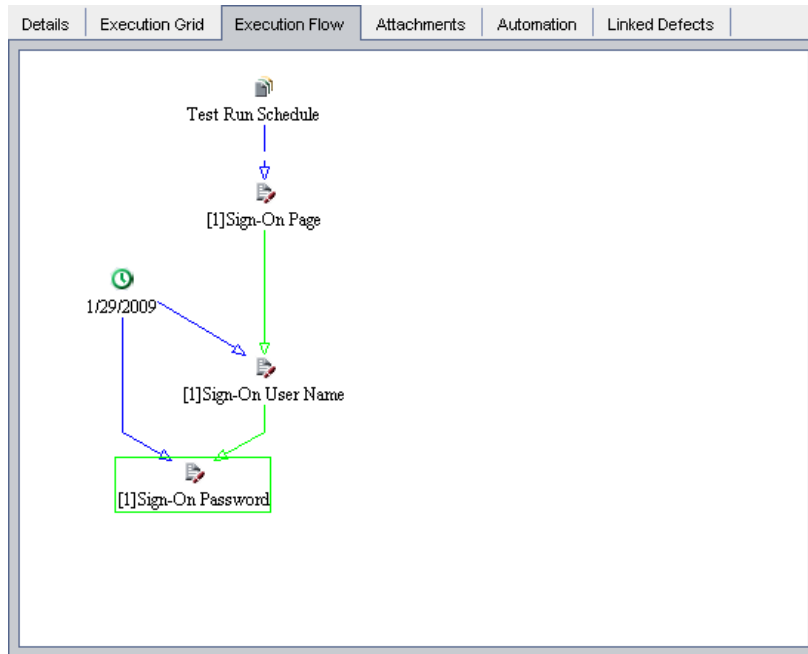
Running Tests Manually

When you run a test manually, you follow the test steps and perform operations on your application. Then, you compare the expected results with the actual outcome and record the results. You can execute a manual test as many times as needed. The results are stored separately for each run.

You can run both manual and automated tests manually. You can also choose to run a single test or to run an entire test set.

In this exercise, you will run the **Cruise Booking** and **Cruise Search** tests.

To run a test manually:

1 Make sure the Test Lab module is displayed.

If the Test Lab module is not displayed, click the **Test Lab** button on the sidebar. Click the **Execution Grid** tab.

Choose **View** > **Test Sets Tree** to display test sets in the test sets tree.

2 Select the Mercury Tours Site test set.

In the test sets tree, under **Service Pack 1**, expand the **Cycle 1 - New Features** test set folder. Select the **Mercury Tours Site** test set.

3 Select the Cruise Booking test from the Execution Grid.

In the Execution Grid tab, select **Cruise Booking**.

Click the **Run** button. The Manual Runner dialog box opens.
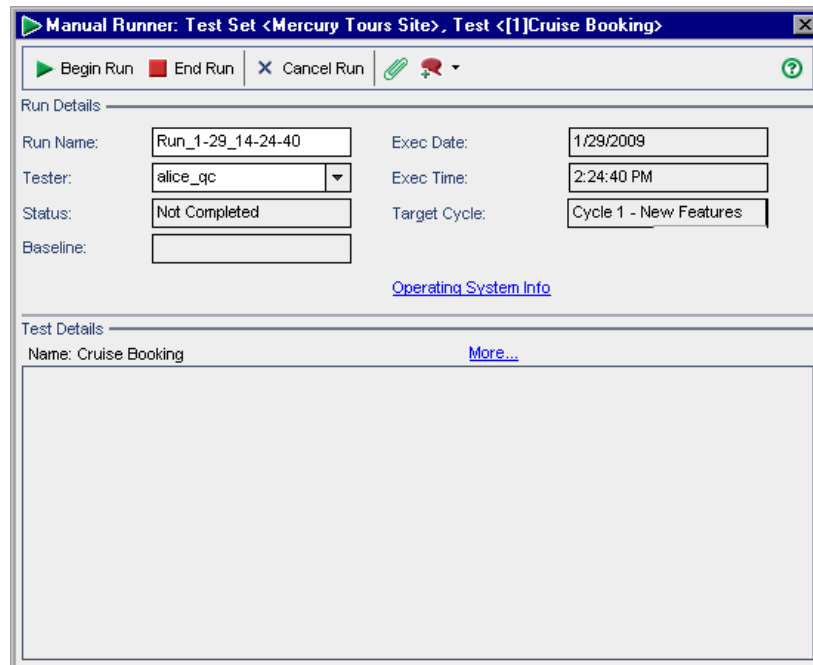
4 Start the test run.

Click the **Begin Run** button. The Parameters of Test Run dialog box opens because you have an unassigned parameter in the test.
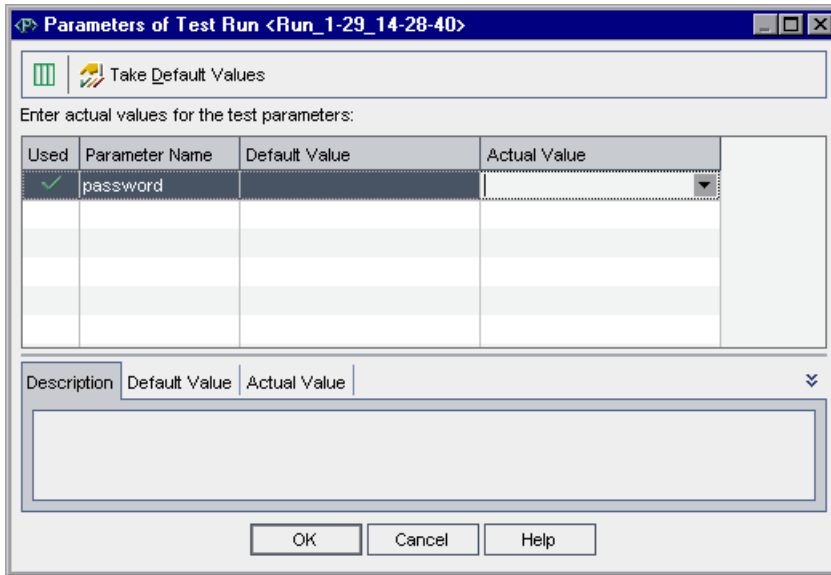
5 Assign a value for the password parameter.

Click the **Actual Value** box for **password** and type the same password you used in Mercury Tours. For more information, see "The Mercury Tours Sample Web Site" on page 24.

Click **OK**. The Manual Runner dialog box opens.

Step Name	Source Test	Status	Exec Date	Exec Time
rcury Tours Site	Connect	No Run	1/29/2009	3:08:44 PM
Sign-On to Merci	Sign-On	No Run	1/29/2009	3:08:44 PM
Display the Cruis	Cruise Bookin	No Run	1/29/2009	3:08:44 PM
Display the Cruis	Cruise Bookin	No Run	1/29/2009	3:08:44 PM
Book the cruise.	Cruise Bookin	No Run	1/29/2009	3:08:44 PM
Print cruise confi	Cruise Bookin	No Run	1/29/2009	3:08:44 PM
Log off.	Cruise Bookin	No Run	1/29/2009	3:08:44 PM

Manual Runner: Test Set <Mercury Tours Site>, Test <[1]Cruise Booking>

Filter by: All

Description

Open your Web browser and type <html://lab1/mtours/index.html>.

Expected:
The Mercury Tours site opens.

Actual:

95

6 Display the Manual Runner dialog box in a compact view.

Click the **Compact view** button. This enables you to read each step individually and record the results.
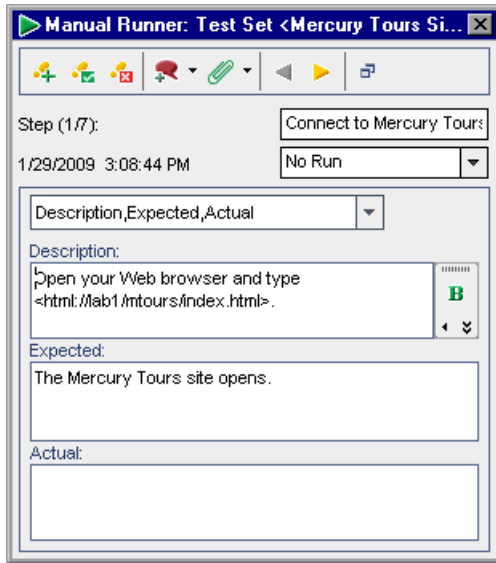
7 Perform the first step.

Perform the procedure described in the **Description** box.

If the actual result is the same as the expected result, in the **Actual** box, type: The Mercury Tours site opens.

Click the **Pass Selected** button. Step 2 is displayed.

8 Perform the second step.

Perform the procedure described in the **Description** box.

If the actual result is the same as the expected result, in the **Actual** box, type: The Flight Finder page opens.

Click the **Pass Selected** button. Step 3 is displayed.

9 Perform the third step.

Perform the procedure described in the **Description** box.

If the actual result is the same as the expected result, in the **Actual** box, type: The Cruise Special page opens.

Click the **Pass Selected** button. Step 4 is displayed.

10 Perform the fourth step.

Perform the procedure described in the **Description** box.

If the actual result is different than the expected result, in the **Actual** box, type: The Flight Finder page opens instead of the Cruise Reservation page.

Click the **Fail Selected** button.

Note: When you detect an application flaw while running the test, you can click the **New Defect** button to open the New Defect dialog box and add a defect. For the purpose of this exercise, you will submit this defect in "Adding New Defects" on page 109.

---

11 Return to the default display of the Manual Runner.

Click the **Back to Steps Grid** button. The default display of the Manual Runner: Step Details dialog box is displayed.

12 End the test run.

Click the **End Run** button to end your test run.

13 Run the Cruise Search test.

In the Execution Grid tab, select the test **Cruise Search** and click the **Run** button. The Manual Runner opens.

Perform the steps for the test as you did for the **Cruise Booking** test, but this time pass each step.

14 View the test run results in the Execution Grid.

Following the execution of your tests, you can view the test run results of your last run in the Execution Grid. Note that the test run status for the **Cruise Booking** test is updated from No Run to Failed and the test run status for the **Cruise Search** test is updated from No Run to Passed.

				Plan: Test Name	Plan: Type	Status	Iterations	Plan
				[1]Cruise Search	MANUAL	✔ Passed		
				[1]Cruise Booking	MANUAL	✘ Failed		
				[1]Cancell All Reservations	WR-AUTOMATED	▶ No Run		
				[1]Airline Preference	WR-AUTOMATED	▶ No Run		
				[1]Number Of Passengers	QUICKTEST_TEST	▶ No Run		

15 View the results of each test step in the Last Run Result pane.

Select the **Cruise Booking** test. If the Last Run Result pane is not displayed, click the **Show** button on the bottom of the pane. The Last Run Result pane is displayed below the Execution Grid.

	Step Name	Status	Exec Date	Steps Details
	Connect to Mercury	✔ Passed	1/29/2009	**Description:** Open your Web browser and type the <html:/lab1/mtours/index.html>.
	Sign-On to Mercury	✔ Passed	1/29/2009	
	Display the Cruise S	✔ Passed	1/29/2009	
	Display the Cruise R	✘ Failed	1/29/2009	**Expected:** The Mercury Tours site opens.
	Book the cruise.	▶ No Run	1/29/2009	
	Print cruise confirma	▶ No Run	1/29/2009	**Actual:** The Mercury Tours site opens.
	Log off.	▶ No Run	1/29/2009	

Click each step to view its description, as well as the expected and actual results.

Viewing and Analyzing Test Results

Quality Center provides a number of features that enable you to view and analyze the results of your tests.

This section includes:

➤ Viewing Test Results

➤ Viewing Test Coverage

➤ Viewing Coverage Progress

You can also use Quality Center reports and graphs to further analyze your test results. For more information, see "Generating Reports and Graphs" on page 129.

Viewing Test Results

You can view results for a test in the Test Instance Properties dialog box. This includes details of a test's runs, attachments, linked defects, and history.

In this exercise, you will learn how to view test run information in the Test Instance Properties dialog box.

To view test results:

1 Make sure the Test Lab module is displayed.

If the Test Lab module is not displayed, click the **Test Lab** button on the sidebar.

Choose **View** > **Test Sets Tree** to display test sets in the test sets tree.

2 Display the Mercury Tours Site test set in the Execution Grid.

Click the **Execution Grid** tab.

In the test sets tree, expand the **Cycle 1 - New Features** test set folder under **Service Pack 1**. Select the **Mercury Tours Site** test set.
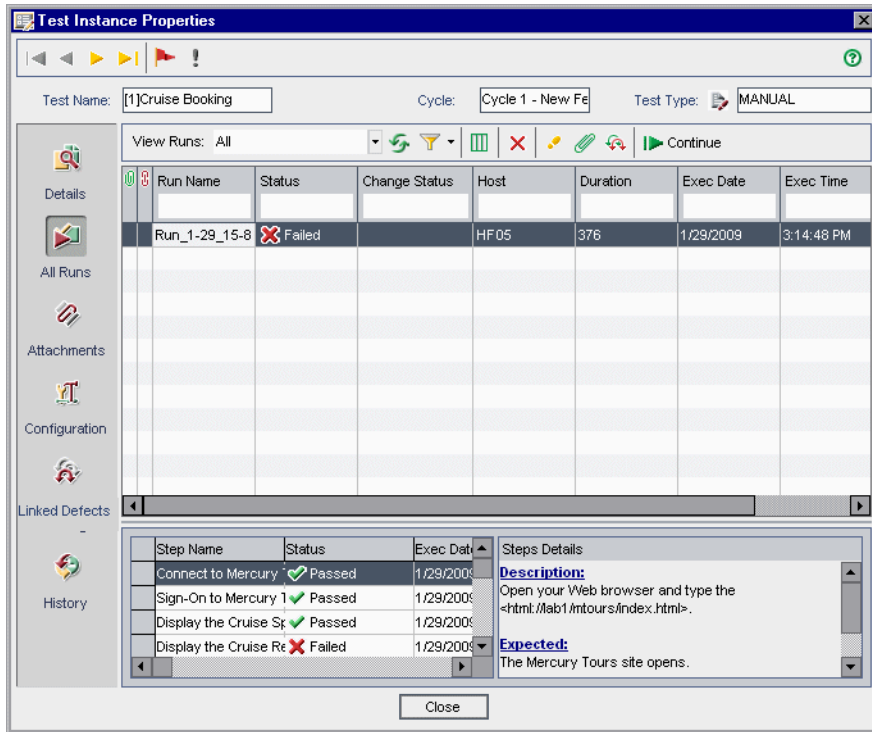
3 Select the Cruise Booking test from the Execution Grid.

In the Execution Grid tab, select **Cruise Booking**.

4 View detailed test results from the Test Instance Properties dialog box.

Click the **Test Instance Properties** button. The Test Instance Properties dialog box opens and displays the All Runs view.

5 View other test run information in the Test Instance Properties dialog box.

Click **Details** to view run details of the test.

Click **Configuration** and select the **Manual Parameters** tab to view manual parameters for the test. Note that any changes that you make will be implemented in the next test run.

Click **Linked Defects** to view and manage defect links made to other Quality Center entities.

Click **History** to view a list of changes made to the test run fields.

6 Close the Test Instance Properties dialog box.

Click the **Close** button.

Viewing Test Coverage

You previously saw how you can use the Coverage Analysis view to analyze the breakdown of child requirements according to their tests coverage (see "Analyzing Test Coverage" on page 68).

In this exercise, you will learn how to filter the tests included in the coverage analysis by cycle.

Quality Center Starter Edition: This exercise is not available for Quality Center Starter Edition.

To view test coverage:

1 **Open the Requirements module in the Coverage Analysis view.**

Click the **Requirements** button on the sidebar.

Choose **View** > **Coverage Analysis**.

2 **Filter the tests included in the coverage analysis by cycle.**

On the upper-right side of the window, click the browse button in the **Coverage calculation by cycle** box.

In the releases tree, expand the release folder **Service Packs** and the release **Service Pack 1.** Select the **Cycle 1 - New Features** check box and click **OK**.

Expand the **Cruise Reservation** requirement. In the Coverage Analysis column, you can see that both sub-requirements have failed. This is because the tests covered by the requirement failed.
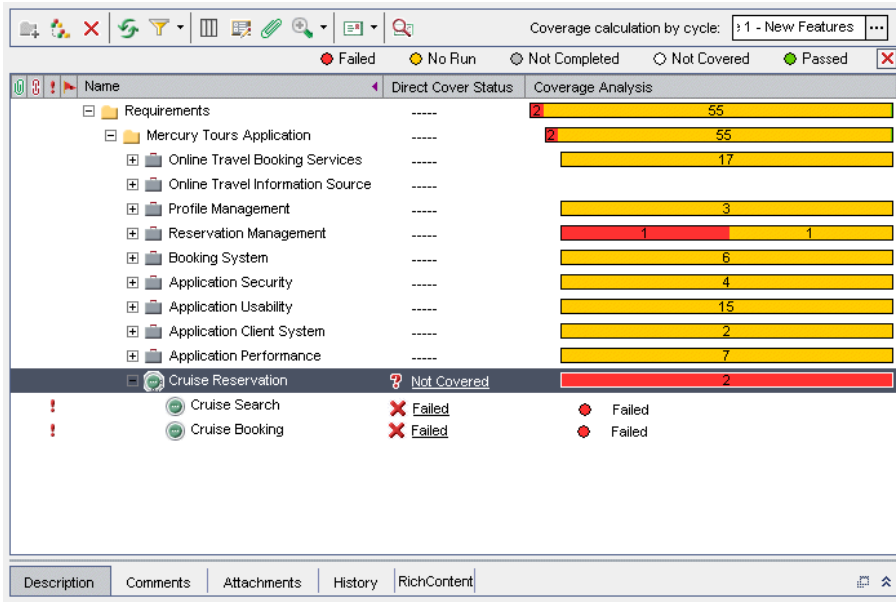
Viewing Coverage Progress

You were previously introduced to the Progress tab in the Releases module (see "Viewing Releases and Cycles" on page 31). In this exercise, you will view the graphs and statistics that now reflect the results of tests you ran in previous exercises.

**Quality Center Starter Edition:** This exercise is not available for Quality Center Starter Edition.

To view coverage progress:

1 Open the Releases module.

Click the **Management** button on the sidebar and then click the **Releases** tab.

2 View the effect of your test runs on the Progress tab.

In the releases tree, expand the release folder **Service Packs** and the release **Service Pack 1**. Select **Cycle 1 - New Features** and click the **Progress** tab.
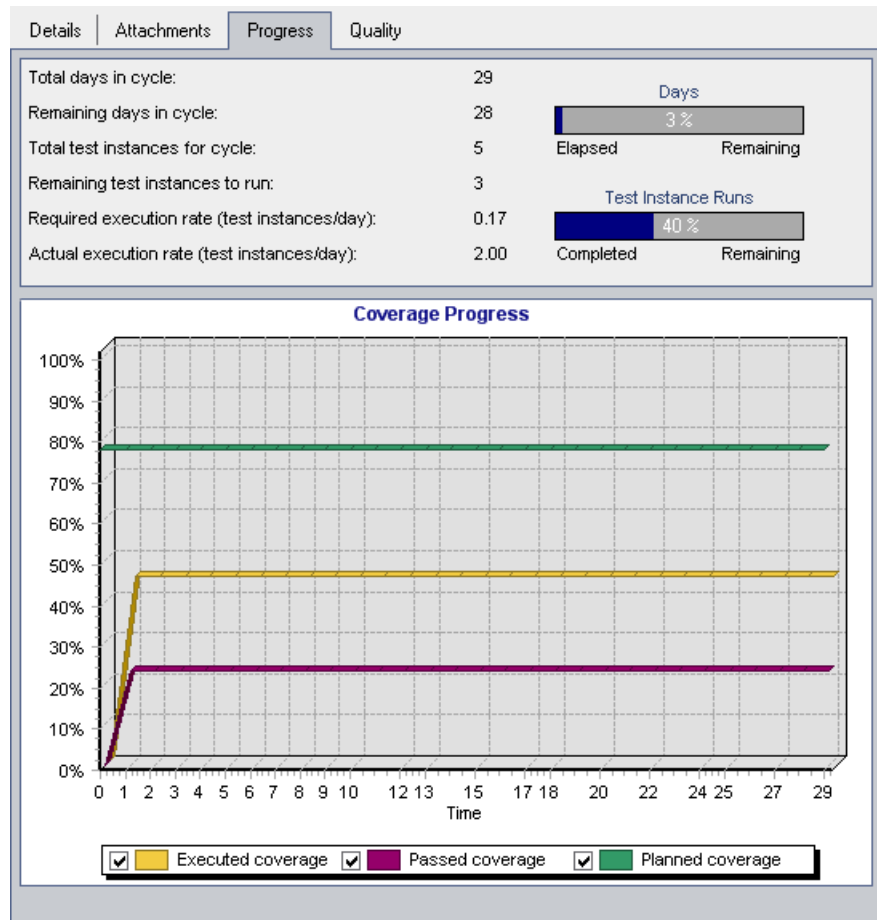
The top pane shows information such as the total and remaining days in the cycle, total test instances for the cycle, and actual and remaining test instances to run.

The bottom pane displays the Coverage Progress graph. **Planned coverage** indicates the percentage of tests planned to be run each day within a cycle. **Executed coverage** indicates the percentage of tests that ran each day within a cycle. **Passed coverage** indicates the percentage of tests that ran successfully each day within a cycle.

Running Tests Automatically

When you run an automated test, Quality Center automatically opens the selected testing tool, which runs the test on your local machine or on remote hosts, and imports the results to Quality Center.

You can run all tests in a test set or run specific tests. You can run tests from the Execution Grid tab or the Execution Flow tab.

In this exercise, you will run an automated test from the Mercury Tours Site test set.

To run a test automatically:

1 Make sure the Test Lab module is displayed.

If the Test Lab module is not displayed, click the **Test Lab** button on the sidebar.

Choose **View** > **Test Sets Tree** to display test sets in the test sets tree.

2 Display the Mercury Tours Site test set in the Execution Grid.

Click the **Execution Grid** tab.

In the test sets tree, expand the **Cycle 1 - New Features** test set folder under **Service Pack 1**. Select the **Mercury Tours Site** test set.
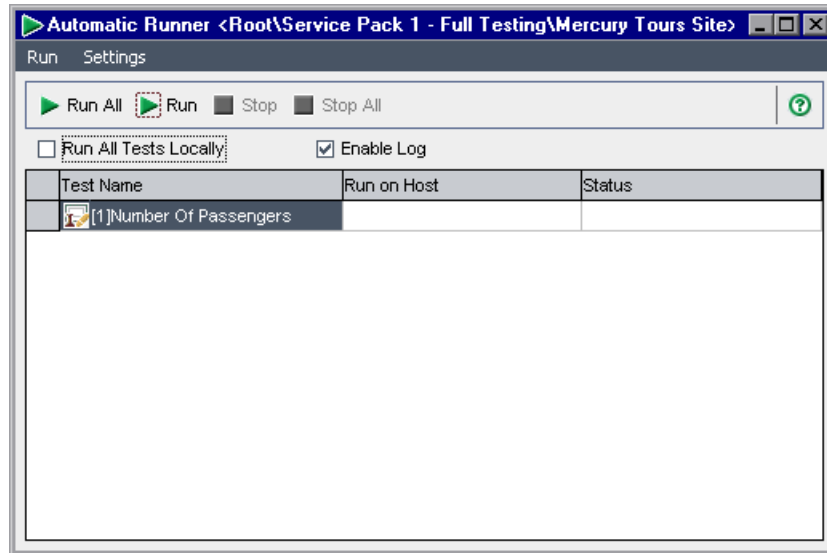
3 Select a test.

To run a WinRunner test, select **Airline Preference**.

To run a QuickTest Professional test, select **Number of Passengers**.

Click the **Run** button. The Automatic Runner dialog box opens and displays the selected test.

4 Set the test run settings.

Select the **Run All Tests Locally** check box to run the test on your local computer.

5 Run the test.

Click the **Run** button. Quality Center opens the selected testing tool automatically and runs the test. You view the test execution progress in the **Status** column.
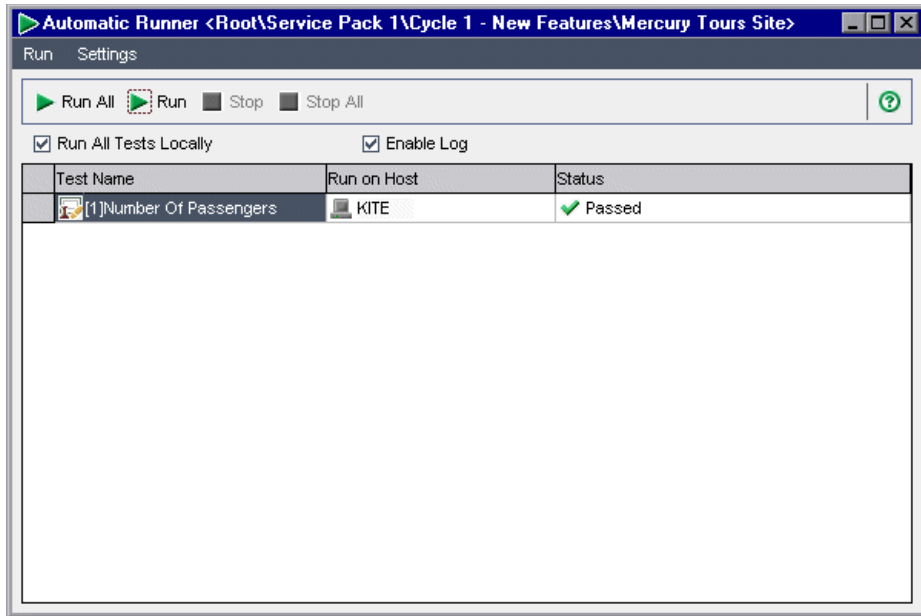
6 Close the Automatic Runner dialog box.

After the test run is complete, choose **Run > Exit**.

7 View a summary of test results in the Execution Grid.

The Execution Grid displays the updated status for the test run. Results for each test step appear in the Last Run Result pane.

8 Close your selected testing tool.

In QuickTest Professional or WinRunner, choose **File > Exit**.

6

Adding and Tracking Defects

Locating and repairing defects is an essential phase in application development. Defects can be detected and submitted by users in all stages of the application life cycle management process. Using Quality Center, you can submit defects detected in the application and track them until they have been repaired and retested.

In this lesson, you will learn about:

How to Track Defects

When you submit a defect to a Quality Center project, it is tracked through these stages: New, Open, Fixed, and Closed. A defect may also be Rejected or it may be Reopened after it is fixed.
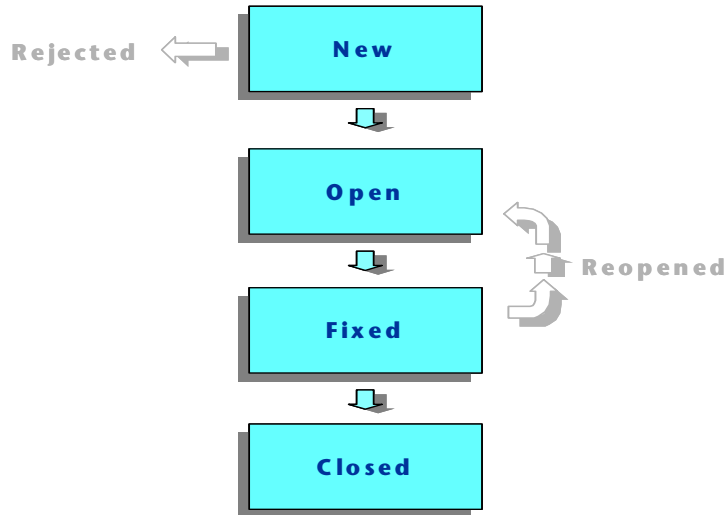
When you initially report the defect to a Quality Center project, it is assigned the status **New**, by default. A quality assurance or project manager reviews the defect and determines whether or not to consider the defect for repair. If the defect is refused, it is assigned the status **Rejected**. If the defect is accepted, the quality assurance or project manager determines a repair priority, changes its status to **Open**, and assigns it to a member of the development team. A developer repairs the defect and assigns it the status **Fixed**. You retest the application, making sure that the defect does not recur.

If the defect recurs, the quality assurance or project manager assigns it the status **Reopened**. If the defect is repaired, the quality assurance or project manager assigns it the status **Closed**.

Adding New Defects

You can add a new defect to a Quality Center project at any stage of the application life cycle management process. In this exercise, you will submit the defect that was detected while running the **Cruise Booking** test.

To add a new defect:

1 Open the QualityCenter_Demo project.

If the **QualityCenter_Demo** project is not already open, log in to the project. For more information, see "Starting Quality Center" on page 17.

2 Display the Defects module.

Click the **Defects** button on the sidebar. The Defects Grid displays defect data in a grid. Each row in the grid displays a separate defect record.

3 Open the New Defect dialog box.

Click the **New Defect** button. The New Defect dialog box opens.

4 Describe the defect.

Perform the following:

Summary: Unable to reserve a cruise from the Cruise page.

Category: Defect

Severity: 2-Medium

Subject: Cruises

Description: The defect was detected in the Cruise Booking test. When you click the Now Accepting Reservations button, the Flight Finder page opens instead of the Cruise Reservation page.

5 Determine the cycle in which the defect was detected.

Quality Center Starter Edition: If you are using Quality Center Starter Edition, proceed to Step 6.

In the **Detected in Cycle** box, click the browse button. The releases tree opens. Expand the tree. In the **Service Packs** releases folder, in the **Service Pack 1** release, select the **Cycle 1 - New Features** cycle.

You can see that Quality Center automatically assigns the value **Service Pack 1** to the **Detected in Release** field. This is because **Cycle 1 - New Features** is part of the **Service Pack 1** release.

Click **OK** to close the releases tree.

6 Attach the URL address for the Mercury Tours page where the defect was detected.

Click the **Attach URL** button. The Attach Uniform Resource Locator (URL) dialog box opens.

Type the URL address of the Mercury Tours page:
http://<Quality Center server name>/mtours

Click **OK**. The URL name is displayed above the **Description** box.

7 Add the defect to the Quality Center project.

Click the **Submit** button. The defect is added to the Defects Grid.

8 Close the New Defect dialog box.

Click **Close**.

Matching Defects

Matching defects enables you to eliminate duplicate or similar defects in your project. Each time you add a new defect, Quality Center stores lists of keywords from the **Summary** and **Description** fields. When you search for similar defects, keywords in these fields are matched against other defects. Note that keywords must be more than two characters and letter case does not affect your results.

In this exercise, you will match defects by comparing a selected defect with all other existing defects in the **QualityCenter_Demo** project.

To match defects:

1 Make sure that the Defects module is displayed.

If the Defects module is not displayed, click the **Defects** button on the sidebar.

2 Select Defect ID 37.

If a filter is applied to the grid, click the **Set Filter/Sort** arrow and choose **Clear Filter/Sort** to clear the filter.
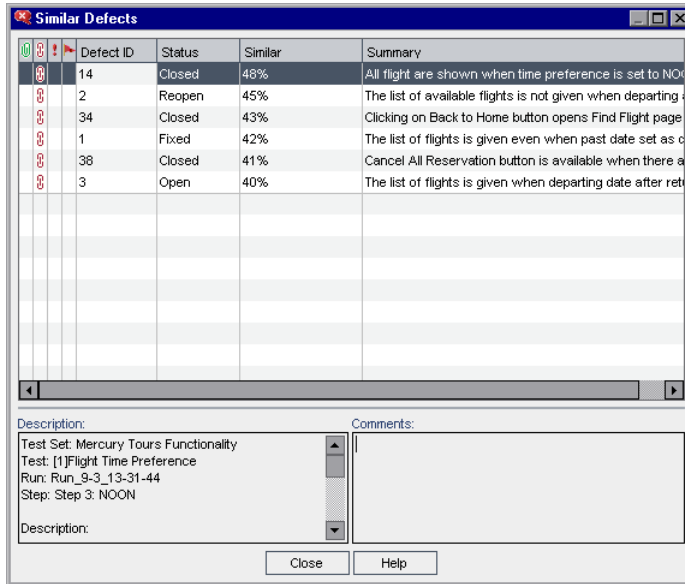
In the Defects Grid, select **Defect ID** 37.

3 Find similar defects.

Click the **Find Similar Defects** button.

The results are stored in the Similar Defects dialog box, sorted by the percentage of detected similarity. Note that there are no duplicate defects in the project for the selected defect.

Click **Close** to close the Similar Defects dialog box.

Updating Defects

Tracking the repair of defects in a project requires that you periodically update defects. You can do so directly in the Defects Grid or in the Defect Details dialog box. The ability to update some defect fields depends on your permission settings. After you have updated defects, you can view the current quality status of your release in the Release module.

In this exercise, you will update your defect information by changing the severity of a defect, assigning the defect to a cycle, and adding a comment. You will then see how updating defects is reflected in the Quality tab of the Releases module.

Quality Center Starter Edition: If you are using Quality Center Starter Edition, fields and commands related to cycles and releases are not available in Quality Center.

To update defects:

1 Make sure that the Defects module is displayed.

If the Defects module is not displayed, click the **Defects** button on the sidebar.

2 Open the Defect Details dialog box.

In the Defects Grid, select the defect you added in "Adding New Defects" on page 109. Click the **Defect Details** button. The Defect Details dialog box opens.

3 Change the severity level of the defect.

In the **Severity** box, select **5-Urgent**.

4 Determine the cycle in which the defect will be fixed.

Quality Center Starter Edition: If you are using Quality Center Starter Edition, proceed to Step 5.

In the **Target Cycle** box, click the browse button. The releases tree opens. Expand the tree. In the **Service Packs** releases folder, in the **Service Pack 1** release, select the **Cycle 2 - Full** cycle.

You can see that Quality Center automatically assigns the value **Service Pack 1** to the **Target Release** field. This is because the **Cycle 2 - Full** cycle is part of the **Service Pack 1** release.

Click **OK** to close the releases tree.

5 Add a new comment to explain the change in the severity level.

Click the **Add Comment** button. A new section is added to the **Comments** box, displaying your user name and the current date.

Type: This defect should be fixed in the next service pack.

6 View the Attachments.

Click **Attachments** on the sidebar. Note that the URL attachment is listed.

7 View Linked Entities.

Click **Linked Entities** on the sidebar to view entities that have been linked to the defect. Linked Entities can include requirements, tests, test sets, test instances, runs, run steps, and other defects. There are currently no linked entities. You will learn how to link a defect to a test in "Linking Defects to Tests" on page 116.

8 View the History.

Click **History** on the sidebar to view the history of changes made to the defect. For each change, the grid displays the date and time of the change and the name of the user who made the change. You can expand a change to view a list of fields modified during the change. For each field, the grid displays the old value and the new value.

9 **Close the Defect Details dialog box.**

Click **OK** to exit the dialog box.

10 **Update defects directly in the Defects Grid.**

Quality Center Starter Edition: If you are using Quality Center Starter Edition, ignore this step.

In the Defects Grid, select defect ID 23.

Click the **Detected in Cycle** box and click the drop-down arrow. In the releases tree, expand the release folder **Service Packs** and the release **Service Pack 1**. Select the **Cycle 1 - New Features** cycle and click **OK**.

Click the **Target Cycle** box and click the browse button. In the releases tree, expand the release folder **Service Packs** and the release **Service Pack 1**. Select the **Cycle 1 - New Features** cycle and click **OK**.

11 **Update defects 35 and 36.**

Quality Center Starter Edition: If you are using Quality Center Starter Edition, ignore this step.

Repeat step 10 for defects 35 and 36.

12 **View the number of defects opened in Cycle 1 - New Features on the Quality tab.**

Quality Center Starter Edition: If you are using Quality Center Starter Edition, ignore this step.

Click the **Management** button on the sidebar. In the Releases tab, expand the release folder **Service Packs** and the release **Service Pack 1**, and select the cycle **Cycle 1 - New Features**. Click the **Quality** tab.

In the **Defect Opening Rate** graph, you can see the defects detected in **Cycle 1 - New Features** according to defect severity.

In the **Outstanding Defects** graph, you can see the outstanding defects in **Cycle 1 - New Features** according to defect status.

Linking Defects to Tests

You can link a test in your test plan to a specific defect in the Defects Grid. This is useful, for example, when a new test is created specifically for a known defect. By creating linkage, you can determine if the test should be run based on the status of the defect. Note that you can also link the defect to other entities, such as requirements.

A defect can be linked directly or indirectly to an entity. When you add a defect link to an entity, Quality Center adds a direct link to this entity and indirect links to other related entities.

The following diagram illustrates the flow of indirect linkage:

For instance, when you link a defect to a run step, it adds an indirect link to its run, test instance, test set, and test. If the same test is covered by a requirement, an indirect link is also added to the requirement. Note that the indirect linkage is a one-directional flow. For example, if you link a defect to a run, it is not indirectly linked to its run steps.

In this exercise, you will link your defect to the **Cruise Booking** test in the Test Plan module, and view the linked test in the Defects Grid.

To link a defect to a test:

1 Display the Test Plan module.
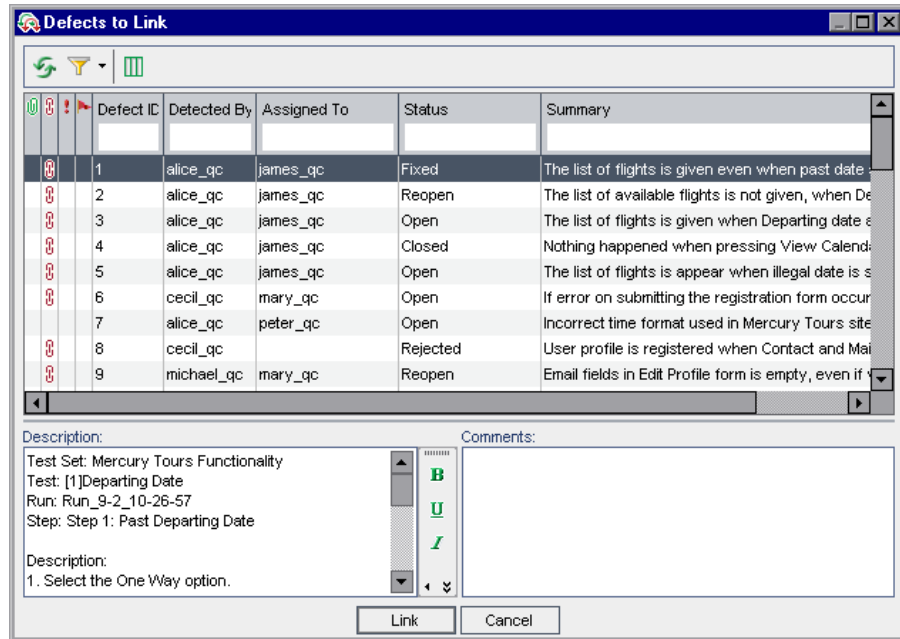
Click the **Test Plan** button on the sidebar.

2 Select the Cruise Booking test.

In the test plan tree, under **Cruises**, expand **Cruise Reservation** and select the **Cruise Booking** test. Click the **Linked Defects** tab.

3 Add a linked defect.

In the Linked Defects tab, click the **Link Existing Defect** arrow and choose **Select**. The Defects to Link dialog box opens.

Select the defect you added in "Adding New Defects" on page 109 and click the **Link** button. Your defect is added to the Linked Defects grid.

Note: If you cannot find your defect in the Defects to Link dialog box, click the **Set Filter/Sort** arrow and choose **Clear Filter/Sort** to clear the filter that is applied to the grid.

4 View the linked test in the Defects Grid.

Click the **Defects** button on the sidebar.

Double-click your defect in the Defects Grid. The Defect Details dialog box opens.

Click **Linked Entities** on the sidebar, and select the **Others** tab. The **Cruise Booking** test is linked to your defect.

Click **OK** to close the Defect Details dialog box.

Creating Favorite Views

A **favorite view** is a view of a Quality Center window with the settings you applied to it. For example, in the Defects Grid, you may want to apply a filter to display only the defects that were detected by you, are assigned to you, or have the status "Not Closed".

In this exercise, you will create a favorite view in the Defects Grid.
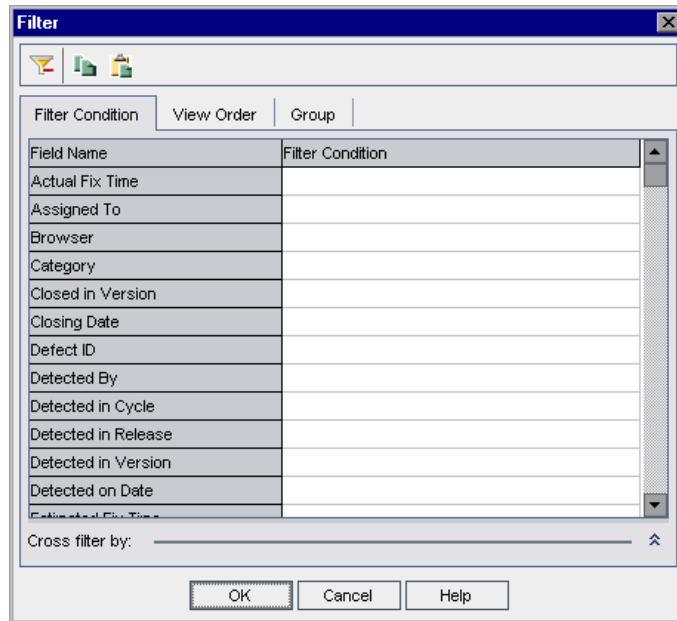
To create a favorite view:

1 Make sure that the Defects module is displayed.

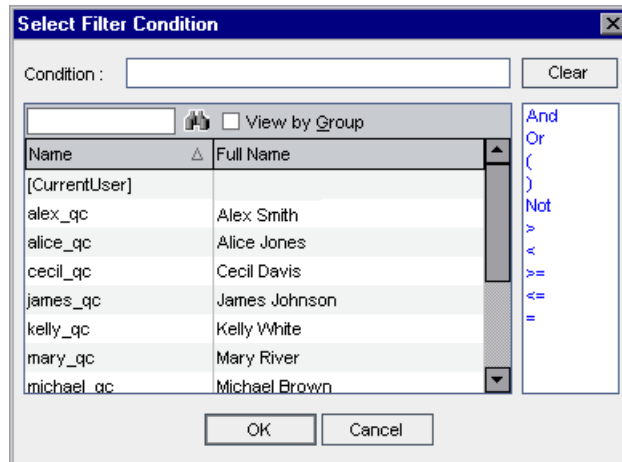If the Defects module is not displayed, click the **Defects** button on the sidebar.

2 Define a filter to view defects you detected that are not closed.

Click the **Set Filter/Sort** button. The Filter dialog box opens.

For the **Detected By** field, click the **Filter Condition** box. Click the browse button. The Select Filter Condition dialog box opens.

Under **Name**, select your Quality Center login user name (**alice_qc**, **cecil_qc**, or **michael_qc**). Click **OK** to close the Select Filter Condition dialog box.

For the **Status** field, click the **Filter Condition** box. Click the browse button. The Select Filter Condition dialog box opens.

In the right pane, click the logical expression **Not**.

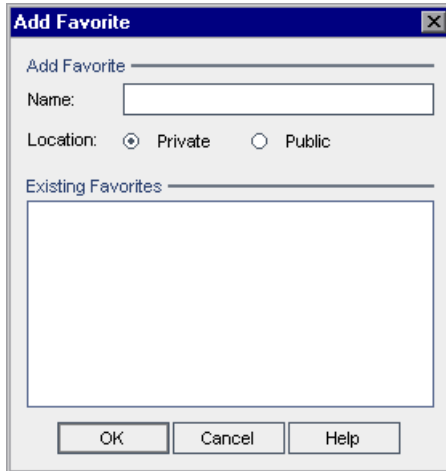In the left pane, select **Closed**.

Click **OK** to close the Select Filter Condition dialog box.

Click **OK** to apply your chosen filter.

The Defects Grid displays the defects you detected that are not closed.

3 Add a favorite view.

In the **Favorites** menu, choose **Add to Favorites**. The Add Favorite dialog box opens.

In the **Name** box, type: My detected defects (status 'Not Closed').

You can add a favorite view to either a **public** folder or a **private** folder. Views in the public folder are accessible to all users. Views in the private folder are accessible only to the person who created them. Select **Private**.

Click **OK**. The new view is added to your private folder.

7
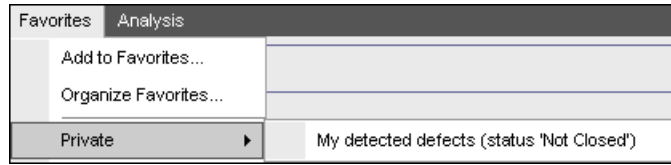
Alerting on Changes

You can instruct Quality Center to create alerts automatically and send email to notify those responsible when certain changes occur in your project that may impact the application life cycle management process. You can also add your own follow-up alerts.

To generate automatic notification alerts, your Quality Center project administrator must activate alert rules in Project Customization. Alert rules are based on associations you make in Quality Center between requirements, tests, and defects. When an entity in your project changes, Quality Center alerts any associated entities that may be impacted by the change. The alerts can be seen by all users. Quality Center also notifies the person responsible for the entity at the time of the change of any associated entities that may be impacted by the change.

Quality Center also enables you to add your own follow-up flag to a specific requirement, test, test instance, or defect to remind you to follow up on an issue. When the follow-up date arrives, Quality Center sends you an email reminder.

In this lesson, you will learn about:

Triggering an Alert

When a requirement, test, test instance, or defect in your project changes, Quality Center can notify those responsible for any associated entities. You can associate tests with requirements (see "Creating and Viewing Requirements Coverage" on page 63) and defects with other Quality Center entities (see "Linking Defects to Tests" on page 116). In addition, you can create traceability links between requirements. For more information on creating traceability links between requirements, see the *HP Quality Center User Guide*.

Quality Center can generate alerts for these changes:

What changed?	Which associated entities are flagged?	Who is notified?
Requirement (excluding change of status)	Tests	Test designers
	Requirements	Requirement authors
Defect status changed to **Fixed**	Test instances	Responsible testers
Test runs successfully	Defects	Users assigned to defects

In this exercise, you will trigger alerts for tests by changing the associated requirement. You will modify the **Cruise Booking** requirement and then you will view the flagged tests.

To trigger an alert:

1 **Display the requirements tree.**

Click the **Requirements** button on the sidebar, and choose **View** > **Requirement Details**.

2 **Select the requirement that you want to change.**

Under **Cruise Reservation**, select the **Cruise Booking** requirement.

3 **View the associated tests.**

To view the tests that will be impacted by the change, click the **Test Coverage** tab. The tab displays the associated tests.

4 Change the priority of the Cruise Booking requirement.

Click the **Details** tab.

Click the down arrow adjacent to the **Priority** box and select **5-Urgent**.

This change causes Quality Center to generate alerts for the tests associated with this requirement. Quality Center also sends email notification to the designers of these tests.

5 View the alert for the Cruise Booking test.

In the **Test Coverage** tab, click the **Cruise Booking** test. The test is highlighted in the test plan tree.
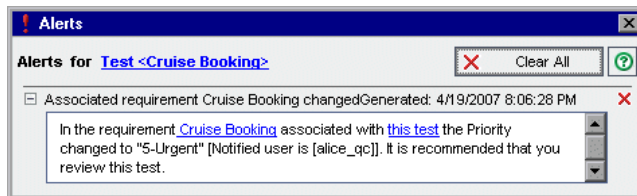
Click the **Refresh All** button.
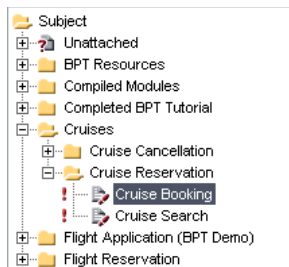
The **Cruise Booking** test has an alert flag !, indicating that a change was made to an associated requirement.

Click the **Alerts** flag for the **Cruise Booking** test. The Alerts dialog box opens.

The alert indicates the requirement and the change that triggered the alert. It also indicates the name of the person to whom Quality Center sends email notification of this change.

Click the close button.

6 **View the alerts of the other associated tests.**

In the test plan tree, view the alerts of the following tests: **Cruise Search**, **Cancel All Reservations**, **and Airline Preference**.

Creating Follow Up Alerts

Quality Center enables you to add your own alerts to remind you to follow up on outstanding issues. In this exercise, you will add a follow-up flag to a defect whose status you want to check one week from today.

When you add a follow-up flag, Quality Center also adds an information bar that reminds you about the follow-up alert. When the follow-up date arrives, Quality Center sends you an email reminder and changes the flag icon from gray to red.

Follow-up flags are specific to your user name, meaning that only you can see your follow-up alerts.

To create a follow up alert:

1 **Display the Defects module.**

Click the **Defects** button on the sidebar.

2 **Select the defect that you want to flag with a follow up reminder.**

In the Defects Grid, select a defect.

3 Create the follow up alert.

Click the **Flag for Follow Up** button. The Flag For Follow Up dialog box opens.

Perform the following:

Follow up by: Select the date one week from today.
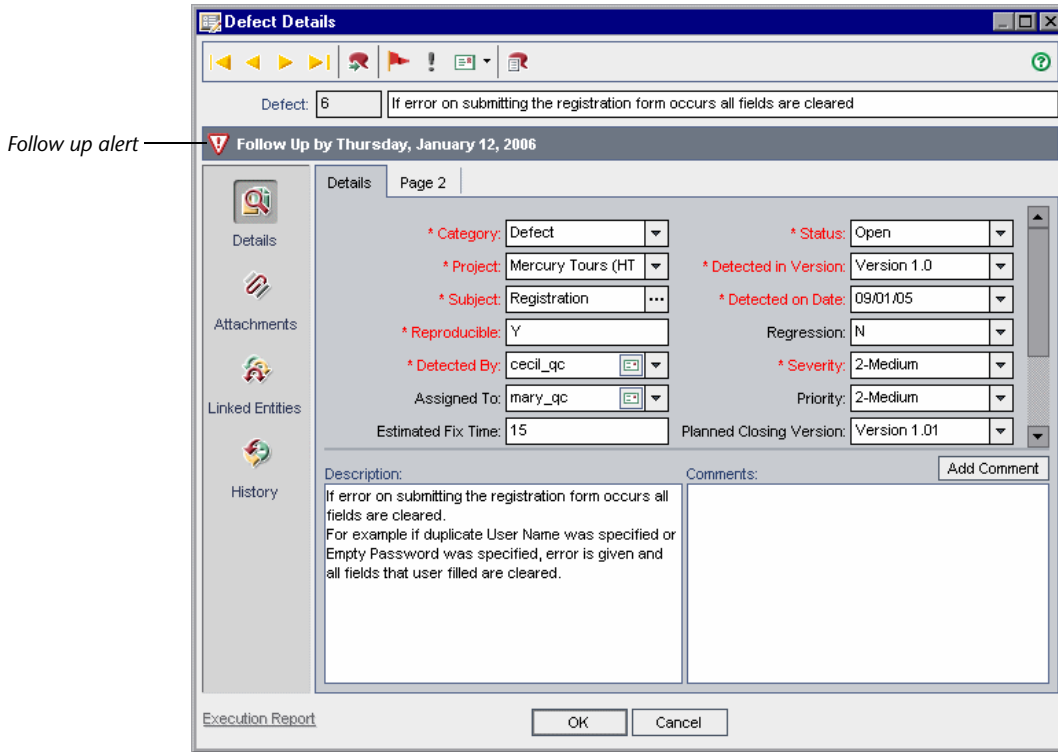
Description: Type: Remind me about this defect on this date.

Click **OK**. The flag icon ▶ is added to the defect record.

4 Display the information bar for your follow up alert.

Double-click the defect with the follow up flag. The Defect Details dialog box opens and displays an information bar with your follow up alert.

Follow up alert —

Click **Cancel** to close the dialog box.

8

Generating Reports and Graphs

Quality Center reports and graphs help you assess your application life cycle management process. You can generate reports and graphs at any time during the process.

You can create reports and graphs either in the Dashboard module, or during your work in the Requirements, Test Plan, Test Lab, or Defects modules. In either case, you can save the reports and graphs in the Dashboard module for future reference.

Using the Dashboard module, you can also create dashboard pages that display multiple graphs side-by-side.

In this lesson, you will learn about:

➤ Generating Reports on page 130

➤ Generating Graphs on page 138

➤ Generating Dashboard Pages on page 145

Generating Reports

You can create reports in the Dashboard module that display data from the Requirements, Test Plan, Test Lab, and Defects modules. You can also create quick reports directly from the Requirements, Test Plan, Test Lab, and Defects modules.

This section includes:

➤ Generating Reports in the Dashboard Module

➤ Generating Quick Reports

Generating Reports in the Dashboard Module

You create reports in the Dashboard module and you can determine what data to include.

Reports are placed in either a public folder or a private folder. Reports in a **public** folder are accessible to all users. Reports in a **private** folder are accessible only to the user who created them.

In this exercise, you will create and configure a requirement report using the Dashboard module.

To generate a report in the Dashboard module:

1 Open the QualityCenter_Demo project.

If the **QualityCenter_Demo** project is not already open, log in to the project. For more information, see "Starting Quality Center" on page 17.

2 Display the Dashboard module.

Click the **Dashboard** button on the sidebar to display the Dashboard module.

If the Analysis View tab is not already displayed, click the **Analysis View** tab.

3 Add a folder to the Private root folder.

In the tree, select the **Private** folder.

Click the **New Folder** button. The New Folder dialog box opens.

In the **Folder Name** field, type Requirements.

Click **OK**. The new folder is added as a sub-folder of the Private folder. The Details tab displays the folder name and the user that created the folder.

In the **Description** tab, type This folder includes requirement reports.

4 Create a report.

Click the **New Item** button and select **New Standard Report**. The New Standard Report dialog box opens.

Under **Entity**, select **Requirements**.

Under **Standard Report Name**, type Requirement report.

Click **OK**. The report is added to the private folder.
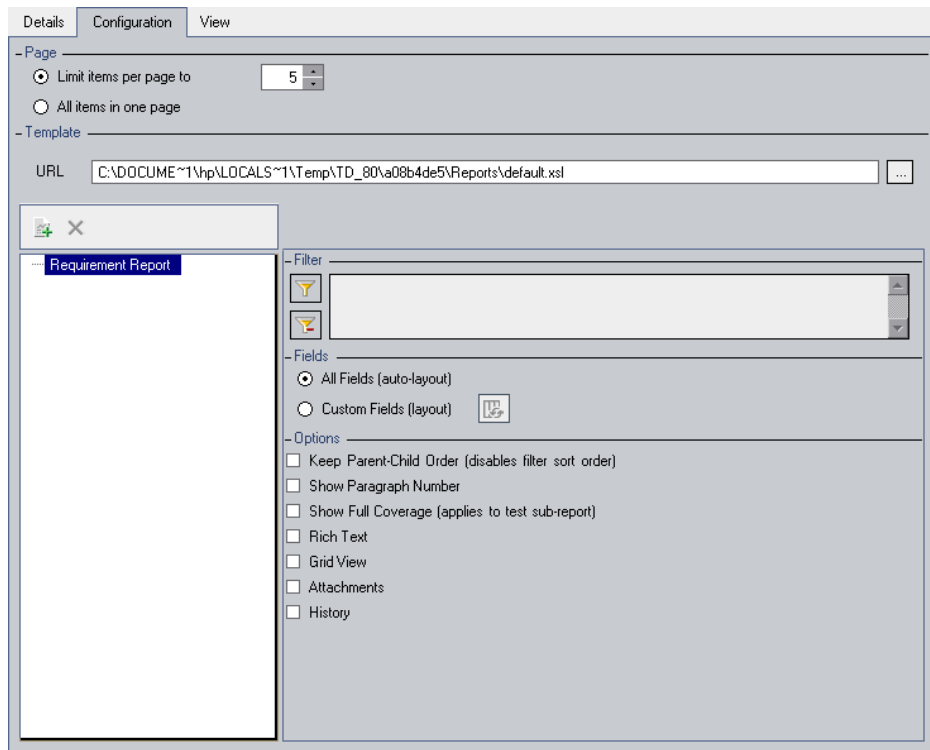
5 Add report description.

Click the **Details** tab.

In the **Description** field, type This is my private requirement report.

131

6 Display the customization options.

Click the **Configuration** tab.

Using the Configuration tab, you can determine the appearance and contents of your Quality Center reports.

7 Set the number of items per display page.

Under **Page**, select **All items in one page** to display all items in one page.

8 Define a filter to view requirements created by a specific user name.

Under **Filter**, click the **Set Filter/Sort** button. The Filter dialog box opens.

For the **Author** field, click the **Filter Condition** box. Click the browse button. The Select Filter Condition dialog box opens.
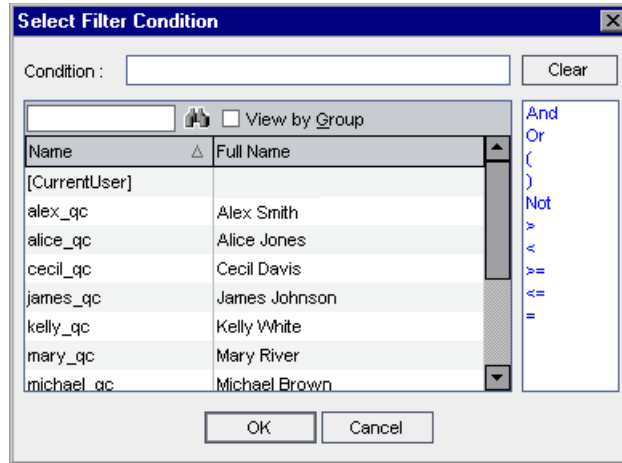
Under **Name**, select your Quality Center login user name (**alice_qc**, **cecil_qc**, or **michael_qc**). Click **OK** to close the Select Filter Condition dialog box.

Click **OK** to close the Filter dialog box.

9 Display the report as a grid.

Under **Options**, select **Grid View**.

10 Generate the report.

Click the **View** tab to generate a report with the updated settings.

| Details | Configuration | View |

| ☰ Generate 🖨 ▾ 💾 ▾ | 1 - 12 of [12] |◀ ◀ ▶ ▶| 🖳 |

Requirements Report

Filter: Author[alice_qc]

Author	Creation Date	Creation Time	Direct Cover Status	Modified	Name	Old Type (obsolete)	Priority	Product	RBQM business impact	RE cu bu im
alice_qc (Alice Jones)	02/13/2005	3:14:36 PM	Not Covered	10/09/2008 17:33:28	American Express	-----	4-Very High	Mercury Tours	B	
alice_qc (Alice Jones)	02/13/2005	3:13:16 PM	Not Covered	10/09/2008 17:20:08	Blue Skies Airlines	-----	4-Very High	Mercury Tours	C	
alice_qc (Alice Jones)	02/11/2009	10:09:19 AM	Failed	02/11/2009 14:51:57	Cruise Search		4-Very High	Mercury Tours Web Site		
alice_qc (Alice Jones)	02/11/2009	10:11:21 AM	Failed	02/11/2009 14:51:58	Crusie Booking		4-Very High	Mercury Tours Web Site		
alice_qc (Alice Jones)	02/13/2005	3:13:44 PM	Not Covered	10/09/2008 17:20:14	Pangea Airlines	-----	4-Very High	Mercury Tours	C	

Last Generated: 2/17/2009 10:38:04 AM

This report lists the requirements that appear in the current requirements view by the specified author.

Generating Quick Reports

Quick reports are reports that display data in the Requirements, Test Plan, Test Lab and Defects modules. When you create quick reports, you can choose from a list of predefined reports, or you can create reports on selected records for immediate display.

You can use quick reports for one-time reference, or save them in the Dashboard module, where you can continue to configure their data and appearance.

In this exercise, you will generate a standard report from the Requirements module and save it in the Dashboard module.
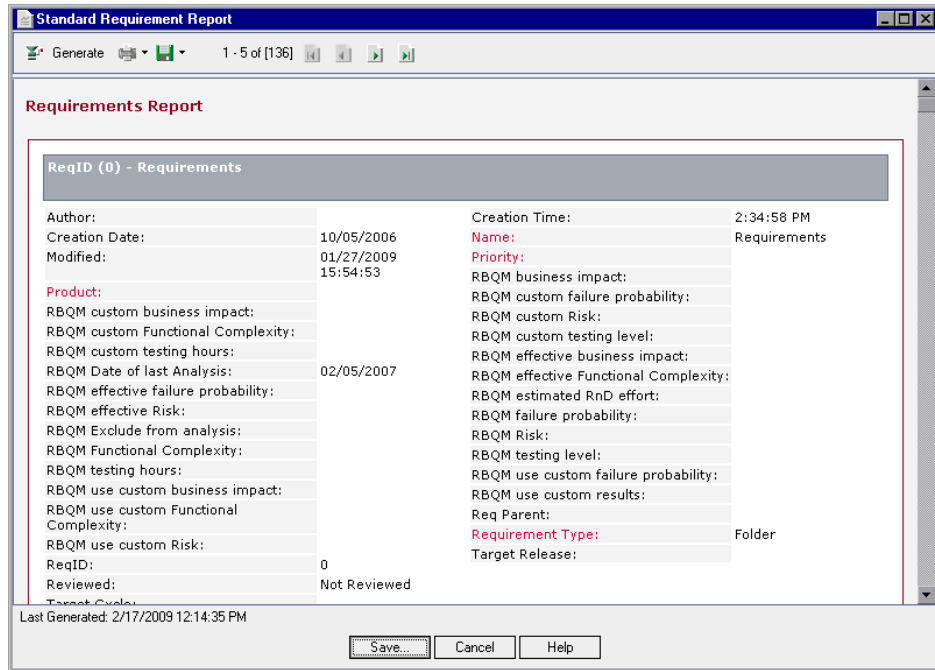
To generate a quick report:

1 Display the Requirements module.

Click the **Requirements** button on the sidebar to display the Requirements module.

If the Requirements Tree view is not already displayed, choose **View > Requirements Tree**.

2 Generate the report.

Choose **Analysis** > **Reports** > **Standard Requirement Report**. The Standard Requirement Report dialog box opens.
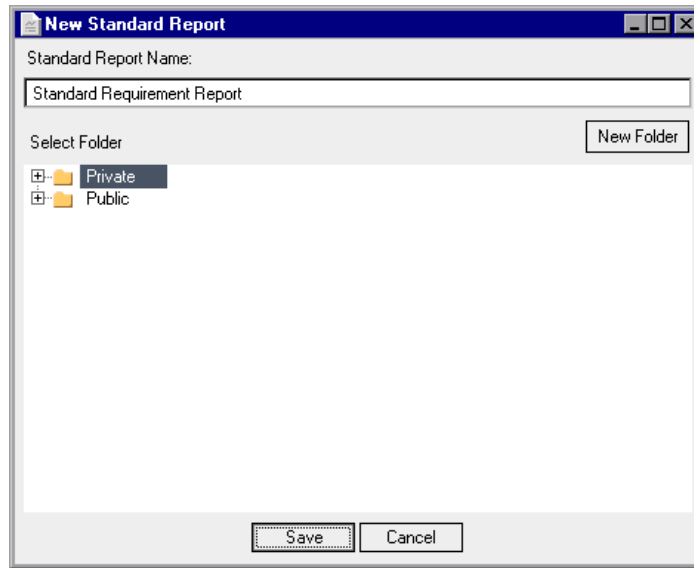

This report lists the requirements that appear in the current requirements view.

3 Save the report in the Dashboard module.

Click **Save**. The New Standard Report dialog box opens.

Under **Select Folder**, select **Private**. Click **Save**.

The Dashboard module opens in the Analysis View, and the report opens under the **View** tab.

Generating Graphs

You can create graphs in the Dashboard module, that display data from the Requirements, Test Plan, Test Lab, and Defects modules. You can also create quick graphs directly from the Requirements, Test Plan, Test Lab, and Defects modules. In either case, you can use a graph wizard to guide you through the stages of creating a graph.

This section includes:

➤ Generating Graphs in the Dashboard Module

➤ Generating Quick Graphs

Generating Graphs in the Dashboard Module

In the Dashboard module, you can create graphs and configure them according to your specifications. You can also create a graph using the graph wizard. The graph wizard takes you through the steps involved in creating a graph and defining its settings.

You create graphs in either a public folder or a private folder. Graphs in a **public** folder are accessible to all users. Graphs in a **private** folder are accessible only to the user who created them.

In this exercise, you will use the graph wizard to generate a graph that summarizes the defects by status and priority level.

To generate a graph in the Dashboard module:
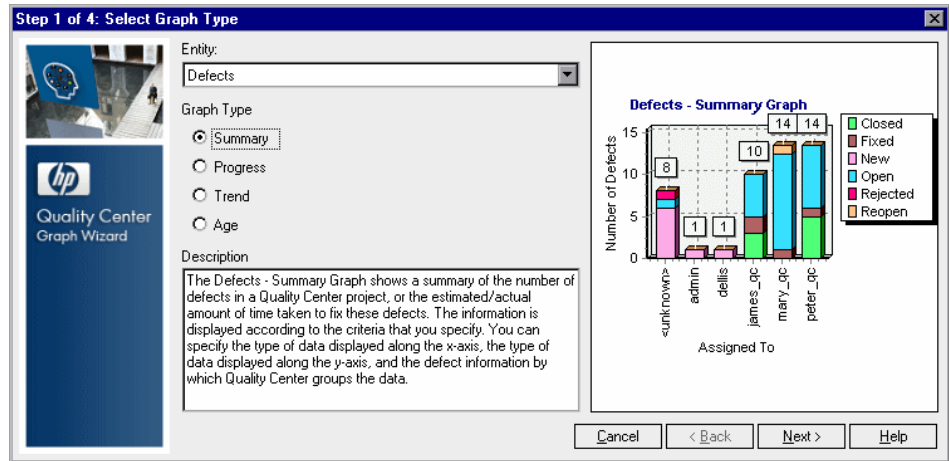
1 Make sure the Dashboard module is displayed

If the Dashboard module is not displayed, click the **Dashboard** button on the sidebar to display the Dashboard module.

If the Analysis View tab is not displayed, click the **Analysis View** tab.

2 Open the graph wizard.

Click the **New Item** button and select **Graph Wizard**. The graph wizard opens on the Select Graph Type dialog box.
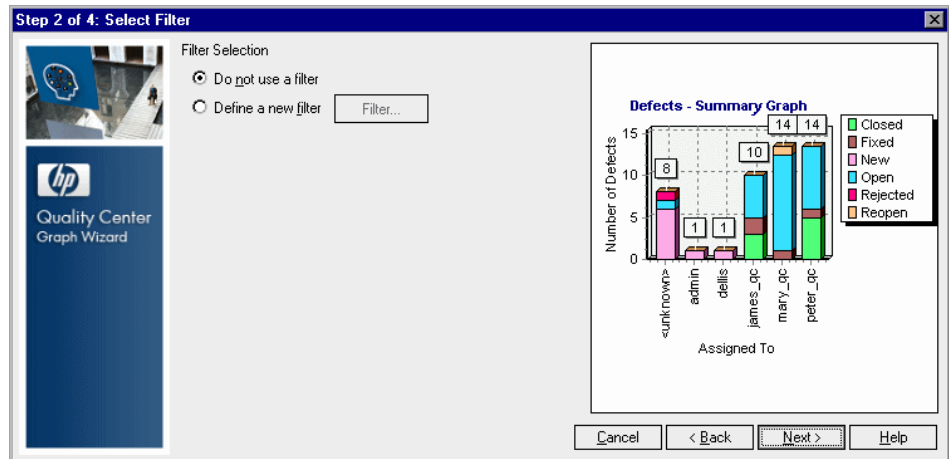

3 Select the graph type.

Under **Entity**, select **Defects**.

Under **Graph Type**, make sure **Summary** is selected.

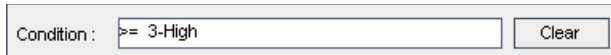Click **Next**. The Select Filter dialog box opens.

4 Define a filter to view defects with high to urgent priority.

Under **Filter Selection**, select **Define a new filter**. Click the **Filter** button. The Filter dialog box opens.

For the **Priority** field, click the **Filter Condition** box. Click the browse button. The Select Filter Condition dialog box opens.

In the right pane, select the logical expression >=.

In the left pane, select **3-High**.
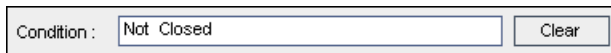
Condition :	>= 3-High	Clear

Click **OK** to close the Select Filter Condition dialog box.

5 Define a filter to view defects that are not closed.

For the **Status** field, click the **Filter Condition** box. Click the browse button. The Select Filter Condition dialog box opens.

In the right pane, select the logical expression **Not**.
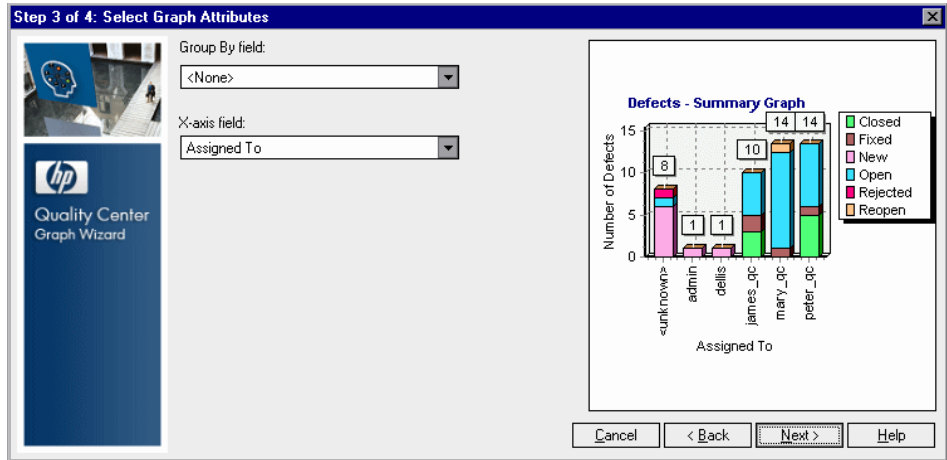
In the left pane, select **Closed**.

Condition :	Not Closed	Clear

Click **OK** to close the Select Filter Condition dialog box.

Click **OK** to close the Filter dialog box.

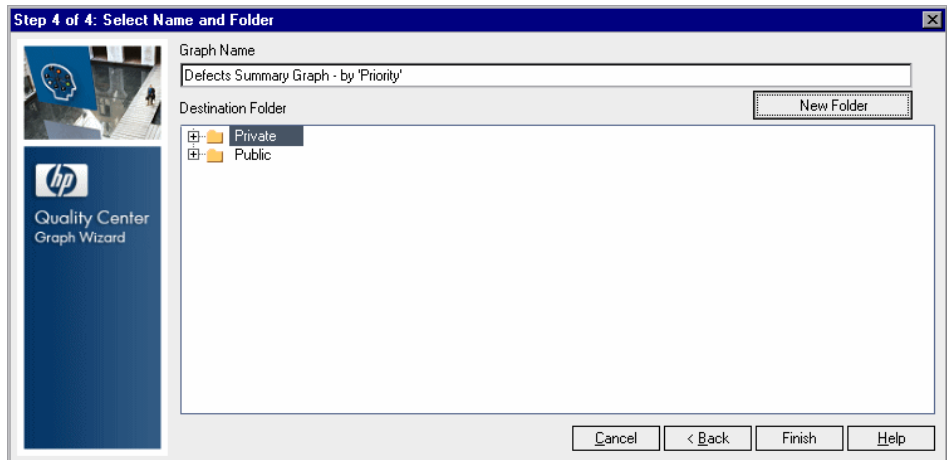Click **Next**. The Select Graph Attributes dialog box opens.

6 **Set the graph attributes.**

Under **Group By field**, make sure that it is set to **None**.

Under **X-axis field**, select **Priority** to view the number of defects by priority.

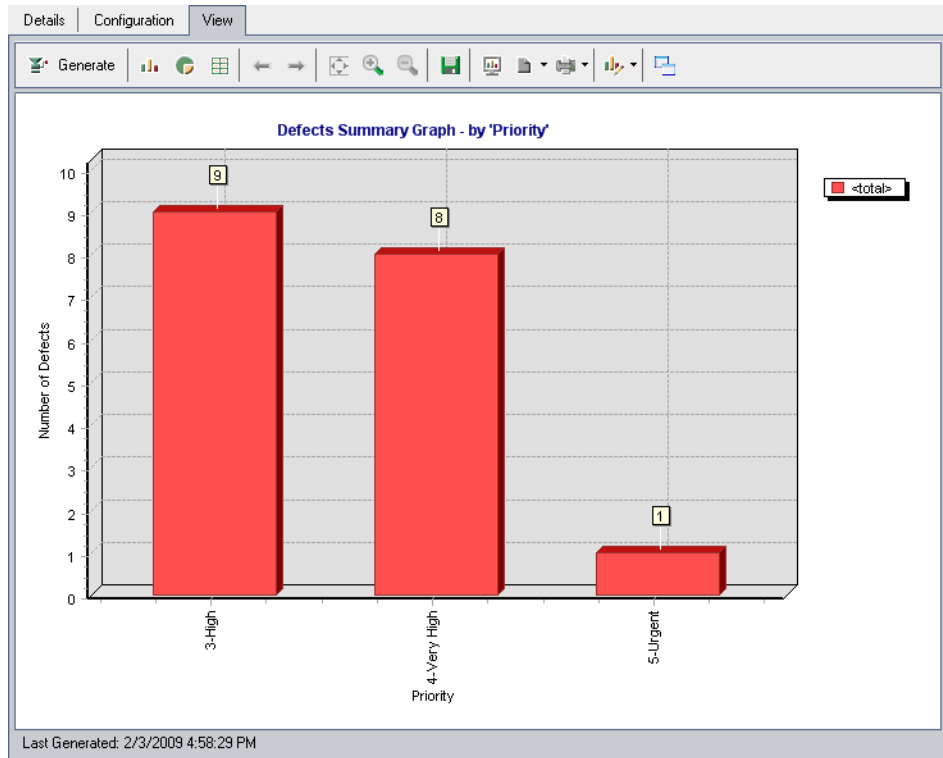Click **Next**. The Select Name and Folder dialog box opens.

7 Define the graph name and its location in the analysis tree.

Under **Graph Name**, accept the default name.

Under **Destination Folder**, make sure that the **Private** folder is selected.
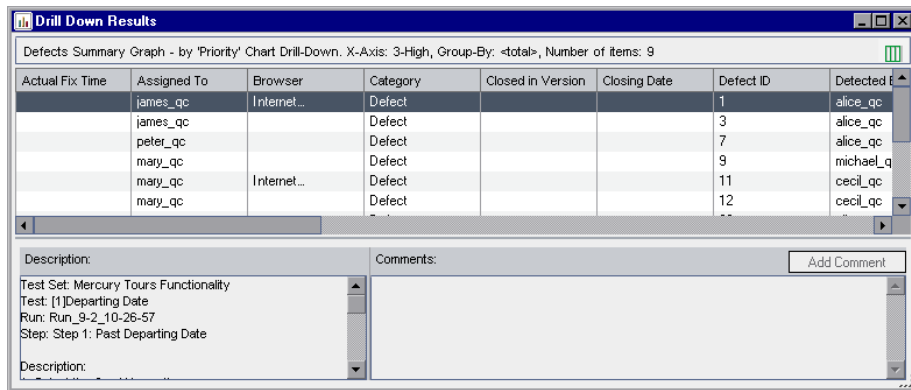
8 Generate the Graph.

Click **Finish**. The graph is displayed in the View tab.

The graph shows a summary of defects with high to urgent priority in which their defect status is not closed.

9 Display additional defect details.

Click a bar in the graph. The Drill Down Results dialog box opens and displays the defects that belong to the bar.

Close the Drill Down Results dialog box.

10 Display other graph views.

Click the **Pie Chart** button to display the graph as a pie chart.

Click the **Data Grid** button to display the data as a grid.

Generating Quick Graphs

You can create quick graphs during your work in the Requirements, Test Plan, Test Lab, and Defects modules. Quick graphs enable you to create several types of graphs in each module, using the existing module filter. You can use quick graphs for one-time reference, or save them in the Dashboard module, where you can continue to configure their data and appearance.

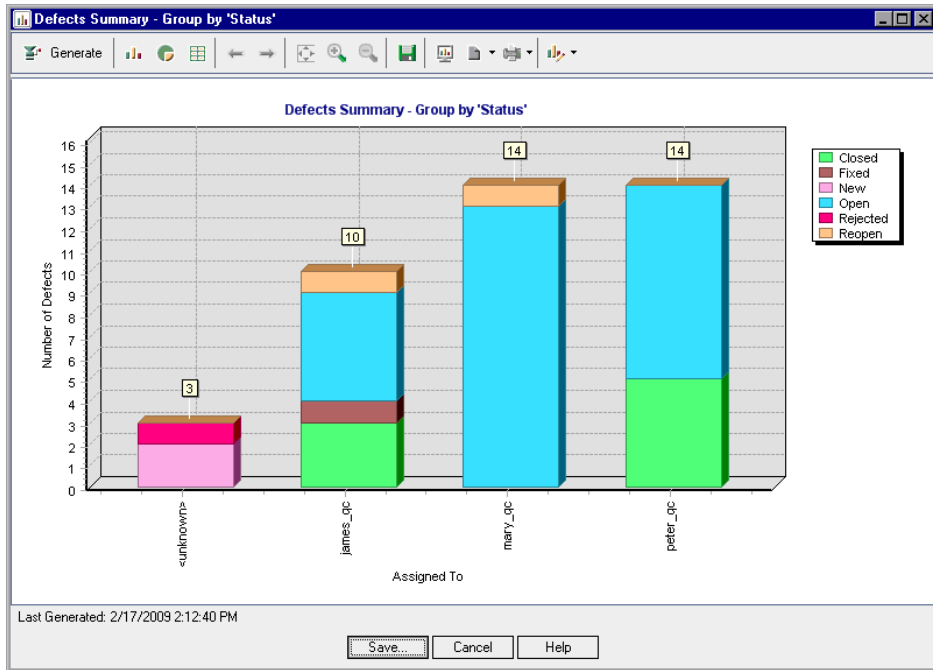In this exercise, you will generate a summary graph from the Defects module.

To generate a quick graph:

1 Display the Defects module.

Click the **Defects** button on the sidebar to display the Defects module.

2 Generate the report.

Choose **Analysis** > **Graphs** > **Defects Summary Group by Status**. The Defects Summary - Group by Status dialog box opens.

The graph shows the number of defects that exist in your project, according to the people to whom they are assigned. Defects in the graph's columns are grouped according to their status.

3 Close the Defects Summary - Group by Status dialog box.

Click the **Cancel** button.

Generating Dashboard Pages

Using the Dashboard module, you can arrange and view multiple graphs on a single dashboard page. You select the graphs to include in the dashboard page from the graphs in the analysis tree. You can arrange and resize the graphs on the page.

You create dashboard pages in either a public folder or a private folder. Dashboard pages in a **public** folder are accessible to all users. Dashboard pages in a **private** folder are accessible only to the user who created them.

In this exercise, you will create a dashboard page for the defect graphs in the public folder.

Note: The user name that you logged in to Quality Center does not have the required permission to create dashboard pages. To perform this exercise, you will log in using a different user name.

To generate a dashboard page:

1 Log out and log in as a different user.

Click the **Logout** button on the upper right-side of the window. The HP Quality Center Login window opens.

In the **Login Name** box, type **alex_qc**.

Skip the **Password** box. A password was not assigned to this user name.

Click the **Authenticate** button. Quality Center verifies your user name and password and determines which domains and projects you can access.

In the **Domain** list, select **Default**.

In the **Project** list, select **QualityCenter_Demo**.

Click the **Login** button. The Quality Center main window opens and displays the module in which you were last working.

2 Make sure the Dashboard module is displayed

If the Dashboard module is not displayed, click the **Dashboard** button on the sidebar to display the Dashboard module.

Click the **Dashboard View** tab.

3 Add a page to the Public folder.

In the tree, select the **Public** folder.

Click the **New Page** button. The New Dashboard Page dialog box opens.

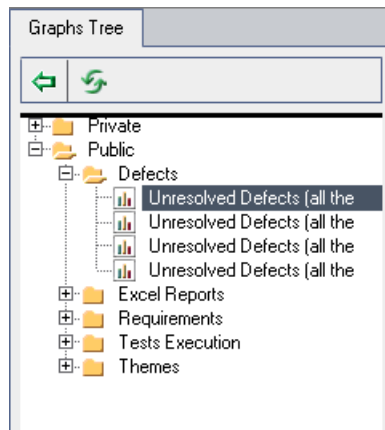In the **Dashboard Page Name** field, type Summary of Defects page.

Click **OK**. A dashboard page is added to the dashboard tree under the Public folder.

4 Select the graphs that you want to include in the dashboard page.

Click the **Configuration** tab.

In the Graphs Tree pane, expand the **Public** folder.

Expand the **Defects** folder. The folder includes four graphs.

Double-click the first graph. A placeholder for the graph is created in the Configuration tab displaying the graph's title.

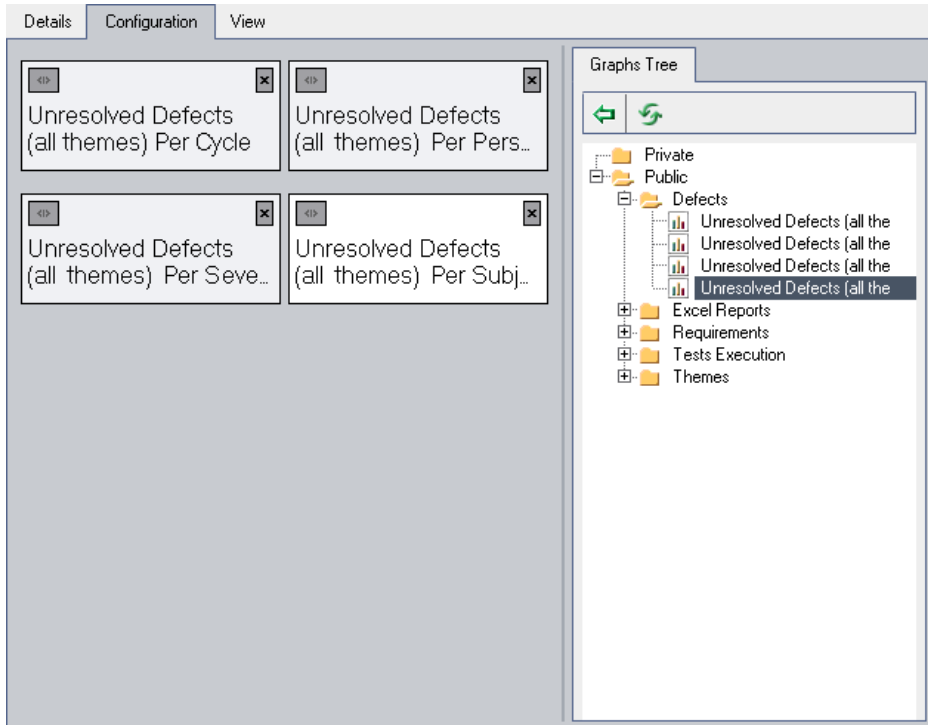Add the other three graphs to the dashboard page.

5 Rearrange the dashboard page.

Select the second placeholder and drag it upwards so that it is alongside the first placeholder.

Select the fourth placeholder and drag it upwards so that it is alongside the third placeholder.

6 View the dashboard page.

Click the **View** tab. Quality Center generates and displays the graphs in the View tab.
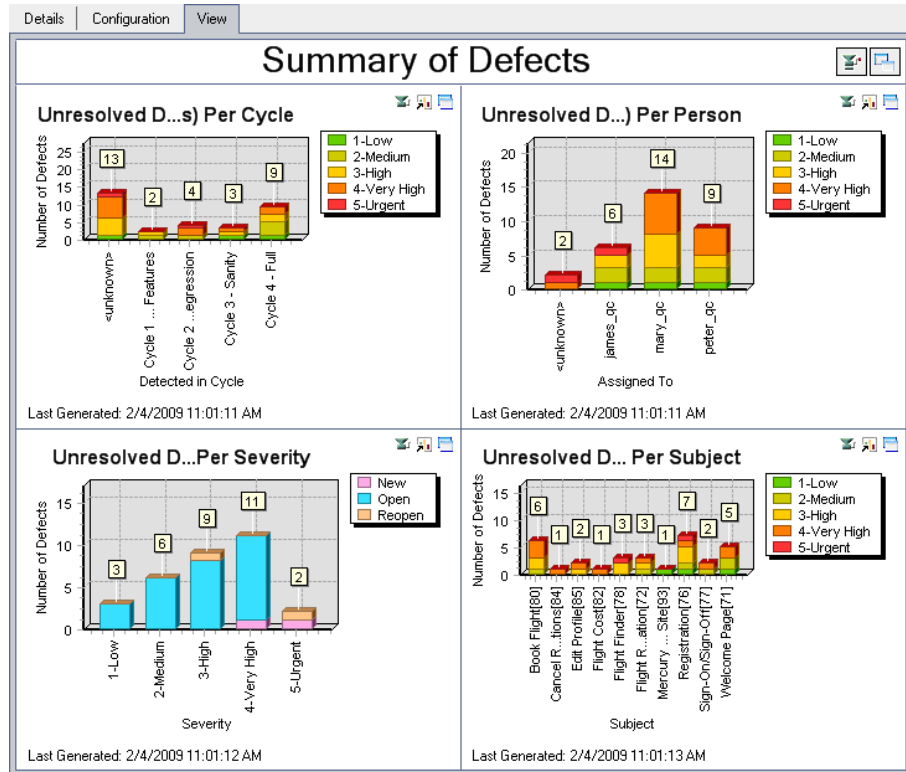
The dashboard page displays the unresolved defects per cycle, per person, per severity, and per subject.

To view the dashboard page in full-screen mode, click the **View Page in Full Screen** button, located in the upper-right corner of the page.

To return to the standard view, click the close button, located in the upper-right corner of the page.

9

Creating Libraries and Baselines

You create libraries in the Libraries module. After you create a library, you can create and compare baselines for the library to track changes in your project over time.

A **library** represents a set of entities in a project and the relationships between them. The entities in a library can include requirements, tests, test resources, and business components. A **baseline** is a snapshot of the library at a specific point in time. Baselines enable you to keep track of changes made to your project over time.

You can compare baselines at all stages of the application life cycle management process. For example, you can compare two baselines in a library to review changes made to tests in the library over time. You can also compare a baseline to the current entities in the library.

In this lesson, you will create a library of tests and requirements. You will then compare two baselines in the library to review changes made to tests in the library over time.

Quality Center Starter Edition: This lesson is not available for Quality Center Starter Edition.

In this lesson, you will learn about:

➤ Creating Libraries on page 152
➤ Creating Baselines on page 154
➤ Comparing Baselines on page 157

Creating Libraries

In this exercise, you will add a library of tests and requirements to Quality Center. To perform this exercise you must log in as alex_qc.

To create a library:

1 Make sure to log in to QualityCenter_Demo as alex_qc.

Open the HP Quality Center Login window. In the **Login Name** box, type **alex_qc**. Skip the **Password** box.

For more information, see "Starting Quality Center" on page 17.

2 Display the Libraries module.

Click the **Management** button on the sidebar and then click the **Libraries** tab.

3 Create a library folder.

In the libraries tree, select the root **Libraries** folder. Click the **New Folder** button. The New Library Folder dialog box opens.

In the **Library Folder Name** box, type Folder1.

Click **OK**. The **Folder1** folder is added to the libraries tree.

In the **Description** box in the right pane, type the following description for the library folder: This folder contains a library of tests and requirements.

4 Add a library to your library folder.

Click the **Create Library** button. The Create Library dialog box opens.

In the **Name** box, type Library1.

Under **Select Entities**, in the **Requirement Root Folder** box, click the browse button. Select the **Mercury Tours Application** folder to include in the library. Click **OK**.

In the **Test Root Folder** box, click the browse button. Under **Subject**, select the **Mercury Tours Site** folder to include in the library. Click **OK**.

In the **Description** box, type This library includes tests and requirements.

Click **OK**. The new library is added to the libraries tree.

Creating Baselines

A baseline is a snapshot of your library at a specific point in time. You can use a baseline to mark any significant milestone in the application life cycle management process. A baseline includes all the entities defined in the library, including requirements, tests, and test resources. Baselines also include the relationships between the entities in the library, such as traceability and coverage. Baselines enable you to keep track of changes made to your project over time.

In the following exercise, you will create an initial baseline that will later be compared to another baseline to evaluate the impact of changes.

To create a baseline:

1 Make sure the Libraries module is displayed.

If the Libraries module is not displayed, click the **Management** button on the sidebar and then click the **Libraries** tab.

2 Add a baseline to your library.

In the libraries tree, select the **Library1** library.

Click the **Create Baseline** button. A verification process begins.

For each entity in the library that is associated with another entity in the project, Quality Center verifies that the associated entity is also contained in the library. For example, for each test that has requirements coverage, Quality Center checks if the associated requirement is also contained in the library.

If there are entities in the library that are associated with entities not contained in the library, Quality Center creates a list of these entities, and the Broken Links Verification dialog box opens.
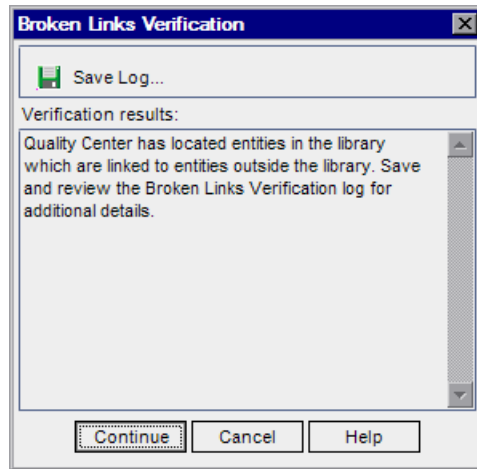
Click **Continue**. The New Baseline dialog box opens.

In the **Baseline Name** field, type Baseline1. Click **OK**.

The baseline is added to the libraries tree, and the creation process begins.
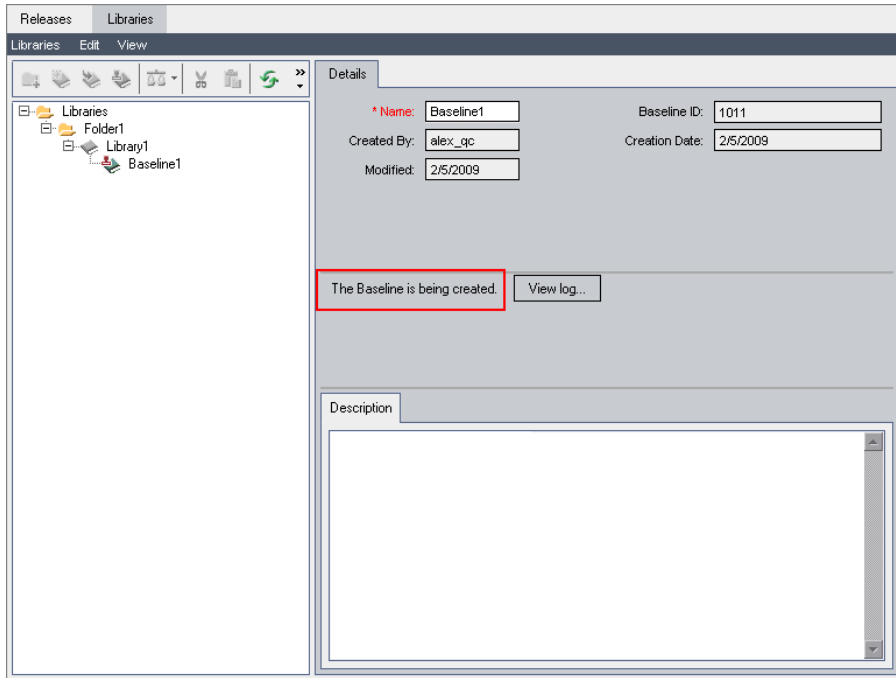
The baseline is created in a background process, and may take some time. You can continue working in Quality Center during the baseline creation process.

In the Details tab, click the **Description** pane and type Baseline of tests and requirements.

3 View the baseline log file.

In the Details tab, click the **View Log** button. The Log: Create Baseline dialog box opens and displays progress. Click **Close** to close the dialog box.

The View Log button is no longer displayed.

Comparing Baselines

You can compare two baselines in a library. For example, you can compare baselines at different stages of development to assess the impact of changes made to requirements in your project. You can then update the relevant tests in your project accordingly.

You can also compare a baseline to the current entities in the library. For example, suppose you create a baseline at the start of a new release. Over time, changes are made to requirements in the library. To determine whether product development is proceeding as planned, you can compare requirements in the initial baseline with the current requirements in the library.

In the following exercise, you will add test coverage to a requirement and then create another baseline. You will then compare your two baselines to evaluate the impact of the changes.

To compare baselines:

1 Modify a requirement.

Click the **Requirements** button on the sidebar to display the Requirements module.

In the requirements tree, under **Mercury Tours Application**, expand **Application Usability**. Select **Keyboard Support**.

Click the **Test Coverage** tab. The Test Coverage tab displays coverage for this requirement.

If the Test Plan Tree tab on the right is not displayed, click the **Select Tests** button.

In the Test Plan Tree tab, expand the **Mercury Tours Site** and **HTML Pages** subject folders.

Double-click the **HTML Page Source** test. The test is added to the coverage grid.

2 Create a new baseline.

Repeat Steps 1 and 2 on page 154. Name your new baseline Baseline2.

3 Select a baseline with which to compare.

In the libraries tree, select **Baseline1**. Click the **Compare To** button, and select **Select Baseline** to compare the baseline with another baseline. The Select Baseline dialog box opens.

Click the browse button and select **Baseline2** from the list. Click **OK**.

Click **OK** to close the Select Baseline dialog box. The Compare Baselines Tool dialog box opens.
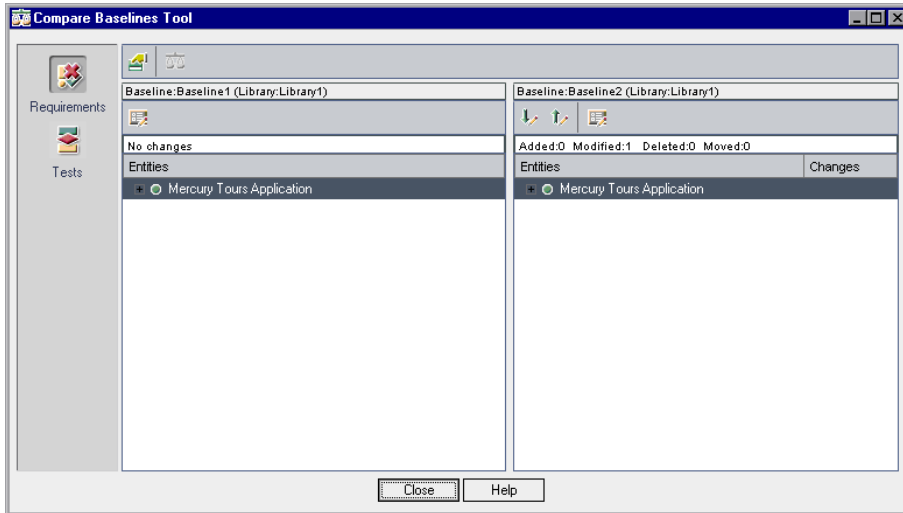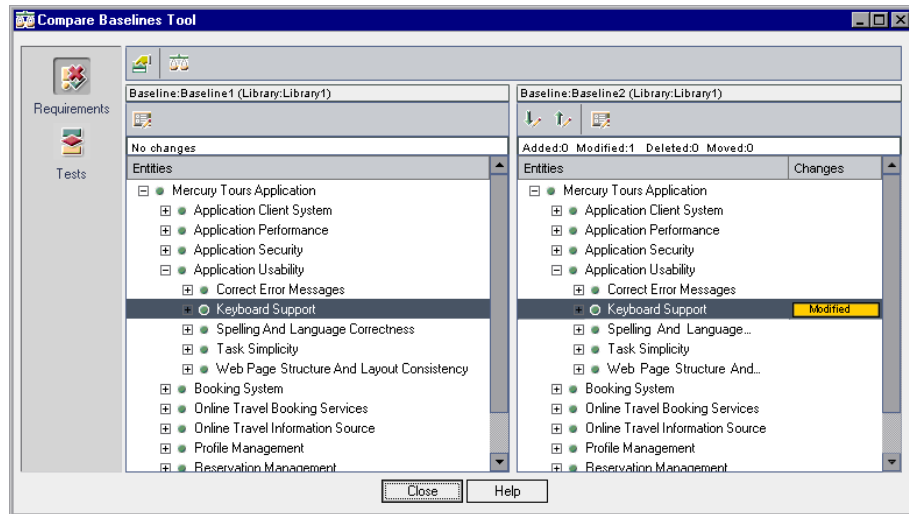

The baselines are displayed in separate panes, with the more recently created baseline displayed in the right pane. In each pane, the library's entities are displayed in the same hierarchical tree structure as defined in the specific module.

4 View requirement changes between the baselines.

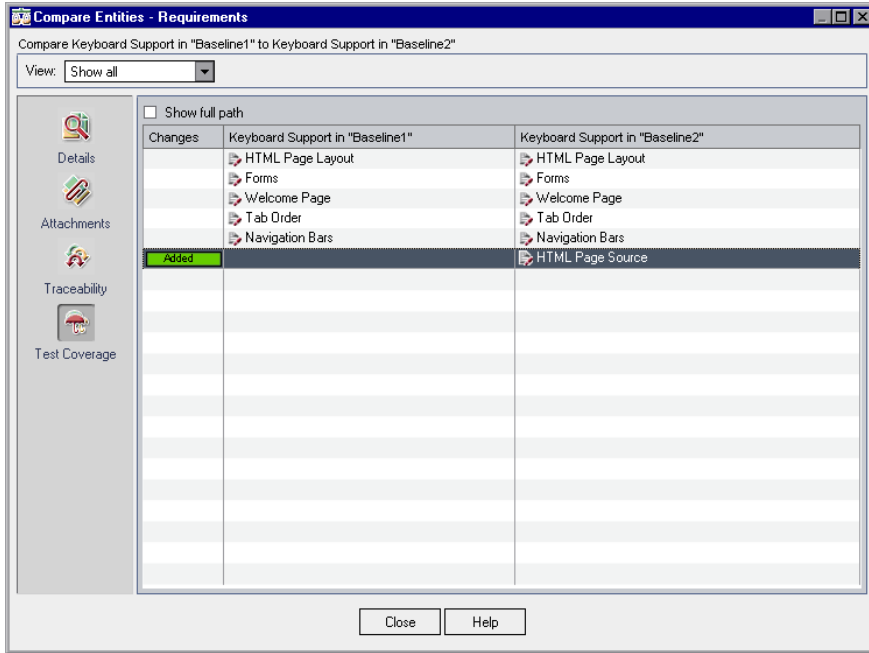Click the **Go to Next Change** button in the right pane to view the change.

Differences between the two baselines are indicated in the **Changes** column.
The tool indicates that there is a difference in the **Keyboard Support**
requirement between the baselines.

To compare the modified requirement between baselines, select **Keyboard
Support** and click the **Compare Entities** button on the toolbar. The Compare
Entities dialog box opens.

Click the **Test Coverage** button on the sidebar.

The Test Coverage view displays details of the entity in each baseline. Click **Close**.

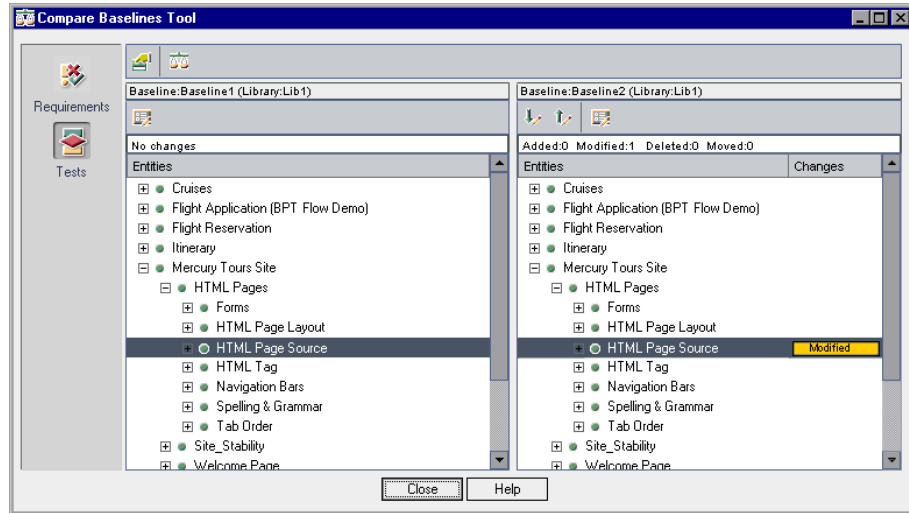**5 View test changes between the baselines.**

In the Compare Baselines Tool dialog box, click the **Tests** button on the sidebar.

Click the **Go to Next Change** button in the right pane to view the change.

The tool indicates that there is a difference in the **HTML Page Source** test between the baselines.

Click **Close** to close the Compare Baselines Tool dialog box.

10

Customizing Projects

In the previous lessons, you learned how to use Quality Center to help you manage all phases of the application life cycle management process, including specifying releases and cycles, specifying requirements, planning tests, running tests, and tracking defects.

In this lesson, you will learn how to customize your Quality Center project to meet the needs of your team. You can control access to a project by defining the users who can access the project and by specifying the types of tasks each user can perform. When new members are added to your team, you assign them to the projects that they will be using, and specify the tasks that they can perform.

You can also customize your Quality Center project by modifying system fields or by adding 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. You can add, modify, and delete user-defined fields.

Fields can be associated with system and user-defined lists. A list contains the values that the user can enter in a field. For example, if you are running tests on two different database servers, you can add a **Database** field to your project. You can then create a selection list containing the values **Oracle** and **Microsoft SQL**, and associate the list with the **Database** field.

In this lesson, you will learn about:

➤ Starting Project Customization on page 164

➤ Adding a New Project User on page 167

➤ Assigning a User to a User Group on page 169

➤ Defining a User-Defined Field on page 171

➤ Creating a Project List on page 174

Starting Project Customization

You customize your Quality Center projects using the Project Customization window. In this exercise, you will log in to the Project Customization window with project administrator privileges.

To start project customization:

1 Open the HP Quality Center Login window.

Make sure that the HP Quality Center Login window is open. For more information, see "Starting Quality Center" on page 17.

2 Type a user name with project administrator privileges and authenticate.

In the **Login Name** box, type **alex_qc**.

Skip the **Password** box. A password was not assigned to this user name.

Click the **Authenticate** button. Quality Center verifies your user name and password and determines which domains and projects you can access.

3 Log in to the project.
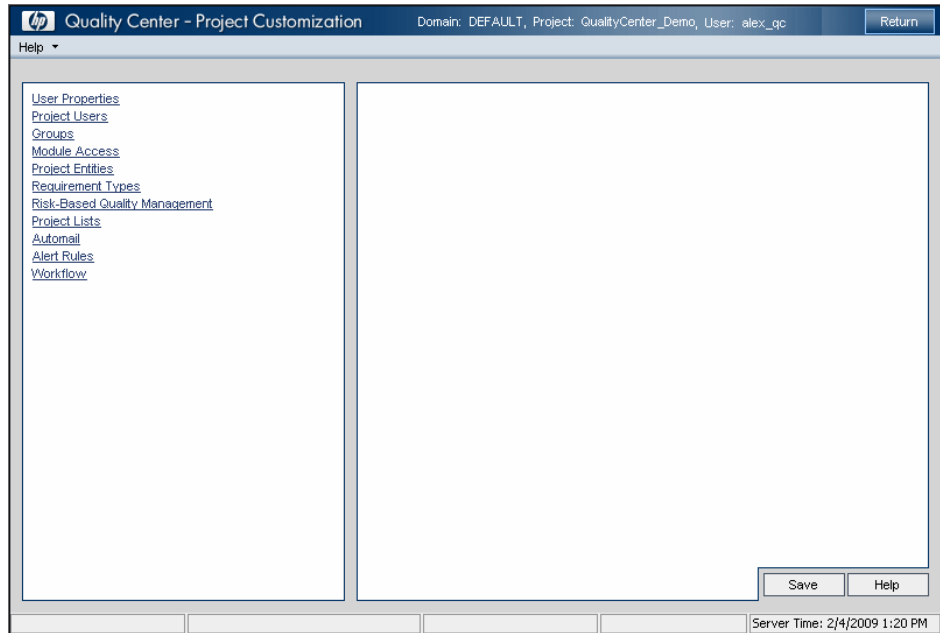
In the **Domain** list, select **Default**.

In the **Project** list, select **QualityCenter_Demo**.

Click the **Login** button.

The Quality Center main window opens and displays the module in which you were last working.

4 Open the Project Customization window.

Choose **Tools** > **Customize** on the upper-left corner of the Quality Center window. The Project Customization window opens.

By default, the Project Customization window contains the following links:

Option	Description
User Properties	Enables you to change your user properties. For example, you can change your email address. You can also change your password.
Project Users	Enables you to add and remove users from a Quality Center project. You can also assign users to user groups to restrict user access privileges.
Groups	Enables you to assign privileges to user groups by specifying permission settings.

Option	Description
Module Access	Enables you to control the modules that each user group can access. By preventing users from accessing unnecessary modules, you can better utilize your Quality Center licenses.
Project Entities	Enables you to modify the behavior of Quality Center system fields or define user-defined fields that are unique to your project. For example, if you are running tests on several builds of an application, you can add a **Detected in Build** user-defined field to the New Defect dialog box. You can then associate it with a selection list containing the values for this field.
Requirement Types	Enables you to customize the definitions for requirement types. **Quality Center Starter Edition:** This option is not available for Quality Center Starter Edition.
Risk-Based Quality Management	Enables you to customize settings for risk-based quality management. **Quality Center Starter Edition:** This option is not available for Quality Center Starter Edition.
Project Lists	Enables you to add customized lists to a project. A list contains values that the user can enter in system or user-defined fields. For example, for the **Detected in Build** field, you can create a selection list containing the values **Build1**, **Build2**, and **Build3**.
Automail	Enables you to set up automatic mail notification rules to inform users via email each time changes are made to specified defects.
Alert Rules	Enables you to activate alert rules for your project. This instructs Quality Center to create alerts and send emails when changes occur in the project.
Workflow	Enables you to generate scripts to perform commonly needed customizations on the fields of the Defects module dialog boxes. In addition, you can write scripts to customize dialog boxes in any module, and to control the actions that users can perform.

Adding a New Project User

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

For each project, you select project users from the Quality Center site users list. This list is created in Site Administration.

From Project Customization, you add users to a project and assign them to user groups. Each user group has access to certain Quality Center tasks.

In this exercise, you will add a new project user to the **QualityCenter_Demo** project.

To add a new project user:

1 Make sure that you are logged in to Quality Center as a project administrator.

For more information on how to open the Project Customization window, see "Starting Project Customization" on page 164.
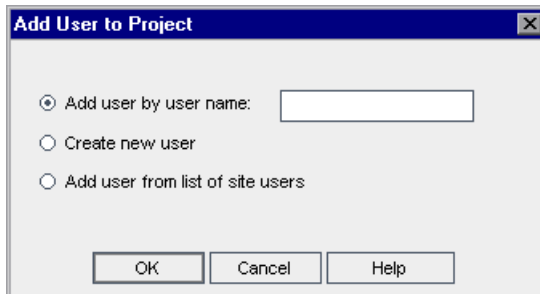
2 Open the Project Users page.

In the Project Customization window, click the **Project Users** link. The Project Users page opens and displays a list of users that have been assigned to the project.
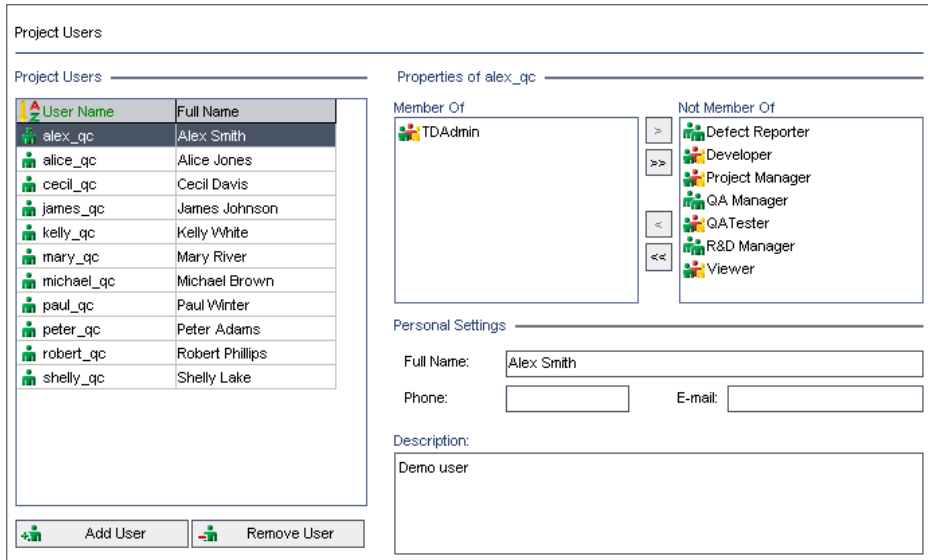
3 Add a new user name.

Click the **Add User** button. The Add User to Project dialog box opens.

This dialog box enables you to add an existing user from the list of site users by typing the user's name or by selecting the user from the list of site users. You can also create a new user and add the new user to the project.

To add an existing user, make sure that **Add user by user name** is selected. In the **Add user by user name** box, type **tom_qc** and click **OK**.

The new user is added to the Project Users list and the user properties are displayed in the Personal Settings area. User personal settings are defined in Site Administration.


Assigning a User to a User Group

To enable users to do their job, and to protect a project from unauthorized access, Quality Center enables you to assign each user to a specific user group. Each group has access to certain Quality Center tasks. You can use the predefined user groups with their default permissions or you can customize your own user groups with unique sets of permissions.

In this exercise, you will assign the new user **tom_qc** to the **QATester** user group.

To assign a user to a user group:

1 Make sure that the Project Users page is displayed.

If the Project Users page is not already open, click the **Project Users** link in the Project Customization window.
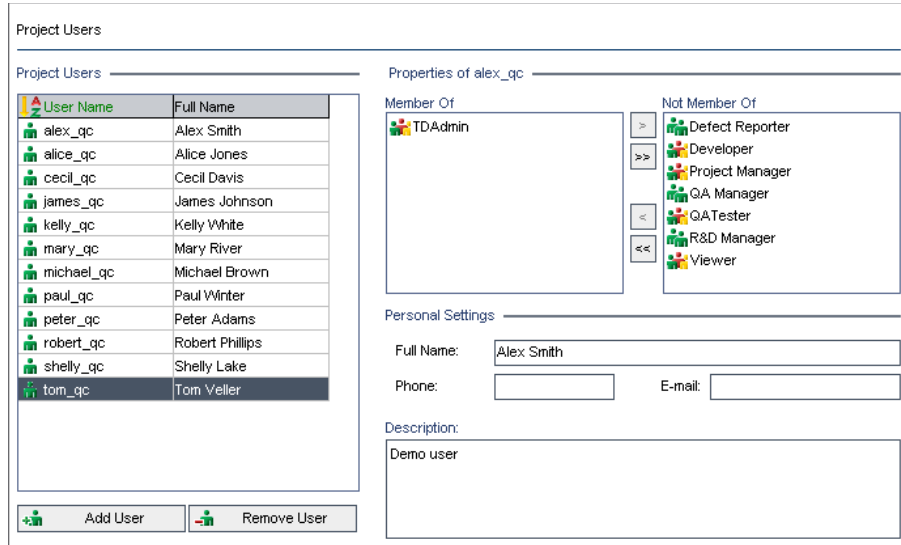
2 Select tom_qc from the Project Users list.

In the **Project Users** list, select **tom_qc**. The user properties are displayed. By default, a new user is assigned to the **Viewer** user group.
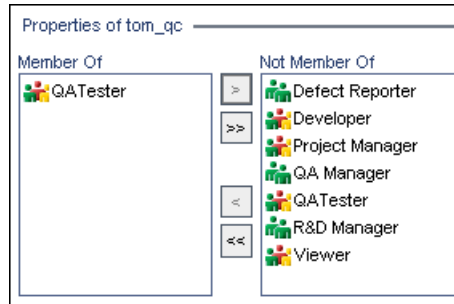
3 Assign tom_qc to the QATester group.

Under **Not Member Of**, select **QATester** and click the left arrow button to move it to **Member Of**.

170

4 Remove tom_qc from the Viewer group.

Under **Member Of**, select **Viewer** and click the right arrow button to move it to **Not Member Of**.

Click **Save** to save the changes to the Project Users page. Click **OK**.

Defining a User-Defined Field

You can define user-defined fields that are unique to your project or modify the behavior of Quality Center system fields.

The fields are stored in Quality Center project entities. For example, the Defect entity contains data entered in the Defects module.

In the following exercise, you will add the **Database** user-defined field to the **Defect** entity. This field indicates the server database in use when testing an application.
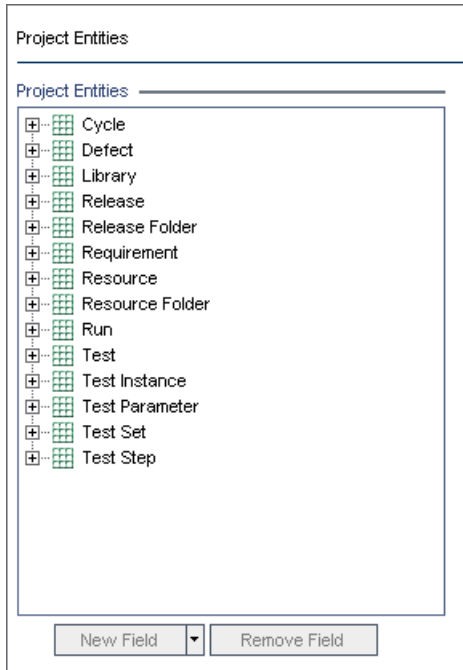
To add a user-defined field:

1 Make sure that the Project Customization window is displayed.

For more information on how to open the Project Customization window, see "Starting Project Customization" on page 164.
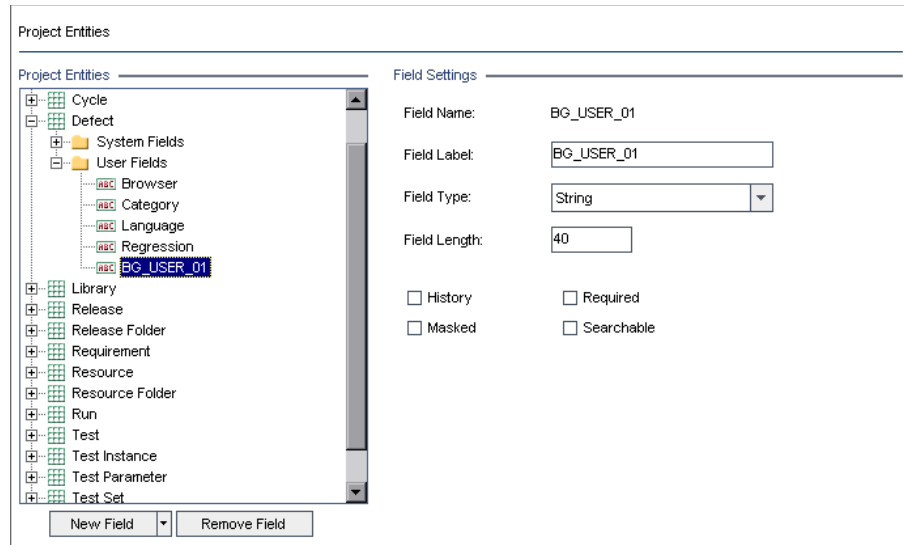
2 Open the Project Entities page.

In the Project Customization window, click the **Project Entities** link. The Project Entities page opens.

3 **Add a new user-defined field to the Defect entity.**

Under **Project Entities**, expand **Defect**.

Click the **User Fields** folder and click the **New Field** button. A new field is added under the User Fields folder.

BG_USER_XX indicates a user-defined field under the Defect entity.

4 **Rename the default field name.**

In the **Field Label** box, instead of the default name, type Database.

Click **Save**.

Click **OK**.

Creating a Project List

You can associate fields with system and user-defined lists. A list contains values that the user can enter in a field.

In the previous exercise you added the Database field. In the following exercise you will create a list and assign it to the Database field. You will then open the New Defect dialog box to view the new field.
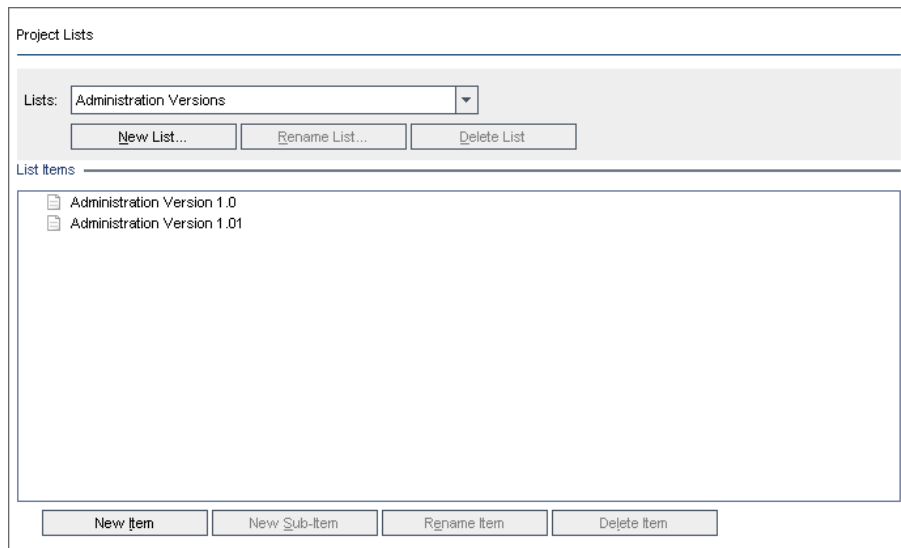
To create a project list:

1 Make sure that the Project Customization window is displayed.

For more information on how to open the Project Customization window, see "Starting Project Customization" on page 164.

2 Open the Project Lists page.

In the Project Customization window, click the **Project Lists** link. The Project Lists page opens.

3 Create a new list.

Click **New List**. The New List dialog box opens.

In the **List Name** box, type DB. Click **OK** to close the New List dialog box.

4 Add Items to your list.

Click **New Item**. The New Item dialog box opens. Type Oracle and click **OK**.

Repeat the same procedure and add **MS SQL** to the DB list.

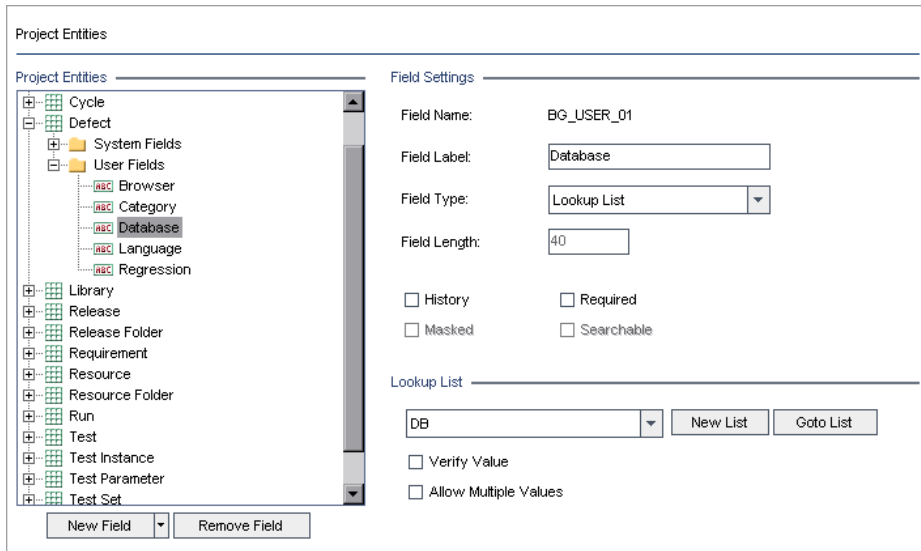Click **Save** to save the changes to the Project Lists page. Click **OK**.

5 Assign the list to the Database field.

In the Project Customization window, click the **Project Entities** link. The Project Entities page opens.

Under **Project Entities**, expand **Defect**.

Expand the **User Fields** folder and select **Database**.

Under **Field Settings**, in the **Field Type** list, select **Lookup List** to set the field type as a drop-down list. The **Lookup List** section is displayed under the Field Settings section.

Under **Lookup List**, select the **DB** list.

Click **Save** to save the changes to the Project Entities page. Click **OK**.

6 View the new user-defined field in the New Defect dialog box.

Click the **Return** button located on the upper-right corner of the window to exit the Project Customization window and return to your Quality Center project.

In the Defects module, click the **New Defect** button. The New Defect dialog box opens.

New user-defined field

The **Database** field is displayed in the New Defect dialog box.

Click the down arrow and view the database types you defined. Click **Close**.

11

Conclusion

Quality Center helps you organize and manage all phases of the application life cycle management process, including defining releases, specifying requirements, planning tests, executing tests, and tracking defects. Throughout each phase, you can analyze data by generating detailed reports and graphs.

```
┌──────────────┐
│   Specify    │
│   Releases   │
└──────────────┘
        │
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│   Specify    │
│ Requirements │
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│    Plan      │
│    Tests     │
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│   Execute    │
│    Tests     │
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│    Track     │
│   Defects    │
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Phase	Description
Specify Releases	Specify your release plan and define cycles for your releases.
	To specify your release plan:
	1 Decide how to break up your application releases.
	2 For each release, determine how to break it down into cycles.
	3 Analyze the progress and quality of your releases and cycles.
Specify Requirements	Analyze your application and determine your requirements.
	To specify your requirements:
	1 Examine the application under development to determine your scope, goals, objectives, and strategies.
	2 Build a requirements tree to define your overall requirements. After you have created tests, you can use them to cover your requirements. In this way, you can keep track of your needs at all stages of the application life cycle management process.
	3 For each requirement group in the requirements tree, create a list of detailed requirements. Describe each requirement, assign it a priority level, assign it to releases and cycles, and add attachments if necessary.
	4 Generate reports and graphs to assist you in analyzing your requirements. Review your requirements to ensure they meet your scope.
	5 Create a baseline of requirements. A baseline can be used as an agreement that all stakeholders are responsible for signing off. This baseline then serves as a point of reference against which changes can be compared. The requirements baseline can be reviewed throughout the project to ensure its ongoing validity.

Phase	Description
Plan Tests	Create a test plan, based on your requirements.
	To create a test plan:
	1 Examine your application, system environment, and testing resources to determine your testing goals.
	2 Divide your application into modules or functions to be tested. Build a test plan tree to hierarchically divide your application into testing units, or subjects.
	3 Determine the types of tests you need for each module. Add a basic definition of each test to the test plan tree.
	4 Link each test to requirements.
	5 Develop manual tests by adding steps to the tests in your test plan tree. Test steps describe the test operations and the expected outcome of each test. Decide which tests to automate. Afterwards, you can link tests to defects.
	6 Create test scripts for tests that you want to automate. You can automate tests using HP testing tools, custom testing tools, or third-party testing tools.
	7 Generate reports and graphs to assist in analyzing test planning data. Review your tests to determine their suitability to your testing goals.
	8 Create a baseline of tests. A baseline provides you with a snapshot of your test plan at a specific point in time. You can use a baseline to mark any significant milestone in the application life cycle. The baseline then serves as a point of reference against which changes can be compared.

Phase	Description
Execute Tests	Create test sets and perform test runs. **To create test sets and run tests:** 1 Define test set folders and test sets to meet the various testing goals in your project. Assign each test set folder to a cycle. Decide which test sets to include in each test set folder, and which tests to include in each test set. 2 Schedule test runs and assign tasks to application testers. 3 Run the tests in your test sets automatically or manually. 4 View the results of your test runs to determine whether a defect was detected in your application. Generate reports and graphs to help analyze these results.
Track Defects	Submit defects detected in your application and track the progress of defect fixes. **To submit and track defects:** 1 Submit new defects detected in your application. 2 Link defects to other entities such as requirements, tests, and other defects. 3 Review new defects and determine which ones should be fixed. 4 Correct the defects that you decide to fix. 5 Test a new build of your application. Repeat this process until defects are fixed. 6 Generate reports and graphs to assist in analyzing the progress of defect fixes and to help determine when to release the application.