

# HP Quality Center

Software Version: 9.20

---

## Tutorial

Document Number: QCTUT9.2/01

Document Release Date: May 2007

Software Release Date: May 2007



# Legal Notices

## Warranty

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

The information contained herein is subject to change without notice.

## Restricted Rights Legend

Confidential computer software. Valid license from HP required for possession, use or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

## Third-Party Web Sites

HP provides links to external third-party Web sites to help you find supplemental information. Site content and availability may change without notice. HP makes no representations or warranties whatsoever as to site content or availability.

## Copyright Notices

© 1993 - 2007 Mercury Interactive Corporation, All rights reserved

## Trademark Notices

Adobe® is a trademark of Adobe Systems Incorporated.

Microsoft® and Windows® are U.S registered trademarks of Microsoft Corporation.

Oracle® is a registered U.S trademark of Oracle Corporation, Redwood City, California.

## Documentation Updates

This manual's title page contains the following identifying information:

- 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:

**[http://ovweb.external.hp.com/lpe/doc\\_serv/](http://ovweb.external.hp.com/lpe/doc_serv/)**

# Support

## Mercury Product Support

You can obtain support information for products formerly produced by Mercury as follows:

- If you work with an HP Software Services Integrator (SVI) partner (**[www.hp.com/managementsoftware/svi\\_partner\\_list](http://www.hp.com/managementsoftware/svi_partner_list)**), contact your SVI agent.
- If you have an active HP Software support contract, visit the HP Software Support Web site and use the Self-Solve Knowledge Search to find answers to technical questions.
- For the latest information about support processes and tools available for products formerly produced by Mercury, we encourage you to visit the Mercury Customer Support Web site at: **<http://support.mercury.com>**.
- If you have additional questions, contact your HP Sales Representative.

## HP Software Support

You can visit the HP Software Support Web site at:

**[www.hp.com/managementsoftware/services](http://www.hp.com/managementsoftware/services)**

HP Software online support provides an efficient way to access interactive technical support tools. As a valued support customer, you can benefit by using the support site to:

- Search for knowledge documents of interest
- Submit and track support cases and enhancement requests
- Download software patches
- Manage support contracts
- 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 find more information about access levels, go to: **[www.hp.com/managementsoftware/access\\_level](http://www.hp.com/managementsoftware/access_level)**

To register for an HP Passport ID, go to:

**[www.managementsoftware.hp.com/passport-registration.html](http://www.managementsoftware.hp.com/passport-registration.html)**

---

# Table of Contents

<b>Welcome to This Tutorial .....</b>	<b>7</b>
Before You Begin .....	7
How This Tutorial is Organized .....	8
Typographical Conventions.....	10
<b>Lesson 1: Introducing Quality Center .....</b>	<b>11</b>
The Quality Center Testing Process .....	12
Starting Quality Center .....	13
The Quality Center Window.....	16
The Mercury Tours Sample Web Site .....	19
<b>Lesson 2: Specifying Releases and Cycles .....</b>	<b>23</b>
Defining Releases and Cycles .....	24
Viewing Releases and Cycles.....	26
<b>Lesson 3: Specifying Requirements.....</b>	<b>31</b>
Defining Requirements .....	32
Viewing Requirements .....	36
Modifying Requirements.....	39
Converting Requirements .....	41
<b>Lesson 4: Planning Tests .....</b>	<b>47</b>
Developing a Test Plan Tree .....	48
Designing Test Steps.....	51
Copying Test Steps .....	55
Calling Tests with Parameters .....	57
Creating and Viewing Requirements Coverage .....	61
Generating Automated Test Scripts.....	70

<b>Lesson 5: Running Tests</b> .....	<b>73</b>
Defining Test Sets .....	74
Adding Tests to a Test Set.....	80
Scheduling Test Runs .....	82
Running Tests Manually .....	89
Viewing and Analyzing Test Results .....	96
Running Tests Automatically .....	101
<b>Lesson 6: Adding and Tracking Defects</b> .....	<b>105</b>
How to Track Defects .....	106
Adding New Defects .....	107
Matching Defects.....	109
Updating Defects.....	111
Linking Defects to Tests .....	115
Creating Favorite Views .....	118
<b>Lesson 7: Alerting on Changes</b> .....	<b>123</b>
Triggering an Alert .....	124
Creating Follow Up Alerts .....	126
<b>Lesson 8: Analyzing the Testing Process</b> .....	<b>129</b>
Generating Reports.....	130
Generating Graphs .....	137
<b>Lesson 9: Customizing Projects</b> .....	<b>143</b>
Starting Project Customization .....	144
Adding a New Project User.....	147
Assigning a User to a User Group.....	151
Defining a User-Defined Field .....	153
Creating a Project List .....	156
<b>Lesson 10: Where Do You Go from Here?</b> .....	<b>161</b>
Getting Started .....	161
Documentation Library.....	164
Additional Online Resources.....	166

---

# 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 test management tool.

This tutorial instructs you on how to use Quality Center to manage the application testing process. It familiarizes you with the process of defining releases, specifying requirements, planning tests, executing tests, tracking defects, alerting on changes, and analyzing results. It also shows you how to customize your project.

## Before You Begin

To work with this tutorial, your Quality Center client machine must have access to these components:

- ▶ **QualityCenter\_Demo**—a demo project that helps introduce you to Quality Center and includes sample releases, requirements, tests, test sets, test runs, and defects.

---

**Note:** It is highly recommended that you work on a new copy of the **QualityCenter\_Demo** project. For more information, contact your Quality Center site administrator.

---

- ▶ **Mercury Tours**—a sample application that simulates a Web-based site for reserving flights, hotel rooms, car rentals, cruises, and vacation deals.

**Note:** The **QualityCenter\_Demo** project and the Mercury Tours application can be installed only during the installation of Quality Center on a server machine. For more information, refer to the *HP Quality Center Installation Guide*.

---

- ▶ To run the automated tests in this tutorial, you must have QuickTest Professional or WinRunner installed on your machine.
- 

**Note:**

- ▶ 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, refer to the *HP Quality Center Installation Guide*.

---

## How This Tutorial is Organized

This tutorial contains the following lessons:

### Lesson 1 Introducing Quality Center

Introduces you to the Quality Center testing 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 and modify the requirements tree, and convert requirements to tests.

**Lesson 4 Planning Tests**

Shows you how to create a test plan tree, design test steps, copy test steps, call a test with parameters, link tests to requirements, and automate your 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, search for similar defects, update defects, link defects to tests, trace changes, and create favorite views.

**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 Analyzing the Testing Process**

Shows you how to monitor the testing process by creating reports and graphs.

**Lesson 9 Customizing Projects**

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

**Lesson 10 Where Do You Go from Here?**

Shows you how to start testing your own application and where to find more information about Quality Center.

## Typographical Conventions

This guide uses the following typographical conventions:

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

# 1

---

## Introducing Quality Center

Application testing is a complex process. Quality Center helps you organize and manage all phases of the application testing process, including defining releases, specifying requirements, planning tests, executing tests, and tracking defects.

In this lesson, you will learn about:	On page:
The Quality Center Testing Process	12
Starting Quality Center	13
The Quality Center Window	16
The Mercury Tours Sample Web Site	19

## The Quality Center Testing Process

Quality Center offers an organized framework for testing applications before they are deployed. Because test plans evolve with new or modified application requirements, you need a central data repository for organizing and managing the testing process. Quality Center guides you through all phases of the testing process.



The Quality Center testing process includes five phases:

- **Specifying Releases.** Develop a release-cycle management plan.
- **Specifying Requirements.** Identify and validate the functional and performance requirements that need to be tested.
- **Planning Tests.** Plan and confirm which tests need to be performed and how these tests must be run.
- **Running Tests.** Organize test sets, schedule their execution, perform test runs, and analyze the results of these runs.
- **Tracking Defects.** Add defects that were detected in the application and track how repairs are progressing.

Throughout the testing process, you can generate reports and graphs to assist you in your “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 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.



**2 Open Quality Center.**

Click the **Quality Center** link.

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

---

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

---

The Quality Center Login window opens.



**3 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.

**Tip:** If you previously logged in to a project, you can select the **Automatically log in to my last domain and project on this machine** check box if you want Quality Center to automatically log in to the last project in which you were working.

---

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

#### **4 Log in to the project.**

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

In the **Project** list, select **QualityCenter\_Demo**.

---

**Note:** 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.

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 first time you run Quality Center, the Welcome page opens. From the Welcome page, you can directly access this Tutorial and other Quality Center documentation. If you do not want to display the Welcome page each time you log in to Quality Center, select **Don't show this again**. To open the Welcome page at any time, choose **Help > Welcome Page**.

## The Quality Center Window

In this exercise, you will explore the Quality Center modules and their common elements.

**To explore the Quality Center window:**

### 1 Explore the Quality Center modules.



- ▶ Click the **Releases** button on the sidebar. The Releases module enables you to define releases and cycles for managing the testing process.



- ▶ Click the **Requirements** button on the sidebar. The Requirements module enables you to specify your testing requirements. This includes defining what you are testing, defining requirement topics and items, and analyzing the requirements.



- ▶ Click the **Test Plan** button on the sidebar. The Test Plan module enables you to develop a test plan based on your testing requirements. This includes dividing your plan into categories, developing tests, automating tests where beneficial, and analyzing the plan.



- ▶ Click the **Test Lab** button on the sidebar. The Test Lab module enables you to run tests on your application and analyze the results.



- ▶ Click the **Defects** button on the sidebar. The Defects module enables you to add defects, determine repair priorities, repair open defects, and analyze the data.



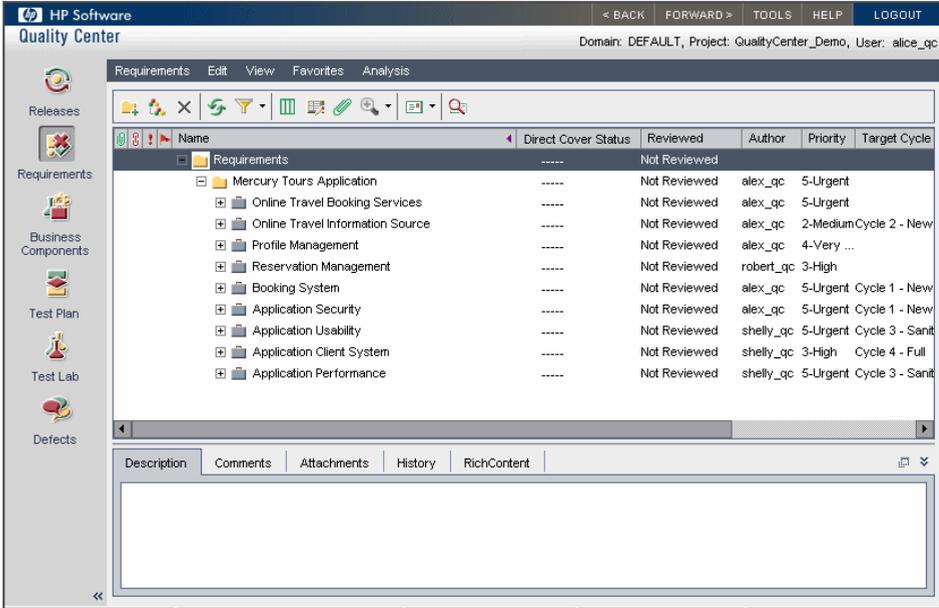
---

**Note:** 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's Guide*.

---

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 is located in the upper-right corner of the window. It is accessible from all modules and contains the following buttons:

Button	Description
	Navigates back to your previous location in Quality Center.
	Navigates forward to your next location in Quality Center.
	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, open the Document Generator, generate Excel reports, and open Dashboard.  For more information on the <b>Tools</b> button, refer to the <i>HP Quality Center User's Guide</i> .
	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 164 and “Additional Online Resources” on page 166.
	Enables you to log you out of your current project to the HP 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.

# The Mercury Tours Sample Web Site

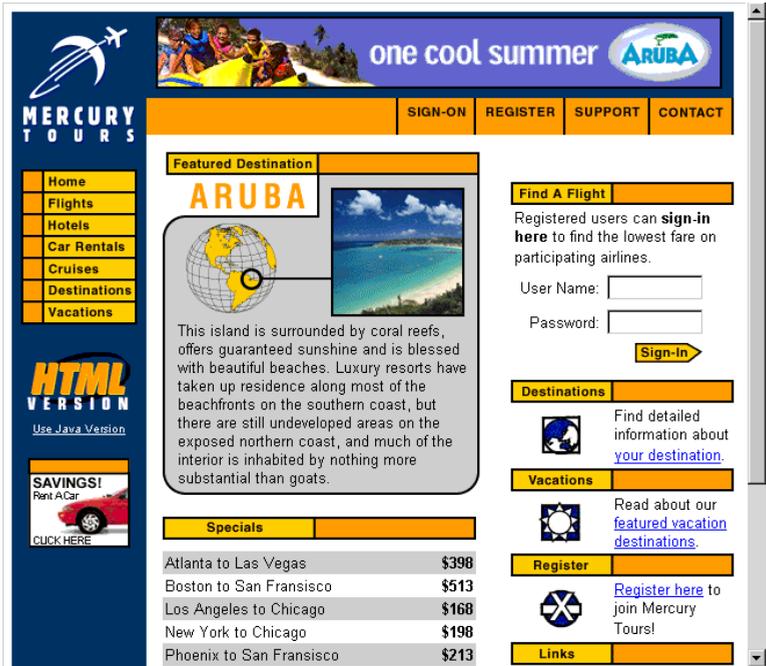
Mercury Tours is the sample Web application used in this tutorial. It simulates a Web-based application for reserving flights, hotel rooms, car rentals, cruises, and vacation deals. You should now familiarize yourself with this application.

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.

**REGISTER**

To create your account, we'll need some basic information about you. This information will be used to send reservation confirmation emails, mail tickets when needed and contact you if your travel arrangements change. Please fill in the form completely.

**Contact Information**

First Name:

Last Name:

Phone:

Email:

**Mailing Information**

Address:

City:

State/Province:

Postal Code:

Country:

**User Information**

User Name:

Password:

Confirm Password:

**SUBMIT**

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.

The screenshot shows the Mercury Tours website's sign-on page. At the top, there is a blue banner with the Mercury Tours logo on the left and an Aruba banner on the right that says "one cool summer". Below the banner is a navigation menu with buttons for "SIGN-ON", "REGISTER", "SUPPORT", and "CONTACT". The "SIGN-ON" button is highlighted in yellow. On the left side, there is a vertical menu with buttons for "Home", "Flights", "Hotels", "Car Rentals", "Cruises", "Destinations", and "Vacations". Below this menu is a section for "HTML VERSION" and "Use Java Version". At the bottom left, there is a "SAVINGS! Rent A Car" advertisement with a "CLICK HERE" link. The main content area has a "SIGN-ON" heading and a welcome message: "Welcome back to Mercury Tours! Enter your user information to access the member-only areas of this site. If you don't have a log-in, please fill out the [registration form](#)." Below the message are two input fields: "User Name:" and "Password:". A "SUBMIT" button is located below the password field. At the bottom of the page, there is a copyright notice: "© 2000, Mercury Interactive (v. 020131-1.01-060)".

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

The Flight Finder page opens.

**MERCURY TOURS**

one cool summer **ARUBA**

SIGN-OFF ITINERARY PROFILE SUPPORT CONTACT

**FLIGHT FINDER**

Use our Flight Finder to search for the lowest fare on participating airlines. Once you've booked your flight, don't forget to visit the Mercury Tours Hotel Finder to reserve lodging in your destination city.

**Flight Details**

Type:  Round Trip  One Way

Passengers: 1

Departing From: Acapulco

On: May 20 View Calendar

Arriving In: Zurich

Returning: May 21 View Calendar

**Preferences**

Service Class:  Economy class  
 Business class  
 First class

Airline: No Preference

**CONTINUE**

**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.



Now that you are familiar with the Quality Center testing process, the Quality Center modules, and the Mercury Tours sample Web site, you can proceed to Lesson 2, "Specifying Releases and Cycles." In Lesson 2, you will learn how to define your releases and cycles.

# 2

---

## Specifying Releases and Cycles

You begin the testing process by specifying releases in the Releases module. 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.

After you create requirements in the Requirements module, you assign them to releases and cycles (see the lesson “Specifying Requirements” on page 31). You later plan tests to test these requirements and run them as part of test sets, belonging to test set folders. Each test set folder is assigned to a cycle (see the lesson “Running Tests” on page 73). When you begin logging defects, you can assign them to specific cycles (see the lesson “Adding and Tracking Defects” on page 105). In this way, you can keep track of the progress and quality of your release.

In this lesson, you will learn about:	On page:
Defining Releases and Cycles	24
Viewing Releases and Cycles	26

## Defining Releases and Cycles

In this exercise, you will define a release and its constituent cycles. Releases and cycles each have start dates and end dates. The date range for a cycle must be contained within the date range for the release to which it belongs.

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 13.

### 2 Display the Releases module.

Click the **Releases** button on the sidebar.

### 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, select the **Service Pack 1** release.

Choose **Releases > 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 and quality 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.

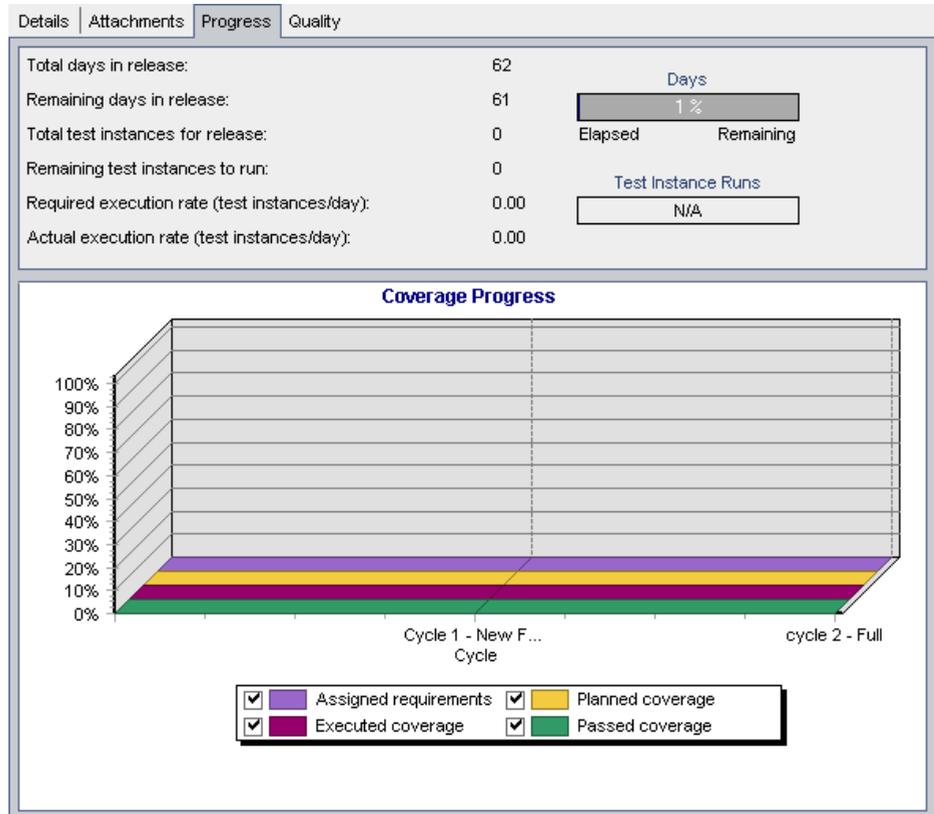
**To view releases and cycles:**

### 1 Make sure the Releases module is displayed.

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

## 2 Display the Progress graph for the Service Pack 1.

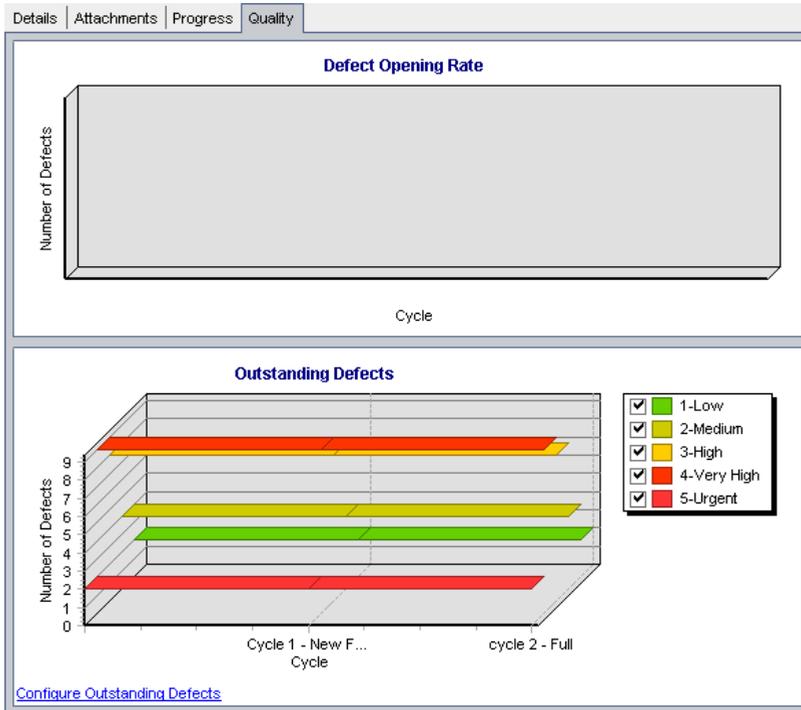
In the releases tree, select the **Service Pack 1** release, located in the **Service Packs** release folder. In the right pane, click the **Progress** tab.



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 Quality graph for the Service Pack 1 release.

In the right pane, click the **Quality** tab.



The **Defect Opening Rate** graph summarizes the number of defects detected in the selected release. The defects are categorized according to their severity. The current status of the defects is not considered. As you have not yet reported defects, the graph is empty.

The **Outstanding Defects** graph summarizes the number of outstanding defects for the selected release. The defects are categorized according to their severity. By default, defects with the status of New, Open, and Reopen are displayed in the graph.

Although you have not yet reported any defects, the graph shows outstanding defects. This is because some of the defects in this project are not assigned to any release and therefore are considered to be outstanding.

#### 4 Display the Progress graph and Quality 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.

Now click the **Quality** tab. Both graphs are empty.



Now that you are familiar with defining and viewing releases and cycles, you can proceed to Lesson 3, “Specifying Requirements.” In Lesson 3, you will learn how to define your testing requirements.



# 3

---

## Specifying Requirements

After you have defined releases and cycles, you specify requirements in the Requirements module. Requirements describe in detail what needs to be tested in your application and provide the test team with the foundation on which the entire testing process is based.

You define the requirements in Quality Center by creating a *requirements tree*. This is a graphical representation of your requirements specification, displaying your requirements hierarchically. You can group and sort requirements in the tree, monitor task allocation, monitor the progress in meeting requirements, and generate detailed reports and graphs.

After you create tests in the Test Plan module, you can link requirements to tests (see the lesson “Planning Tests” on page 47). Later, after you begin logging defects, you can also link requirements to defects (see the lesson “Adding and Tracking Defects” on page 105). In this way, you can keep track of your testing needs at all stages of the testing process. If a requirement changes, you can immediately identify which tests and defects are affected, and who is responsible for them.

In this lesson, you will learn about:	On page:
Defining Requirements	32
Viewing Requirements	36
Modifying Requirements	39
Converting Requirements	41

## Defining Requirements

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

---

**Note:** In addition to creating requirements directly in Quality Center, you can also import requirement data from Microsoft Word or Microsoft Excel to your Quality Center project. To import from Word, you must install the **HP Quality Center Microsoft Word Add-in** and the **HP Quality Center Connectivity Add-in**. To import from Excel, you must install the **HP Quality Center Microsoft Excel Add-in** and the **HP Quality Center Connectivity Add-in**. You can install the add-ins from the HP Quality Center Add-ins page. For more information, refer to the *HP Quality Center Installation Guide*.

---

**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 13.

**2 Display the Requirements module.**

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

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

---

**Note:** This lesson uses the **Requirements Tree** view. For more information on the **Requirements Grid** view, see “Viewing Requirements” on page 36. For more information on the **Requirements Details** and **Coverage Analysis** views, see “Creating and Viewing Requirements Coverage” on page 61.

---

### 3 Create a new requirement and assign it to a requirement type.

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



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

The screenshot shows a dialog box titled "Create New Requirement". It has a blue title bar with a close button. Below the title bar, there are two input fields. The first is labeled "Requirement Type:" and has a dropdown menu with "Business" selected. To the left of the dropdown is a small folder icon. The second field is labeled "Requirement Name:" and is an empty text box. At the bottom of the dialog are three buttons: "OK", "Cancel", and "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. For more information on configuring requirement types, see the *HP Quality Center Administrator's Guide*.

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

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

The screenshot shows a 'New Requirement' dialog box with the following fields and values:

- Name:** Cruise Reservation
- Requirement Type:** Functional
- Priority:** (empty dropdown)
- Product:** (empty dropdown)
- Author:** alice\_qc
- Direct Cover Status:** (empty dropdown)
- Modified:** (empty text field)
- Old Type (obsolete):** (empty dropdown)
- RBT Date of last Analysis:** (empty text field)
- Reviewed:** Not Reviewed
- Reviewer:** (empty dropdown)
- Target Cycle:** (empty dropdown with ellipsis)

At the bottom of the dialog are 'Submit' and 'Close' buttons.

#### 4 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.

## 5 Add a child requirement.

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**.

In the New Requirement dialog 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.

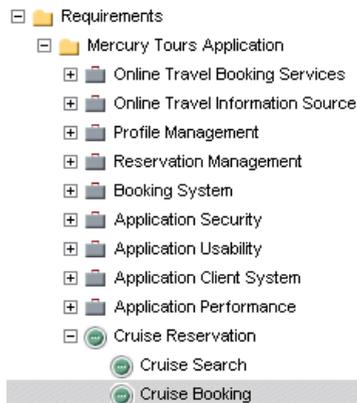
Click **Close** to close the New Requirement dialog box.

## 6 Add an additional child requirement.

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

Repeat step 5. This time in the **Requirement Name** box, type **Cruise Booking**.

The **Cruise Booking** requirement is added as a child of the **Cruise Reservation** requirement.



## 7 Assign the requirements to a cycle.

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 child requirements of the requirement as well as to the requirement itself.

In the columns displayed, you can see that Quality Center assigns the **Cycle 1 - New Features** value to the **Target Cycle** field and the value **Service Pack 1** to the **Target Release** field.

## 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 requirement 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**.

Requirements Edit View Favorites Analysis			
Zoomed in to: Requirements\Mercury Tours Application\Cruise Reservation			
Name	Direct	Cover Status	Author Reviewed
Cruise Search		No Run	alice_gc Not Reviewed
Cruise Booking		No Run	alice_gc Not Reviewed

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 Filter the requirements grid.



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

**Filter** [X]

Requirement Type:  ...

Hide Risk-Based Quality Management Columns

Filter Condition | View Order

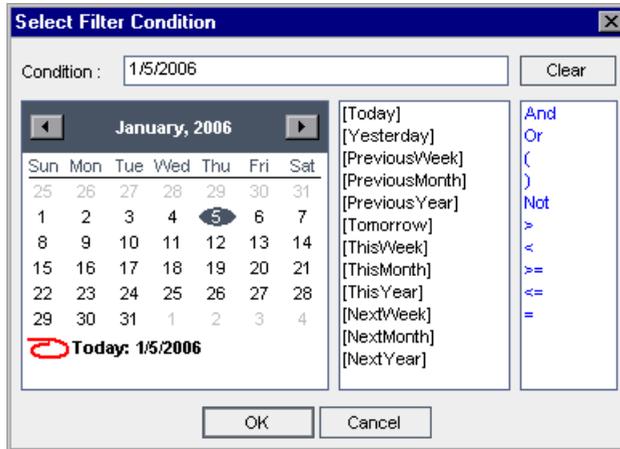
Field Name	Filter Condition
Author	
Creation Date	
Creation Time	
Direct Cover Status	
Modified	
Name	
Old Type (obsolete)	
Priority	
Product	
Req Parent	

Cross filter by:

OK Cancel Help

### Lesson 3 • Specifying Requirements

Click the **Filter Condition** box that corresponds to **Creation Date**. Click the browse button. The Select Filter Condition dialog box opens, displaying today's date in the **Condition** box.



Select the date on which you added requirements, or accept the default date.

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.

The image shows a 'Requirements' window with a menu bar (Requirements, Edit, View, Favorites, Analysis) and a toolbar with various icons. Below the toolbar, the filter is set to 'Filter: Creation Date[ 1/5/2006 ]'. The main area contains a table with the following data:

Author	Creation Date	Creation Time	Direct Cover	Modified	Name	Priority	Product	
	1/5/2006							
michael_qc	1/5/2006	8:50:27 AM	No Run	1/5/2006 9:33:50 AM	Cruise Search	4-Very High	Mercury Tours	s
michael_qc	1/5/2006	8:50:45 AM	No Run	1/5/2006 9:33:54 AM	Cruise Booking	4-Very High	Mercury Tours	s
michael_qc	1/5/2006	8:49:46 AM	Not Covered	1/5/2006 9:33:59 AM	Cruise Reservation	4-Very High	Mercury Tours	s

## Modifying Requirements

You can modify the requirements in the requirements tree. In this exercise, you will learn how to copy, rename, move, and delete requirements.

**To modify 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 Copy a requirement.

In the requirements tree, right-click **Cruise Reservation** and choose **Copy**.

Right-click the **Mercury Tours Application** requirement and choose **Paste**.

A warning box opens because you are duplicating the requirement name. Click **OK**. The requirement is pasted under the selected requirement. **\_Copy\_1** is added to the end of the requirement's name. Note that the requirement was copied and pasted with its child requirements.

### 3 Rename the Cruise Reservation\_Copy\_1 requirement.

Right-click the **Cruise Reservation\_Copy\_1** requirement and choose **Rename**.

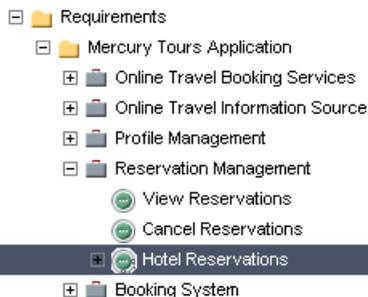
Change the requirement name to **Hotel Reservations** and press **Enter**.

### 4 Move the Hotel Reservations requirement to a different location in the requirements tree.

Right-click the **Hotel Reservations** requirement and choose **Cut**.

To paste **Hotel Reservations** as a child of the **Reservations Management** requirement, right-click **Reservation Management** and choose **Paste**.

Click **Yes** to confirm.



---

**Tip:** You can also drag requirements to a new location in the requirements tree.

---

### 5 Delete the Hotel Reservations requirement.

Select **Hotel Reservations**.



Click the **Delete** button.

Click **Yes** to confirm. The requirement and its children are deleted.

## Converting Requirements

After you create the requirements tree, you 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 47.

---

**Tip:** You can also use risk-based quality management to analyze your requirements and use this analysis as a basis for planning your testing. For more information on risk-based quality management, see the *HP Quality Center User’s Guide*.

---

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.

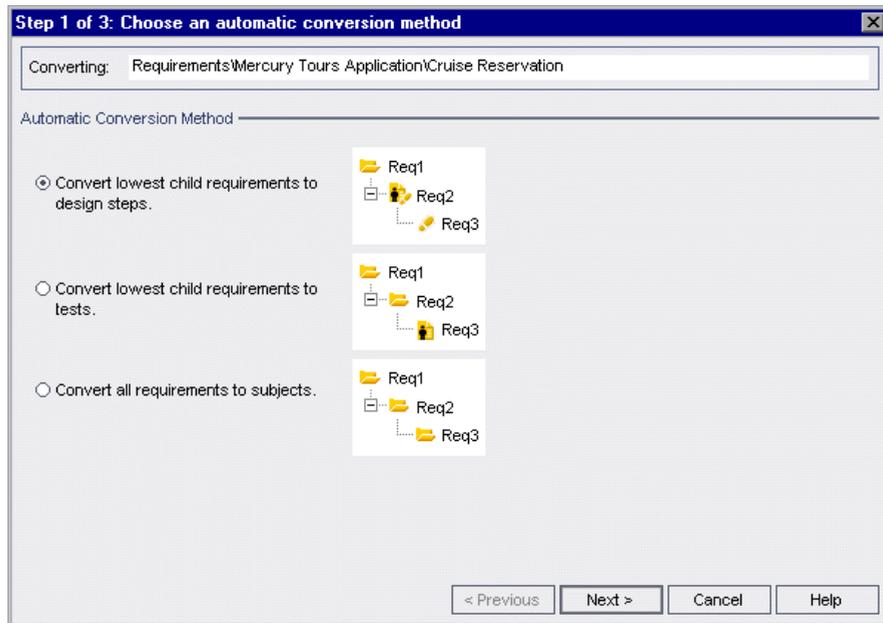
Choose **View > Requirements Tree** to display requirements in the Requirements Tree view.

**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.

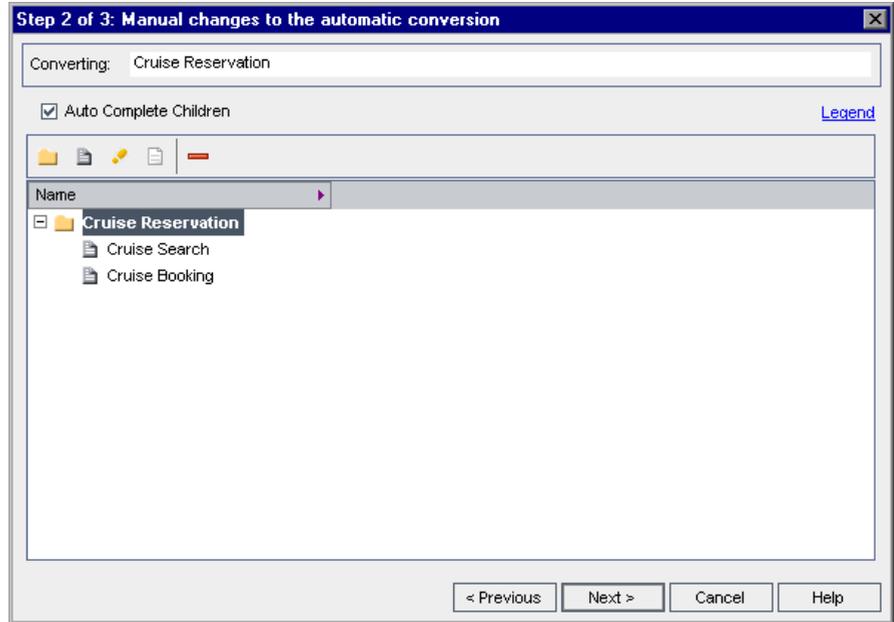


### 4 Choose an automatic conversion method.

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.



## 6 Convert Cruise Search to a step and restore it.

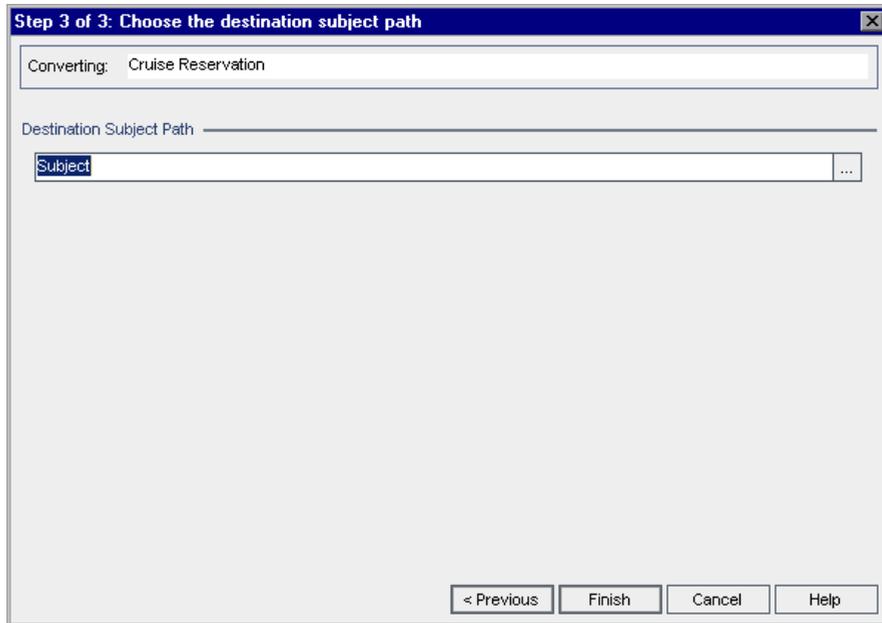


To convert the **Cruise Search** test to a step, select **Cruise Search** and click the **Convert to Step** button. The **Cruise Search** test is converted to a step.



To restore the **Cruise Search** test, select **Cruise Search** and click the **Convert to Test** button. The **Cruise Search** step is converted back to a test.

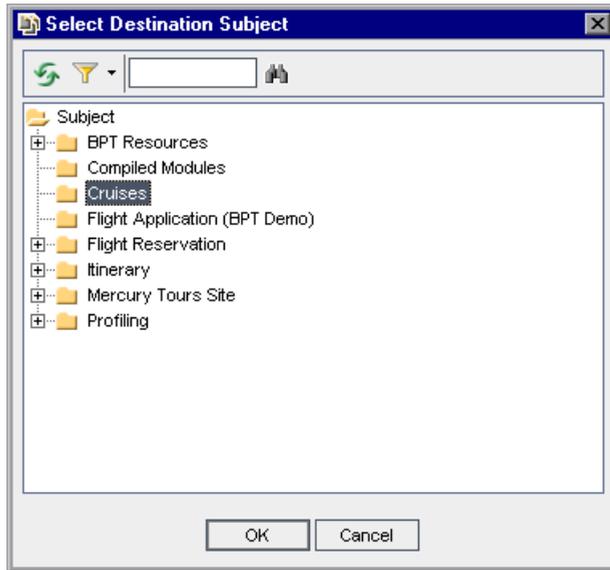
Click **Next**. The Step 3 dialog box opens.



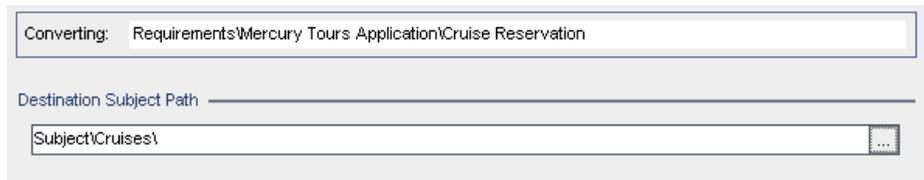
## 7 Choose the destination subject path.

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

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:



## 8 Finalize the conversion process.

Click **Finish**.

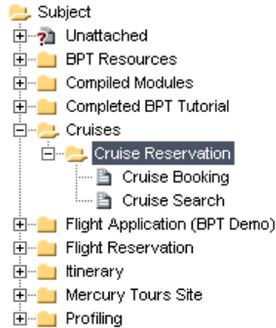
Click **OK**.

## 9 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.



Now that you are familiar with defining requirements, viewing and modifying the requirements tree, and converting requirements, you can proceed to Lesson 4, “Planning Tests.” In Lesson 4, you will learn how to define your test plan tree.

# 4

---

## Planning Tests

After you define your requirements, you need to determine your testing goals. To do this, examine your application, system environment, and testing process to outline the testing strategy for achieving your goals.

After you determine your testing goals, 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 add links between them. This can help you ensure compliance with your requirements throughout the testing 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:	On page:
Developing a Test Plan Tree	48
Designing Test Steps	51
Copying Test Steps	55
Calling Tests with Parameters	57
Creating and Viewing Requirements Coverage	61
Generating Automated Test Scripts	70

## 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 41). In this exercise, you will add a subject and a test to the test plan tree in the Test Plan module.

---

**Note:** In addition to creating a test plan tree directly in Quality Center, you can also import test plan data from Microsoft Word or Microsoft Excel to your Quality Center project. To import from Word, you must install the **HP Quality Center Microsoft Word Add-in** and the **HP Quality Center Connectivity Add-in**. To import from Excel, you must install the **HP Quality Center Microsoft Excel Add-in** and the **HP Quality Center Connectivity Add-in**. You can install the add-ins from the HP Quality Center Add-ins page. For more information, refer to the *HP Quality Center Installation Guide*.

---

**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 13.

**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.

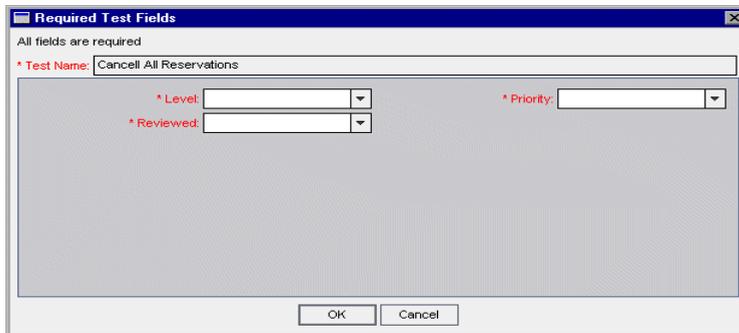
---

**Note:**

- ▶ The **QUICKTEST\_TEST** test type is available only if you have installed the HP QuickTest Professional Add-in from the HP Quality Center Add-ins page. For more information on installing the add-in, refer to the *HP Quality Center Installation Guide*.
  - ▶ If you selected **QUICKTEST\_TEST** from the **Test Type** list, the **Template** box is available on the Create New Test dialog box. You can create your new test based on another QuickTest Professional test, defined as a template test. Quality Center copies the template test to your new test without the test results. For more information about template tests, refer to the *HP Quality Center User's Guide*.
- 

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:

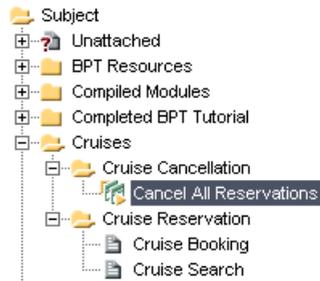
**Level:** Basic

**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.



## 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.

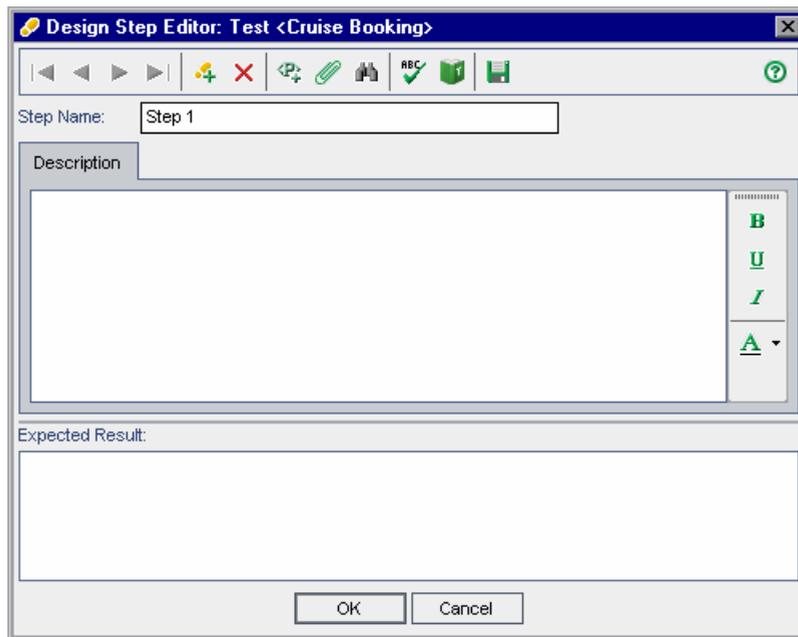
**2 Display the Cruise Booking test.**

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).

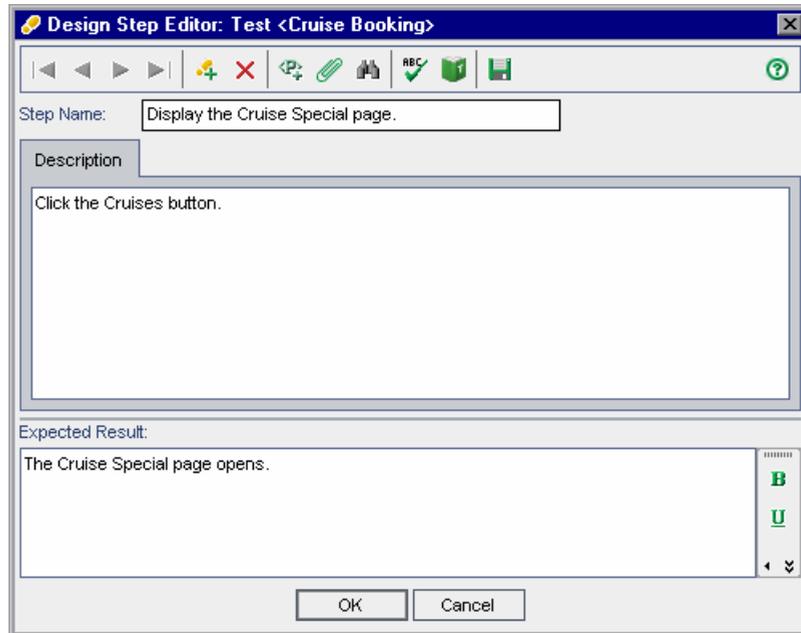
#### 4 Define a step for displaying the Cruise Special page.

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, 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, 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, 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, click the **New Step** button. The **Step Name** box displays **Step 5**.

Type the following:

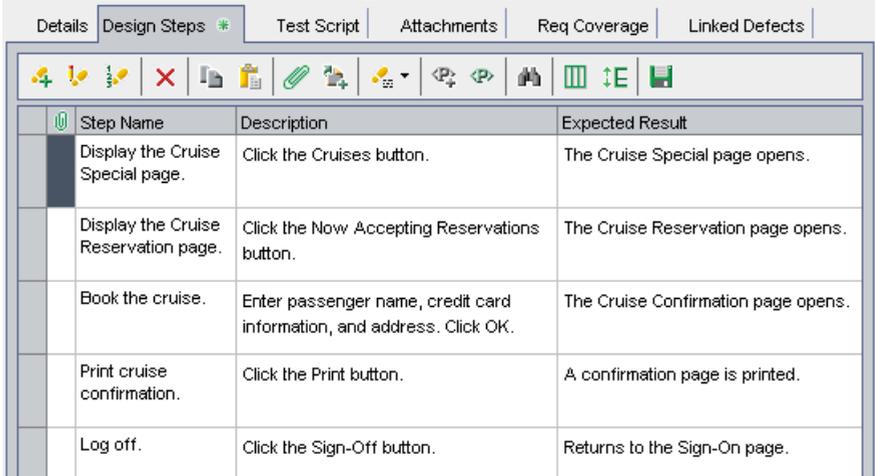
**Step Name:** Log off.

**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.

## 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 step.

Details	Design Steps #	Test Script	Attachments	Req Coverage	Linked Defects																		
	<table border="1"> <thead> <tr> <th>Step Name</th> <th>Description</th> <th>Expected Result</th> </tr> </thead> <tbody> <tr> <td>Display the Cruise Special page.</td> <td>Click the Cruises button.</td> <td>The Cruise Special page opens.</td> </tr> <tr> <td>Display the Cruise Reservation page.</td> <td>Click the Now Accepting Reservations button.</td> <td>The Cruise Reservation page opens.</td> </tr> <tr> <td>Book the cruise.</td> <td>Enter passenger name, credit card information, and address. Click OK.</td> <td>The Cruise Confirmation page opens.</td> </tr> <tr> <td>Print cruise confirmation.</td> <td>Click the Print button.</td> <td>A confirmation page is printed.</td> </tr> <tr> <td>Log off.</td> <td>Click the Sign-Off button.</td> <td>Returns to the Sign-On page.</td> </tr> </tbody> </table>	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.				
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.																					

## 3 Copy the selected steps.



Click the **Copy Steps** button.

## 4 Paste the steps into the Cruise Search test.

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

When you design test steps, you can include a call to a manual test. When you run the test, the test steps include the steps from the called test as part of the test. The test that you call is a *template* test. This is a reusable test that can be called by other tests. A template test can include *parameters*. A parameter is a variable that replaces a fixed value. You can modify the value of a parameter according to the test that is calling it, or for various instances of the same test.

For example, suppose you have a test that logs in a user with a specific password when you start your application. You need to call this test at the beginning of each test. In some cases, you may want to log in as a regular user while in other cases, you may want to log in as the administrator. To accomplish this, you create two parameters, <<<user name>>> and <<<password>>>, and modify the value of each parameter according to the type of test that is calling your template test.

In “Designing Test Steps” on page 51, 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:

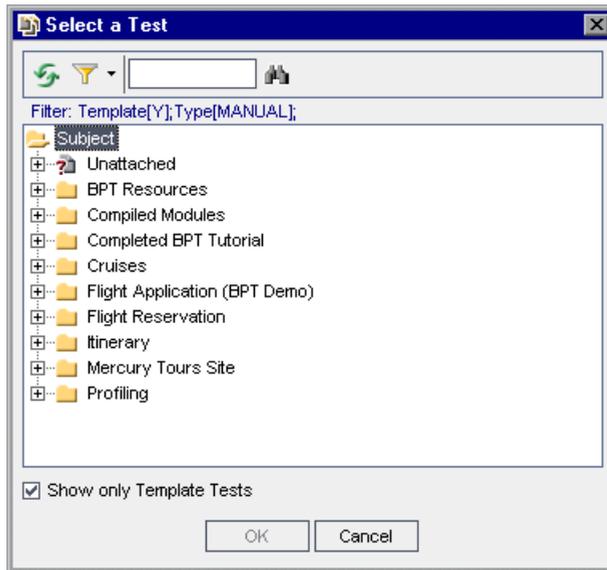
**1 Display the Design Steps tab for the Cruise Booking test.**

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

Click the **Design Steps** tab.

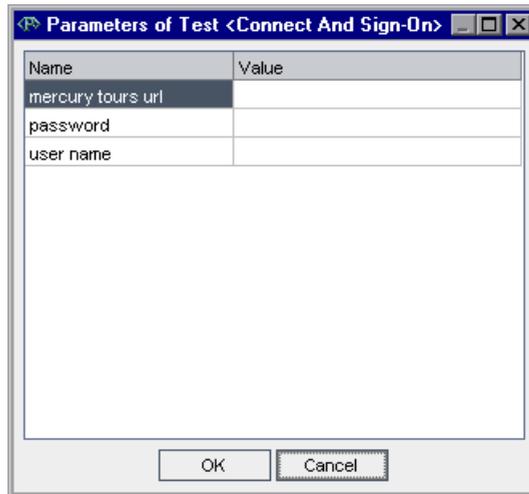
**2 Select the test with parameters that you want to call.**

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 values to the parameters.

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

**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 89).

**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 19.

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.

Details		Design Steps #	Test Script	Attachments	Req Coverage	Linked Defects
Step Name	Description	Expected Result				
Call <Connect And Sign-On> <a href="#">Call &lt;Connect And Sign-On&gt; with the following parameters: mercury tours url='http://tab1.mtours/index.html', password=?, user name='michael_gc'</a>						
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.				

## Creating and Viewing Requirements Coverage

It is essential that the tests in your test plan comply with your testing requirements. To help ensure compliance throughout the testing 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 115). 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 Tests 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.

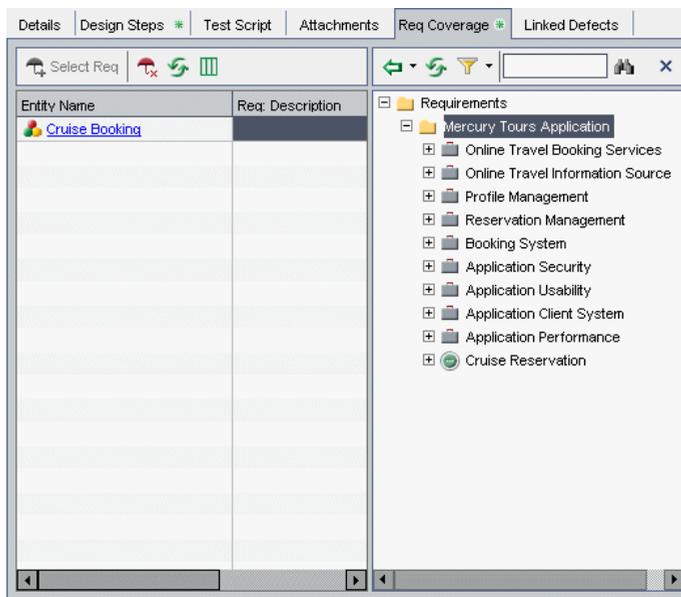
Expand the **Cruises** and **Cruise Reservation** subject folders, and select the **Cruise Booking** test.

## 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 41).

## 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.

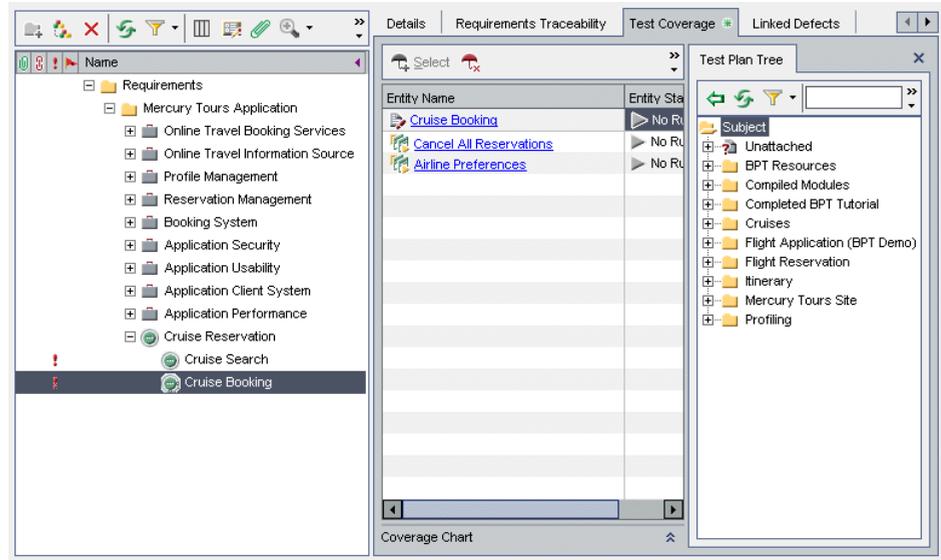
**4 Display the Test Coverage tab.**

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.



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 Tests Coverage

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

In this exercise, you will analyze the **Application Client System** requirement. In the Coverage Analysis view, you will see that two of the requirement's children have a "Failed" status (one or more of the tests covered by the requirement failed) and nine have a "Not Covered" status (the requirement has not been linked to a test). You will then analyze the failed requirements in more detail.

**To analyze tests 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.

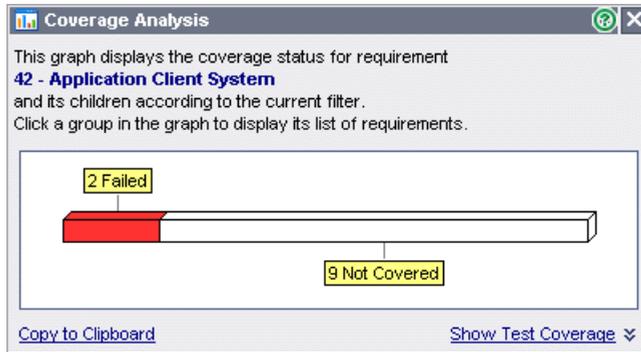
Under the **Mercury Tours Application** requirement, expand the **Application Client System** requirement and its children.

Name	Direct Cover Status	Coverage Analysis
Application Client System	-----	2 / 9
Hardware	-----	2 / 6
Processor	? Not Covered	○ Not Covered
Memory	? Not Covered	○ Not Covered
Virtual Memory	? Not Covered	○ Not Covered
Disk Space	? Not Covered	○ Not Covered
Monitor	-----	2 / 2
Size	✗ Failed	● Failed
Resolution	✗ Failed	● Failed
Internet Connection Speed	? Not Covered	○ Not Covered
Printer	? Not Covered	○ Not Covered
Software	-----	3 / 3
Operating System	-----	1 / 1
Microsoft Windows	? Not Covered	○ Not Covered
Browser	-----	2 / 2
Internet Explorer	? Not Covered	○ Not Covered
Netscape	? Not Covered	○ Not Covered
Application Performance	-----	2 / 4 / 5 / 1
Cruise Reservation	? Not Covered	2 / 1

In the Coverage Analysis column, you can see graphically that of the eleven children that have a direct cover status, only two have “Failed” and nine are not yet covered. Note that the **Application Client System, Hardware, Monitor, Software, Operating System, and Browser** requirements do not have a direct cover status as they belong to requirement types that do not support coverage.

#### 4 Display coverage analysis for the Application Client System requirement.

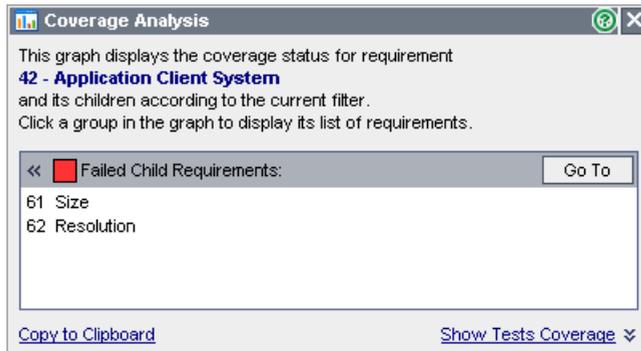
Right-click the **Application Client System** requirement, and choose **Coverage Analysis**. The Coverage Analysis dialog box opens.



This graph displays the two “Failed” requirements in red and the nine “Not Covered” requirements in white.

#### 5 Display the child requirements with a “Failed” status.

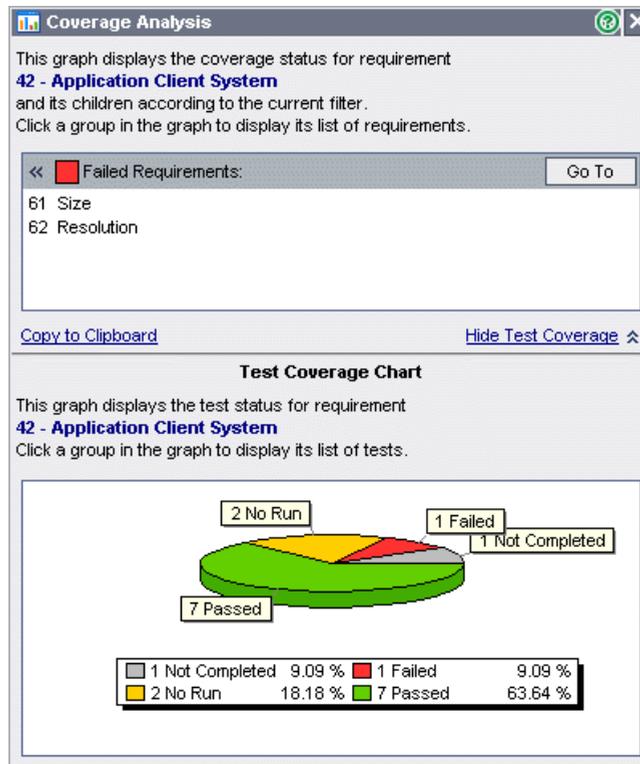
Click the red **Failed** area of the graph. The child requirements with a “Failed” status are listed.



Note that you can select a requirement and click **Go To** to highlight the requirement in the requirements tree.

## 6 Display tests coverage for the requirement.

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



You can see, for example, that one (9.09%) of the tests associated with the **Application Client System** requirement has a “Failed” status. Seven of the associated tests (63.64%) have a “Passed” status.

Note that you can click a section of the chart to open the Tests Coverage dialog box and display the list of tests with the selected status.

## 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 perform 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.

<b>Do automate:</b>	<ul style="list-style-type: none"> <li>➤ Tests that will run with each new version of your application to check the stability of basic functionality across the entire application (regression tests).</li> <li>➤ Tests that use multiple data values for the same operation (data-driven tests).</li> <li>➤ Tests that are run many times (stress tests) and tests that check a multi-user client/server system (load tests).</li> </ul>
<b>Do not automate:</b>	<ul style="list-style-type: none"> <li>➤ Tests that will be executed only once.</li> <li>➤ Tests that require immediate execution.</li> <li>➤ Tests that check how easy the application is to use (usability tests).</li> <li>➤ Tests that do not have predictable results.</li> </ul>

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

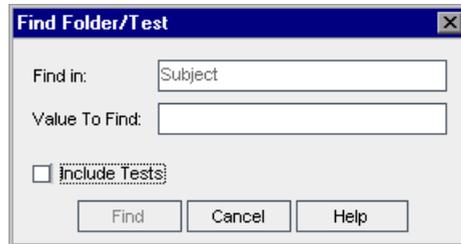
**To generate an automated test script:**

**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.

Select **Flight Reservation \ Book Flight** folder and click the **Go To** button to highlight the test in the test plan tree. Select the **Address Options** test.

Click **Close** to close the Search Results dialog box.

## 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.

---

**Note:** The **QUICKTEST-TEST** test type is only available if you have installed the **HP QuickTest Professional add-in** from the HP Quality Center Add-ins page. For more information on installing the add-in, refer to the *HP Quality Center Installation Guide*.

---

The steps in the **Address Options** test are used to create an automated test script. In the test plan tree, note that 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.



Now that you are familiar with creating a test plan tree, designing test steps, copying test steps, calling a test with parameters, linking tests to requirements, analyzing tests coverage, and automating your manual tests, you can proceed to Lesson 5, “Running Tests.” In Lesson 5, you will learn how to run your manual and automated tests.

# 5

---

## Running Tests

Running tests is the core of the testing process. As your application changes, you run manual and automated tests in your project to locate defects and assess quality.

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:	On page:
Defining Test Sets	74
Adding Tests to a Test Set	80
Scheduling Test Runs	82
Running Tests Manually	89
Viewing and Analyzing Test Results	96
Running Tests Automatically	101

## 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 process 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, think about the testing goals you defined at the beginning of the testing 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
<b>Sanity</b>	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.
<b>Regression</b>	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.
<b>Advanced</b>	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.
<b>Function</b>	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.

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 13.

**2 Display the Test Lab module.**

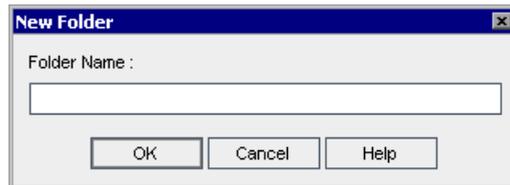
Click the **Test Lab** button on the sidebar.

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**.

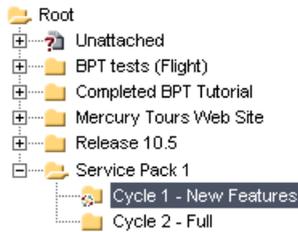
**4 Create subfolders for the test set folder.**

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.



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



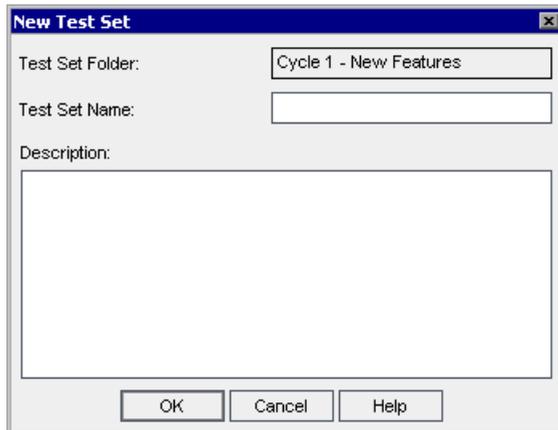
Assign the **Cycle 2 - Full** test sets folder to the **Cycle 2 - Full** cycle, located in the **Service Pack 1** release in the releases tree.

### 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 **Test Set Properties** tab and click the **Details** link.

The screenshot shows the 'Test Set Properties' dialog box with the 'Details' tab selected. The dialog has four main tabs: 'Execution Grid', 'Execution Flow', 'Test Set Properties', and 'Linked Defects'. Under 'Test Set Properties', there are four sub-tabs: 'Notifications', 'On Failure', 'Attachments', and 'Details'. The 'Details' sub-tab is active and contains the following fields:

- Close Date:** A dropdown menu.
- Open Date:** A dropdown menu with the value '02/28/07'.
- Target Cycle:** A text box with the value 'Cycle 1 - New Features'.
- ITG Request Id:** A text box.
- Status:** A dropdown menu with the value 'Open'.

Below these fields is a 'Description' section with a text area containing the text: 'This test set includes tests that verify the functionality of the Mercury Tours site.'

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

Do 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 **On Failure** link.

The screenshot shows the 'Test Set Properties' dialog box with the 'On Failure' tab selected. The dialog has four tabs: 'Execution Grid', 'Execution Flow', 'Test Set Properties', and 'Linked Defects'. Below the tabs are four sub-tabs: 'Notifications', 'On Failure', 'Attachments', and 'Details'. The 'On Failure' sub-tab is active. The main content area is divided into two sections: 'On automated test failure' and 'On final test failure'. In the 'On automated test failure' section, there are two checkboxes. The first checkbox, 'If an automated test fails, rerun the test up to', is checked, and its value is set to '1' in a spinner box, followed by the text 'times'. The second checkbox, 'Run cleanup test', is unchecked, and its value is set to '<None>' in a text box, followed by 'before each rerun of the test'. There is a 'Settings per test...' button below these options. In the 'On final test failure' section, there are three radio button options: 'Do nothing' (selected), 'Stop the test set', and 'Rerun the test set'. Below these options is a label 'Maximum number of times the test set can be rerun is' followed by a spinner box set to '1'.

Do 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 e-mail to specified users if certain events occur.

Click the **Notifications** link.

Execution Grid | Execution Flow | Test Set Properties | Linked Defects

Notifications | On Failure | Attachments | Details

Send e-mail in the event of \_\_\_\_\_

Any test in the Automatic Runner finishes with status "Failed"

Environmental failure (network problems, hardware failure, etc.)

All tests in the Automatic Runner that were run have finished

To...

Message

Do the following:

**Send e-mail in the event of:** Select the first check box to send e-mail notification if any test in the test set fails.

**To:** Type your e-mail 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**.

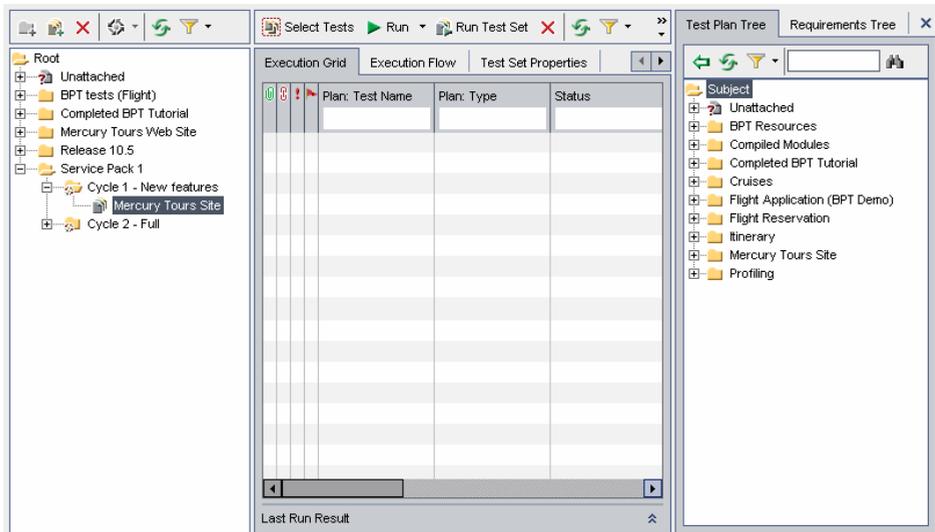
### 2 Display the Execution Grid tab.

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.



---

**Note:** If any filters are applied, it is recommended that you 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 89). 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.



Click the **Add Tests to Test Set** button. 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.



Click the **Add Tests to Test Set** button. The test is added to the test set.



#### 7 Close the test plan tree pane.

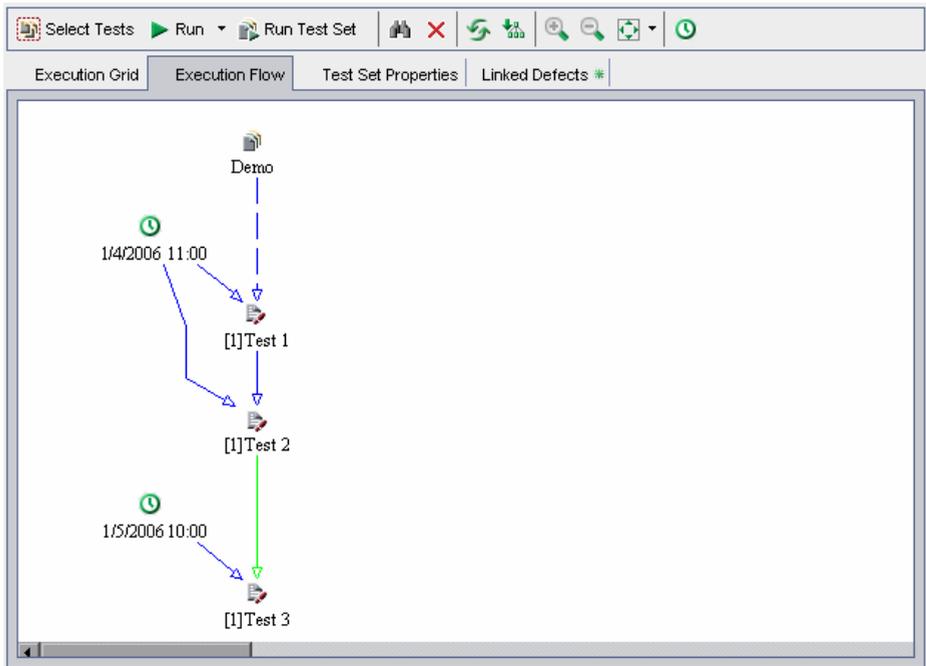
Click the **Close** button.



## 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.



---

**Note:**

- ▶ 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.

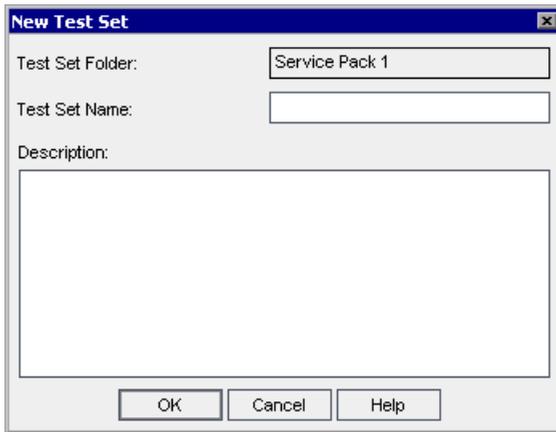
Choose **View > Test Sets Tree** to display test sets in the test sets tree.

**2 Create a new test set.**

In the Test Lab module, click the **Execution Flow** tab.



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.



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.**

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.

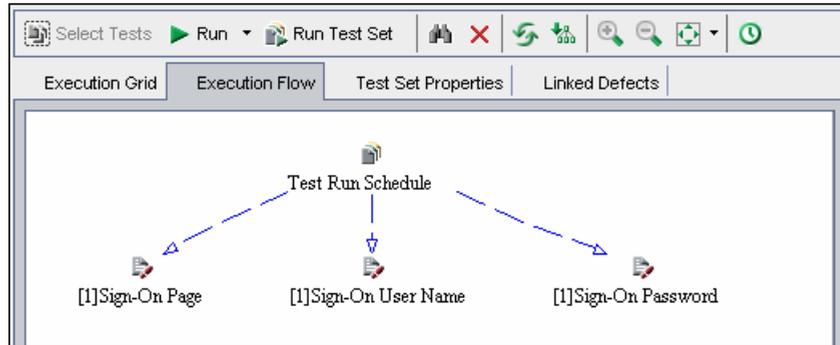


Select the **Sign-On Page** test. Click the **Add Tests to Test Set** button. The Parameters of Test dialog box opens because you are adding a test instance with an unassigned parameter value to a test set. Click **Cancel** to close the dialog box. The test instance is added to the test set.

#### 4 Add two additional test instances to the test set.

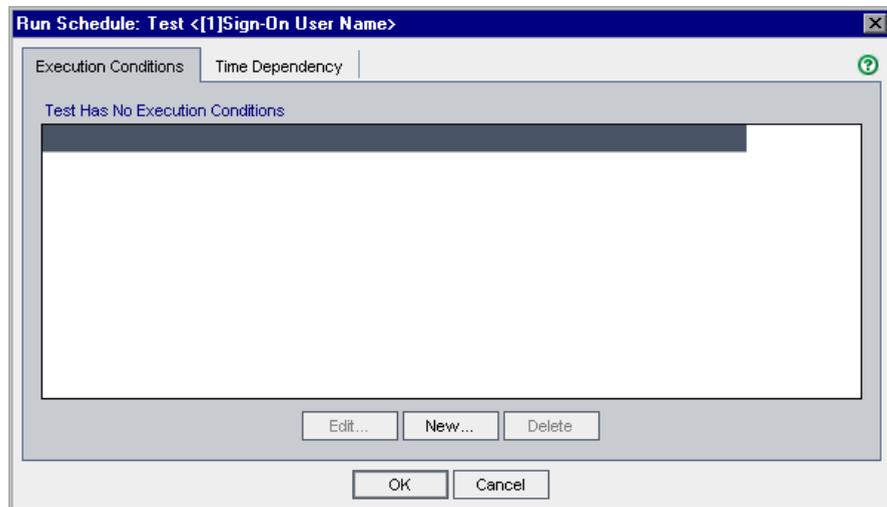
Drag the **Sign-On User Name** test to the Execution Flow area. The Parameters of Test dialog box opens. Click **Cancel**.

Double-click the **Sign-On Password** test to add it to the Execution Flow. The Parameters of Test dialog box opens. Click **Cancel**.

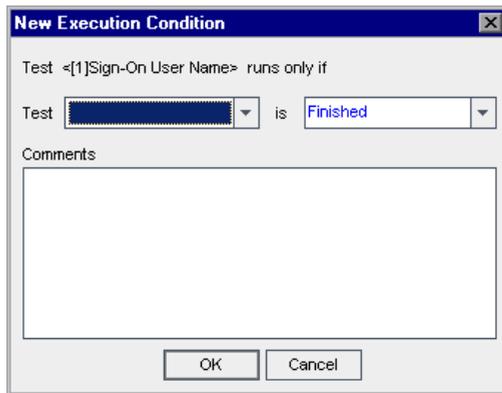


#### 5 Add an execution condition to the Sign-On User Name test.

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.



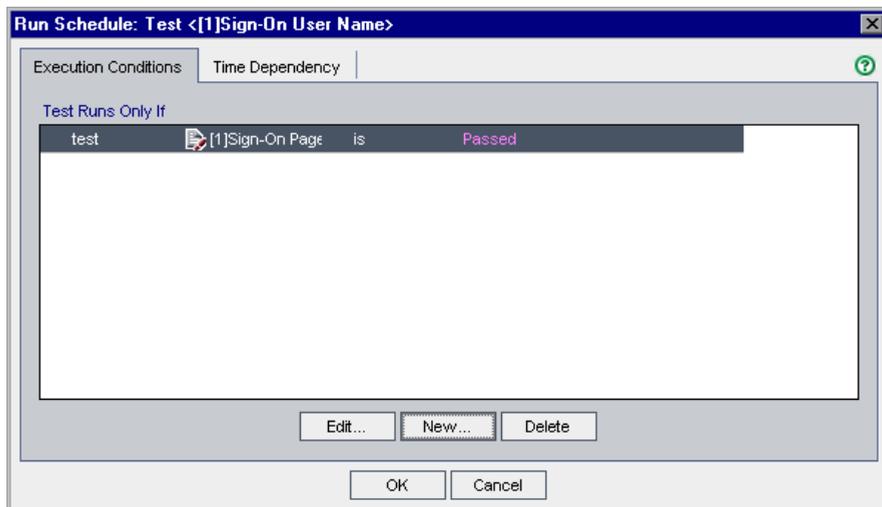
Click **New**. The New Execution Condition dialog box opens.



In the **Test** box, select <[1]Sign-On Page>.

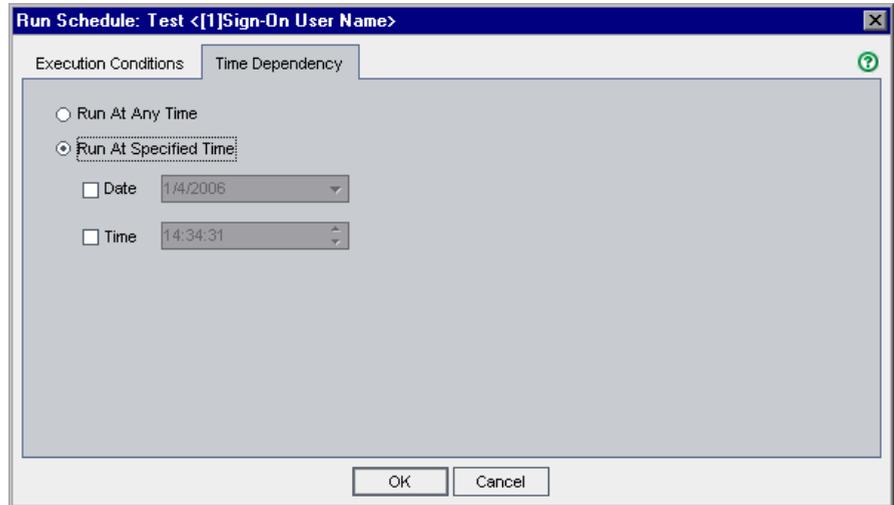
Select **Passed** to instruct Quality Center to execute the **Sign-On User Name** test instance only if the **Sign-On Page** test instance finishes executing and passes.

Click **OK**. The condition is added to the Run Schedule dialog box.



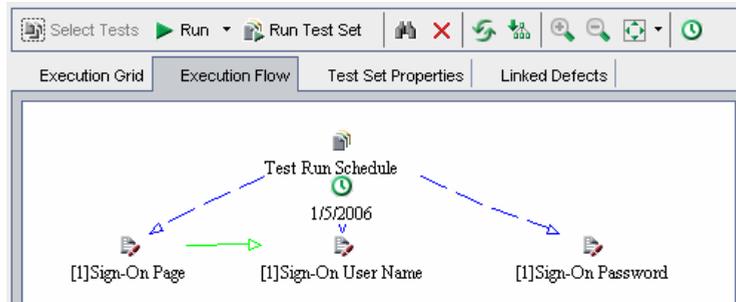
## 6 Add a time dependency condition to the Sign-On User Name test instance.

Click the **Time Dependency** tab.



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.



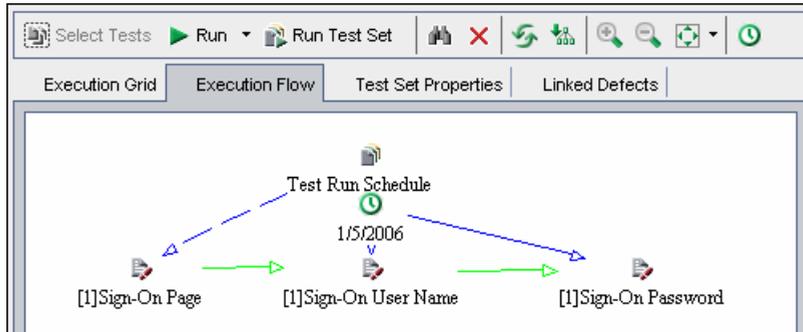
## 7 Add an execution condition to the Sign-On Password test.

Add the same execution condition as described in Step 5 on page 85 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.**

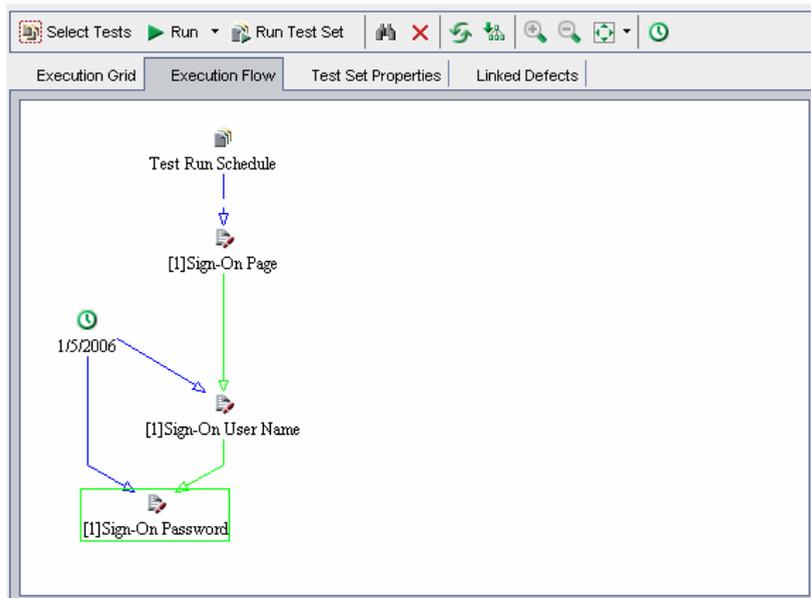
Add the same time dependency condition as described in Step 6 on page 87 for the **Sign-On Password** test.

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.

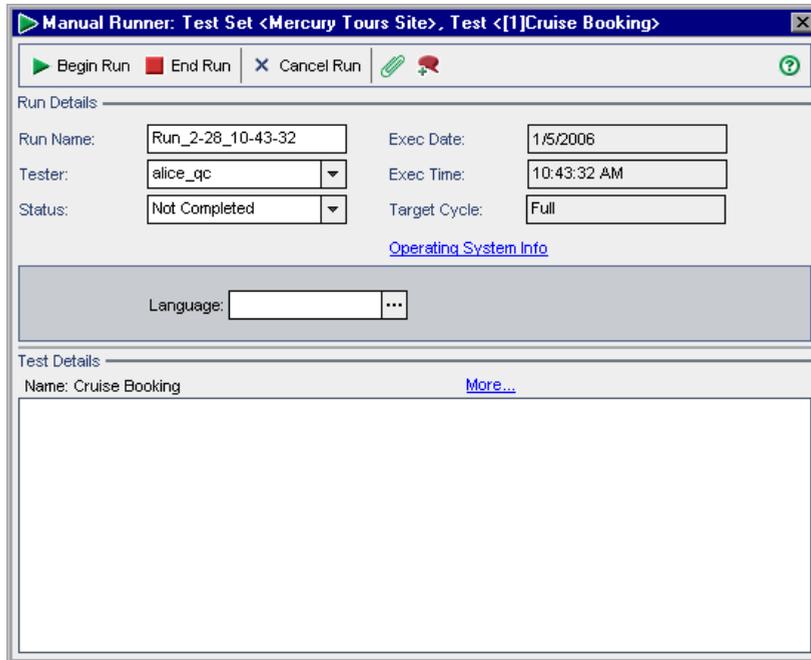
**2 Select the Mercury Tours Site test set.**

In the test sets tree, 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.

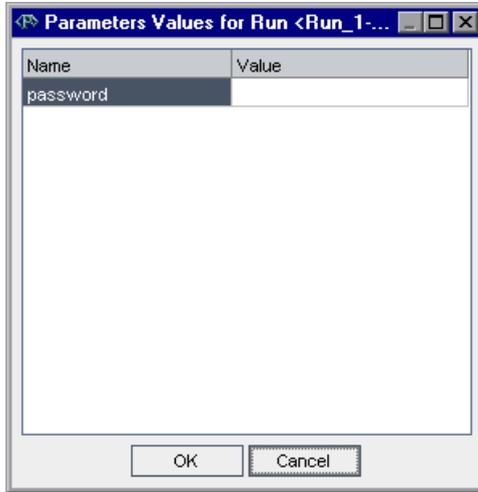
In the Execution Grid tab, select **Cruise Booking**.

Click the **Run** button. The Manual Runner dialog box opens.



#### 4 Start the test run.

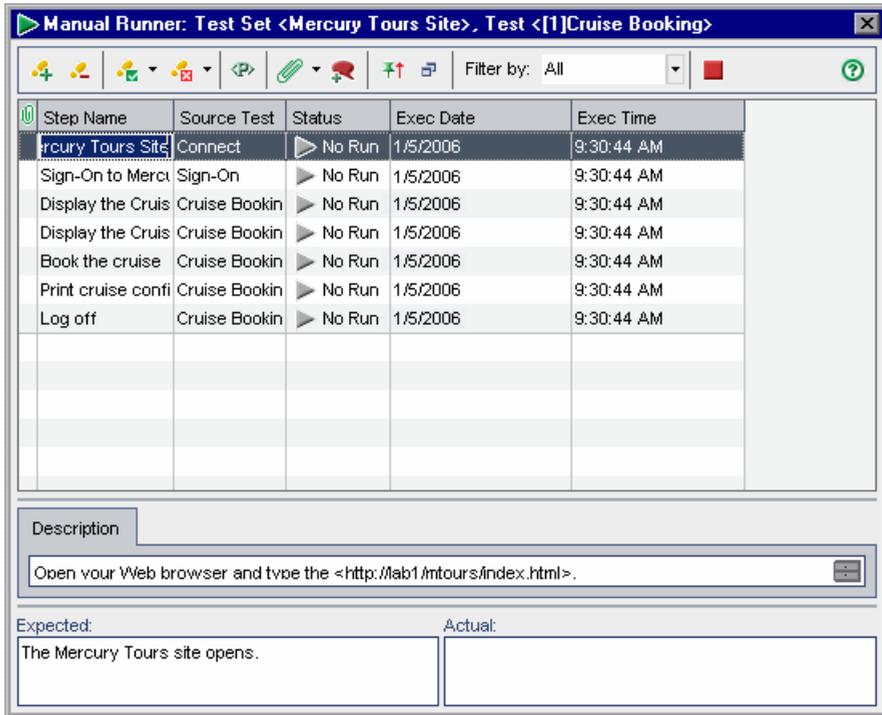
Click the **Begin Run** button. The Parameters Values for Run dialog box opens because you have an unassigned parameter in the test.



**5 Assign a value for the password parameter.**

Click the **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 19.

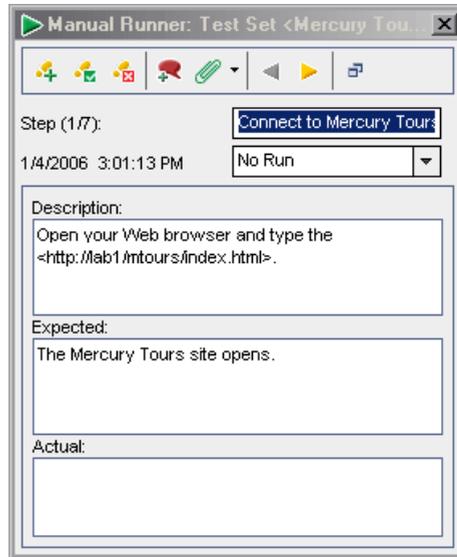
Click **OK**. The Manual Runner: Step Details dialog box opens.



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



Click the **Compact view** button. This enables you to read each step 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 107.

---

**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.”

Execution Grid		Execution Flow	Test Set Properties	Linked Defects		
Plan:	Test Name	Plan:	Type	Status	Iterations	Plan
	[1]Cruise Search	MANUAL		✓ Passed		
	[1]Cruise Booking	MANUAL		✗ Failed		
	[1]Cancel 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.

Last Run Result				Steps Details
Step Name	Status	Exec Date		
Connect to Mercury Tours Site.	✓ Passed	1/5/2006	<b>Description:</b> Open your Web browser and type the <<<Mercury Tours URL>>>. <b>Expected:</b> The Mercury Tours site opens. <b>Actual:</b> The Mercury Tours site opens.	
Sign-On to Mercury Tours Application.	✓ Passed	1/5/2006		
Display the Cruise Special page.	✓ Passed	1/5/2006		
Display the Cruise Reservation page.	✗ Failed	1/5/2006		
Book the cruise.	▶ No Run	1/5/2006		
Print cruise confirmation.	▶ No Run	1/5/2006		
Log off.	▶ No Run	1/5/2006		

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.

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

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 Tests Coverage" on page 66). You can filter the tests included in this calculation by cycle. Quality Center includes in the calculation only tests instances belonging to test sets that are under test set folders that are assigned to cycles that match the filter. For example, suppose you plan to test a requirement in several cycles of a release. You may want to analyze the requirement's coverage based only on the tests that are planned for the current cycle. You therefore filter the requirement coverage for the current cycle.

You were also previously introduced to the Progress tab in the Releases module (see "Viewing Releases and Cycles" on page 26). After you run tests in the Test Lab module, you can revisit this tab to see how the graphs and statistics change as the statuses of the tests in your releases and cycles change. This enables you to view a useful, high-level overview of the progress of your release.

In addition to these features, you can also use Quality Center reports and graphs to further analyze your test results. For more information, see Lesson 8, "Analyzing the Testing Process."

In this exercise, you will view detailed results and analysis for the tests you ran in previous exercises.

**To view and analyze 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.



The screenshot shows the 'Test Instance Properties' dialog box. At the top, it displays 'Test Name: [1]Cruise Booking', 'Cycle: Full', and 'Test Type: MANUAL'. Below this, there are navigation icons and a 'View Runs: All' dropdown. A table lists the test runs, with one row highlighted: 'Run\_5-23\_9-3-4' with a status of 'Failed', host 'KITE', duration '299', execution date '1/5/2006', and execution time '12:34:00 PM'. On the left, a sidebar contains icons for 'Details', 'All Runs', 'Attachments', 'Configuration', 'Linked Defects', and 'History'. At the bottom, a 'Steps Details' table shows the following data:

Step Name	Status	E:	Steps Details
Connect to Mercury	Passed	0:	<b>Description:</b>
Sign-On to Mercury	Passed	0:	Open your Web browser and type the <<<Mercury Tours URL>>>.
Display the Cruise S	Passed	0:	
Display the Cruise R	Failed	0:	<b>Expected:</b>
Book the cruise.	No Run	0:	The Mercury Tours site opens.

A 'Close' button is located at the bottom center of the dialog box.

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

- ▶ To view run details of the test, click **Details**.
- ▶ To view manual parameters for a test, click **Configuration** and select the **Manual tab**. Note that any changes that you make will be implemented in the next test run.
- ▶ To view and manage defect links made to other Quality Center entities, click **Linked Defects**.
- ▶ To view a list of changes made to the test run fields, click **History**.

**6 Close the Test Instance Properties dialog box.**

Click the **Close** button.

**7 Open the Requirements module in the Coverage Analysis view**

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

Choose **View > Coverage Analysis**.

**8 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 graphically that of the two children have failed.

The screenshot displays a software testing interface with a coverage analysis tool. The main window shows a tree view of requirements and their coverage status. The 'Cruise Reservation' requirement is expanded, showing two sub-requirements: 'Cruise Search' and 'Cruise Booking', both of which are marked as 'Failed'.

Name	Direct Cover Status	Coverage Analysis
Requirements	-----	55
Mercury Tours Application	-----	55
Online Travel Booking Services	-----	17
Online Travel Information Source	-----	
Profile Management	-----	3
Reservation Management	-----	1 (Failed) 1 (Failed)
Booking System	-----	6
Application Security	-----	4
Application Usability	-----	15
Application Client System	-----	2
Application Performance	-----	7
Cruise Reservation	Not Covered	2
! Cruise Search	Failed	Failed
! Cruise Booking	Failed	Failed

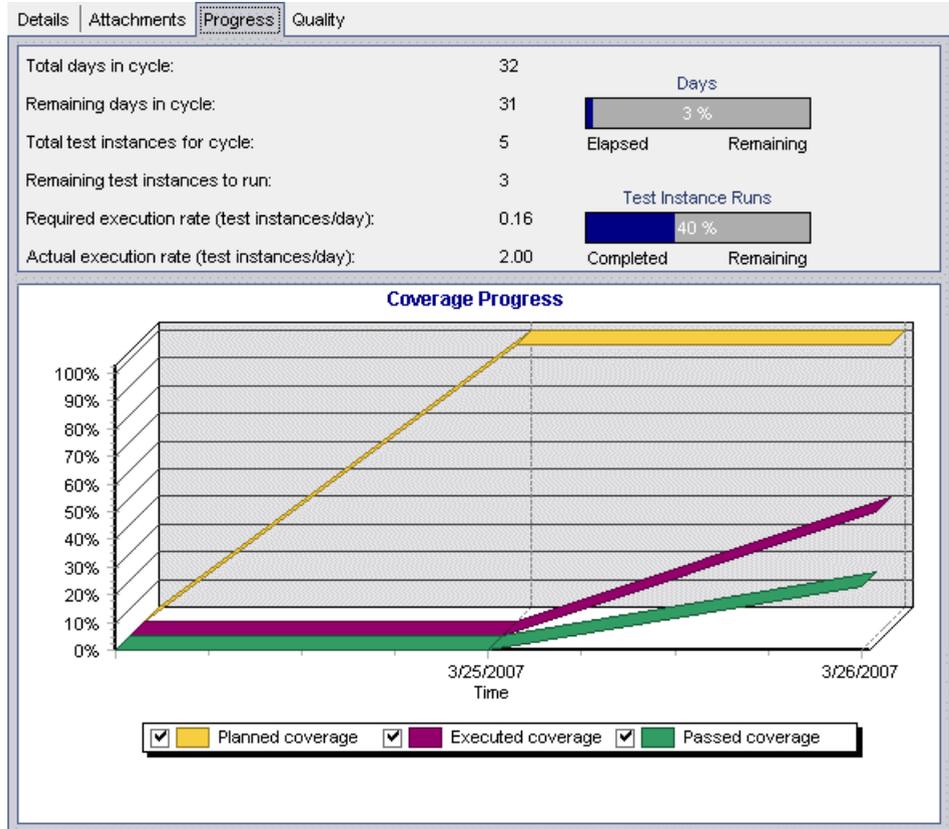
At the bottom of the window, there are tabs for Description, Comments, Attachments, History, and Content. A legend at the top right indicates the status of the requirements: Failed (red dot), No Run (yellow dot), Not Completed (grey dot), Not Covered (white dot), and Passed (green dot).

## 9 Open the Releases module.

Click the **Releases** button on the sidebar.

**10 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**. Click the **Progress** tab.



A day after **Cycle 1 - New Features** began, you can see that out of the 5 test instances, you have 3 remaining test instances to run. Under the Coverage Progress graph, the **Planned coverage** curve indicates that you have fully covered (100%) all of your assigned requirements with tests. The **Executed coverage** curve indicates that you ran 40% of your tests. The **Passed coverage** curve indicates that 20% of your tests ran successfully.

## 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.

Note that 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.

---

**Note:** To perform this exercise, 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, refer to the *HP Quality Center Installation Guide*.

---

**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.

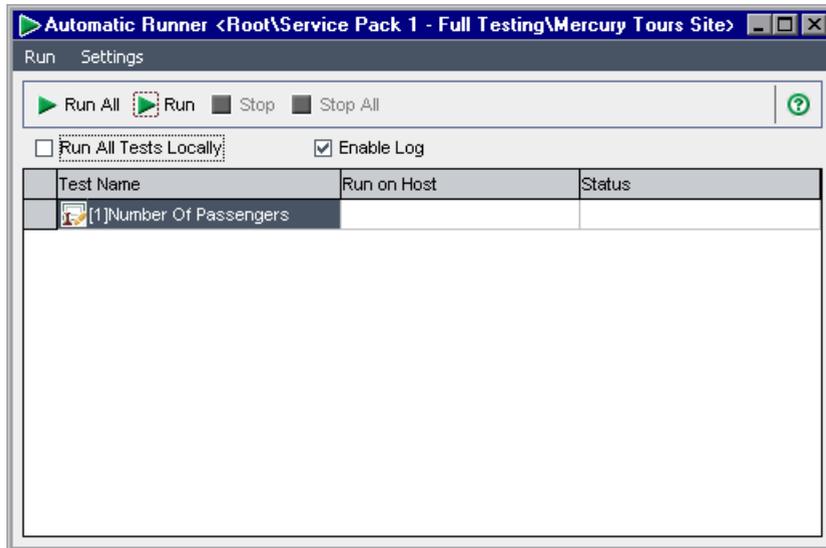
In the test sets tree, expand the **Cycle 1 - New Features** test set folder under **Service Pack 1**. Select the **Mercury Tours Site** test set.

### 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.

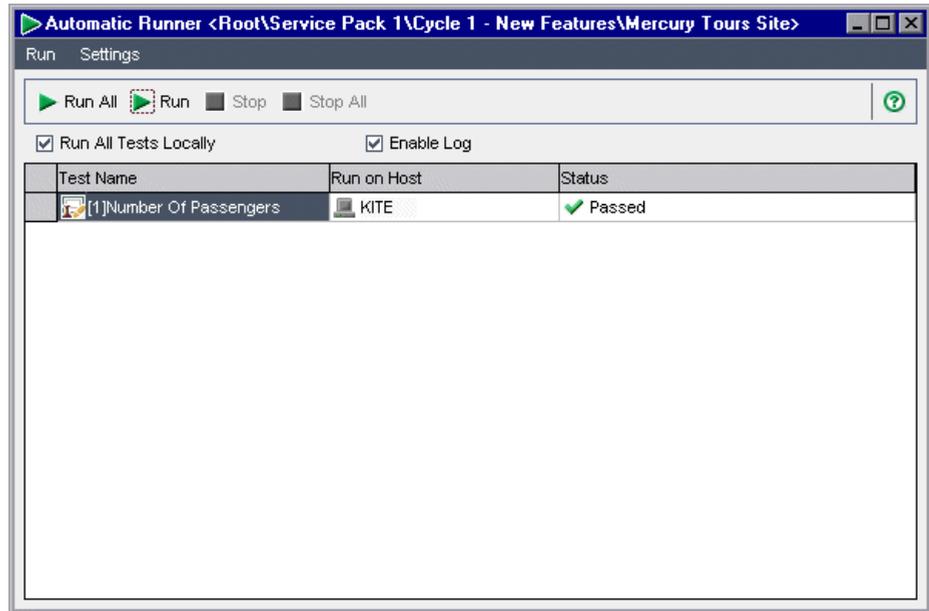


### 4 Set the test run settings.

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.

The screenshot shows the Execution Grid interface. At the top, there is a toolbar with icons for 'Select Tests', 'Run', 'Run Test Set', and other functions. Below the toolbar are tabs for 'Execution Grid', 'Execution Flow', 'Test Set Properties', and 'Linked Defects'. The 'Execution Grid' tab is active, displaying a table with the following data:

Plan	Test Name	Type	Status	Planned Host Name	Responsible Tester
[1]	Cruise Search	MANUAL	Passed		
[1]	Cruise Booking	MANUAL	Failed		
[1]	Cancel All Reservati	WR-AUTOMATED	No Run		
[1]	Airline Preference	WR-AUTOMATED	No Run		
[1]	Number Of Passengers	QUICKTEST_TEST	Passed		

Below the Execution Grid is the 'Last Run Result' pane, which includes a 'Launch Report' button and a table of test steps:

Step Name	Status	Exec Date	Steps Details
Start Test		1/4/2006	<b>Description:</b> Start Test Number Of Passengers
Start Global Iteration		1/4/2006	
Start Action		1/4/2006	<b>Expected:</b>
Replay Warning	Passed	1/4/2006	<b>Actual:</b>
Replay Warning	Passed	1/4/2006	

## 8 Close your selected testing tool.

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



Now that you are familiar with how to define and build test sets, schedule test runs, run tests manually or automatically, and view and analyze test results, you can proceed to Lesson 6, “Adding and Tracking Defects.” In Lesson 6, you will learn how to add and track defects.

# 6

---

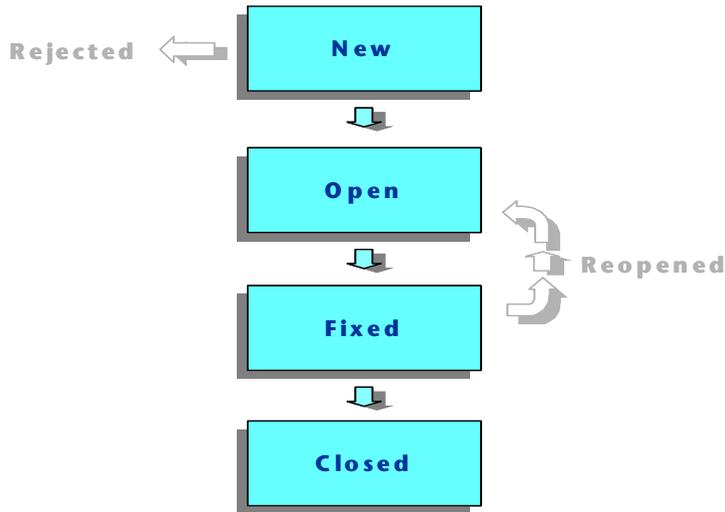
## Adding and Tracking Defects

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

<b>In this lesson, you will learn about:</b>	<b>On page:</b>
How to Track Defects	106
Adding New Defects	107
Matching Defects	109
Updating Defects	111
Linking Defects to Tests	115
Creating Favorite Views	118

## 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 the 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 testing process. In this exercise you will submit the defect that was detected while running the **Cruise Booking** test.

---

**Note:** In addition to adding defects directly in Quality Center, you can also import defect data from Microsoft Excel to your Quality Center project. To import from Excel, you must install the **HP Quality Center Microsoft Excel Add-in** and the **HP Quality Center Connectivity Add-in**. You can install the add-ins from the HP Quality Center Add-ins page. For more information, refer to the *HP Quality Center Installation Guide*.

---

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 13.

**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.

The screenshot shows a 'New Defect' dialog box with the following fields and values:

- Summary:** (Empty text box)
- Category:** (Empty dropdown)
- Subject:** (Empty dropdown)
- Detected By:** alice\_qc
- Detected on Date:** 4/22/2007
- Project:** Mercury Tours Web Site
- Detected in Version:** (Empty dropdown)
- Severity:** (Empty dropdown)
- Status:** New
- Reproducible:** Y
- Regression:** N
- Detected in Cycle:** (Empty dropdown)
- Detected in Release:** (Empty dropdown)
- Target Cycle:** (Empty dropdown)
- Target Release:** (Empty dropdown)

At the bottom of the dialog box, there is a 'Description' field and two buttons: 'Submit' and 'Close'.

### 4 Describe the defect.

Type or select 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.**

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 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.**

In the Defects Grid, select **Defect ID 37**.



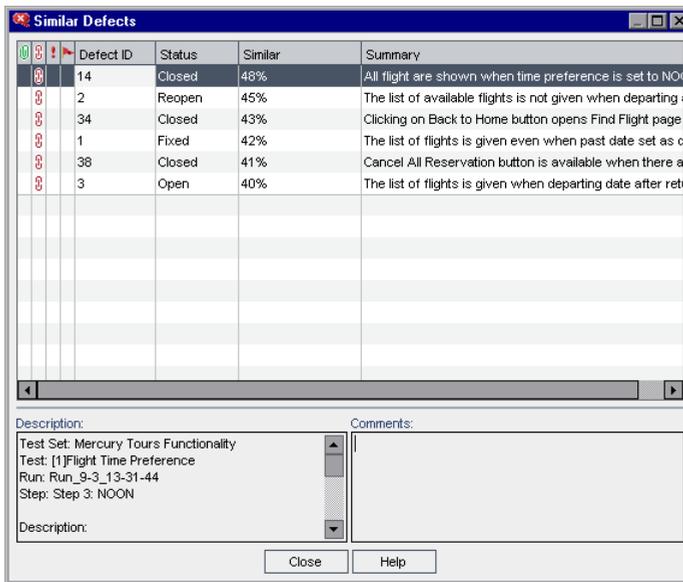
**Note:** If you cannot find **Defect ID 37**, click the **Set Filter/Sort** arrow and choose **Clear Filter/Sort** to clear the filter that is applied to the grid.

**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. Note that 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.

**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 107. Click the **Defect Details** button. The Defect Details dialog box opens.



**Defect Details**

Defect: 46    Unable to reserve a cruise from the Cruise page

Details    Page 2

\* Category: Defect    \* Status: New

\* Project: Mercury Tours Web Sit    Detected in Version: ...

\* Subject: Cruises    \* Detected on Date: 4/19/2007

\* Reproducible: Y    Regression: N

\* Detected By: alice\_gc    \* Severity: 2-Medium

Assigned To: ...    Priority: ...

Estimated Fix Time: ...    Planned Closing Version: ...

Actual Fix Time: ...    Closed in Version: ...

Description:    Comments:    Add Comment

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.

Execution Report    OK    Cancel

## 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.

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** in the sidebar. Note that the URL attachment is listed.

**7 View Linked Entities.**

Click **Linked Entities** in 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 115.

**8 View the History.**

Click **History** in 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.**

In the Defects Grid, select defect ID 23. Click the **Detected in 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**.

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**.

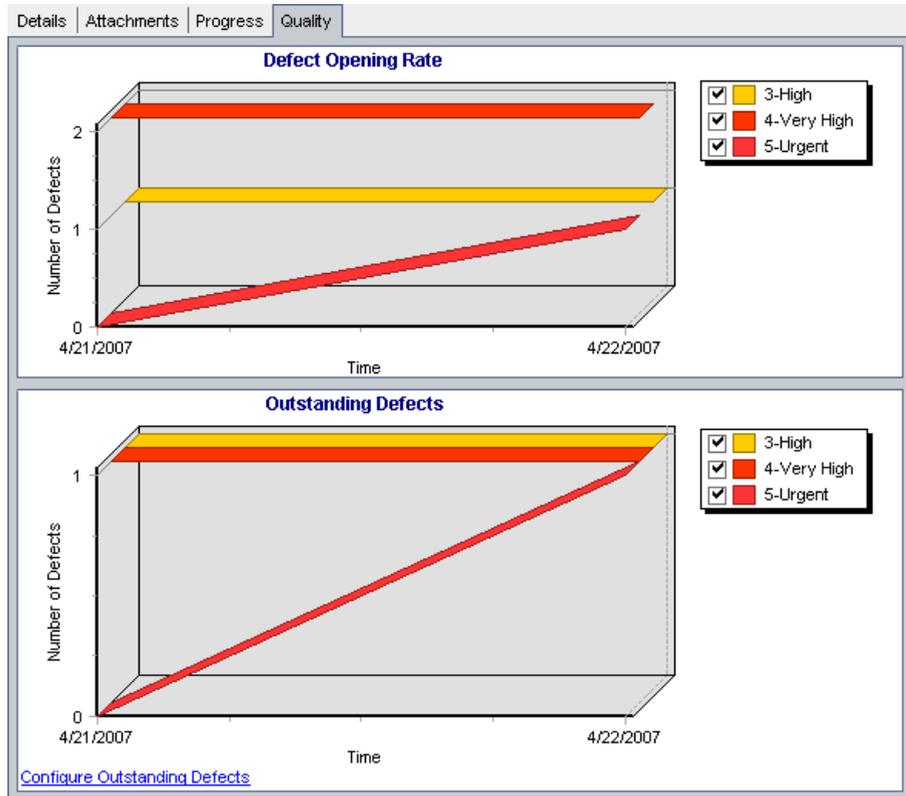
**11 Update defects 35 and 36.**

Repeat step 10 for defects 35 and 36.

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

Click the **Releases** button on the sidebar.

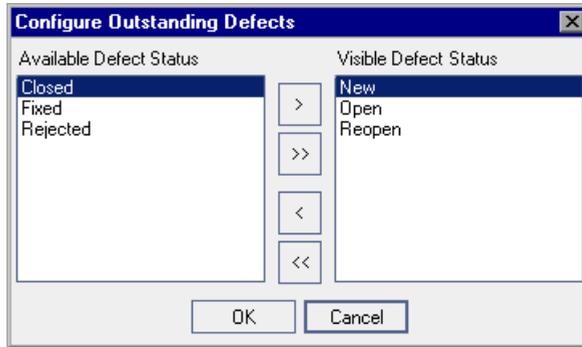
In the releases tree, expand the release folder **Service Packs** and the release **Service Pack 1**, and select the cycle **Cycle 1 - New Features**. Click the **Quality** tab.



In the **Defect Opening Rate** graph, you can see that four defects were detected in **Cycle 1 - New Features**. Two defects are assigned **4-Very High** severity value. One defect is assigned **3-High**, and one defect is assigned **5-Urgent**.

In the **Outstanding Defects** graph, you can see that you have three outstanding defects in **Cycle 1 - New Features**.

To view the status values selected for this graph, click the **Configure Outstanding Defects** link. The Configure Outstanding Defects dialog box opens.



By default, **New**, **Open**, and **Reopen** are selected. Click **OK** to close the Configure Outstanding Defects dialog box.

## 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.

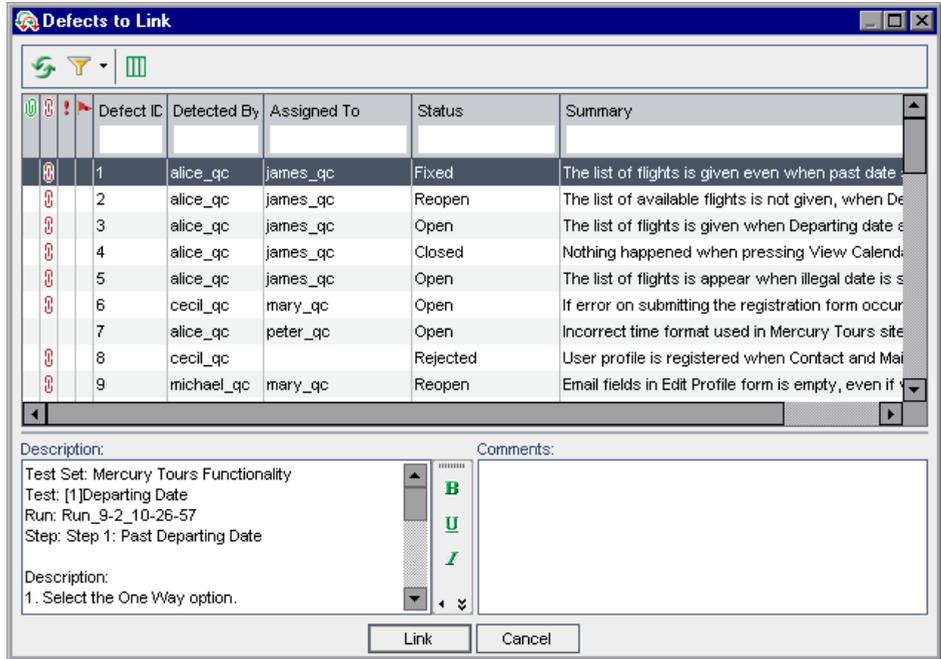
**2 Select the Cruise Booking test.**

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 107 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.



Select your defect in the Defects Grid, and click the **Defect Details** button. The Defect Details dialog box opens.



Click **Linked Entities** in the sidebar, and select the **Others** tab. You can see that 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:**

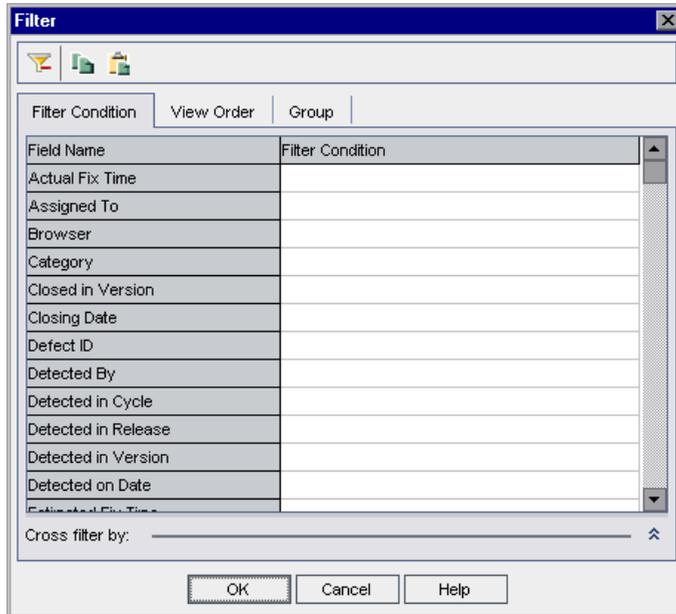
#### 1 Make sure that the Defects module is displayed.

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

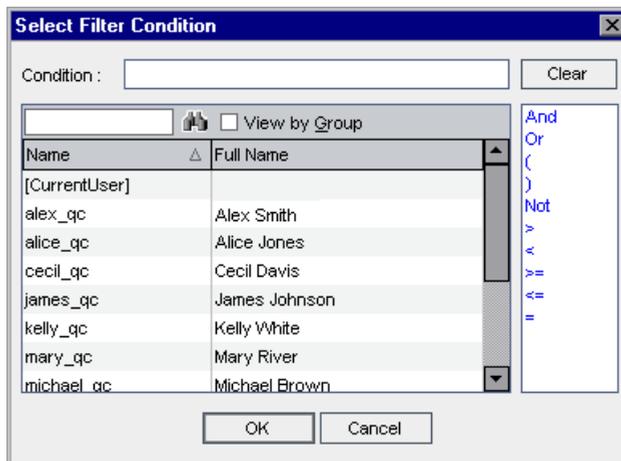
## 2 Define a filter to view defects you detected that are not closed.



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



Click the **Filter Condition** box that corresponds to **Detected By**. Click the browse button. The Select Filter Condition dialog box opens.



## Lesson 6 • Adding and Tracking Defects

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**.



Condition : Not Closed Clear

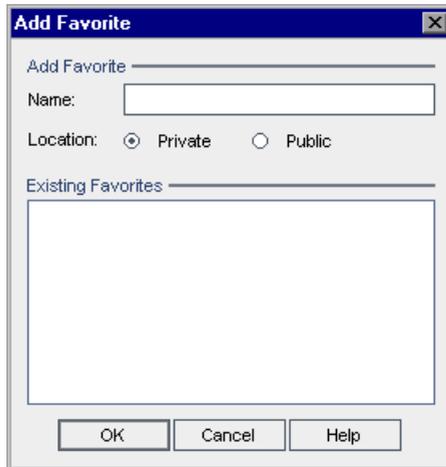
Click **OK** to close the Select Filter Condition dialog box.

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.



Add Favorite

Add Favorite

Name:

Location:  Private  Public

Existing Favorites

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. For the purpose of this exercise, select **Private**.

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



Now that you are familiar with how to add new defects, search for similar defects, update defects, link defects with tests, and create favorite views, you can proceed to Lesson 7, “Alerting on Changes.” In Lesson 7, you will learn how to track changes made to your requirements, tests, and defects.

## Lesson 6 • Adding and Tracking Defects

# 7

---

## Alerting on Changes

You can instruct Quality Center to create alerts automatically and send e-mail to notify those responsible when certain changes occur in your project that may impact the testing 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 e-mail reminder.

In this lesson, you will learn about:	On page:
Triggering an Alert	124
Creating Follow Up Alerts	126

## 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 61) and defects with other Quality Center entities (see “Linking Defects to Tests” on page 115). In addition, you can create traceability links between requirements. For more information on creating traceability links between requirements, see the *HP Quality Center User’s Guide*.

Quality Center can generate alerts for these changes:

- ▶ When a requirement changes (excluding change of status), Quality Center adds an alert flag to its associated tests and notifies their designers by e-mail.
- ▶ When the status of a defect changes to “Fixed”, Quality Center adds an alert flag to its associated test instances and notifies their responsible testers by e-mail.
- ▶ When a test runs successfully, Quality Center adds an alert flag to its associated defects and notifies the users assigned to them by e-mail.
- ▶ When a requirement changes, Quality Center adds an alert flag to its traced to requirements and child requirements, and notifies their authors by e-mail.

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.

Details		Requirements Traceability		Test Coverage	
Select		Status Filter: All			
Entity Name		Entity Status			
<a href="#">Cruise Booking</a>		Failed			
<a href="#">Cancel All Reservations</a>		No Run			
<a href="#">Airline Preference</a>		Failed			
<a href="#">Cruise Search</a>		Passed			

### 4 Change the priority of the Cruise Booking requirement.

Click the **Details** tab.

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

This change causes Quality Center to generate alerts for the tests associated with this requirement. Quality Center also notifies by e-mail 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.

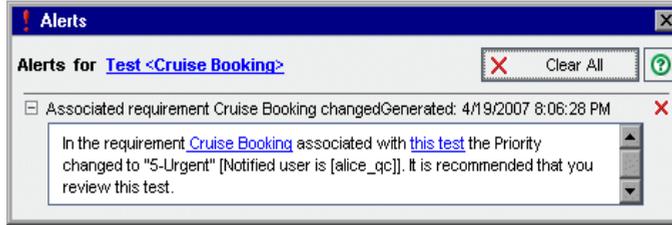
Click the **Refresh All** button.



Subject
Unattached
BPT Resources
Compiled Modules
Completed BPT Tutorial
Cruises
Cruise Cancellation
Cruise Reservation
Cruise Booking
Cruise Search
Flight Application (BPT Demo)
Flight Reservation
Itinerary
Mercury Tours Site

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 that is notified by e-mail 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 e-mail reminder and changes the flag icon from gray to red.

Note that 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.

The dialog box titled "Flag For Follow Up" has a blue title bar with a close button. It contains a "Follow up by:" field with a date picker set to "1/12/2006". Below it is a "Description:" text area with a rich text editor toolbar on the right containing Bold (B), Underline (U), and a list box. At the bottom are four buttons: "OK", "Cancel", "Clear Flag", and "Help".

Do 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.

Defects Edit View Favorites Analysis						
New Defect... X [Refresh] [Filter] [Grid] [Print] [Flag] [Calendar] [Help] Favorite: <None>						
	Defect ID	Status	Assigned To	Priority	Summary	
	1	Fixed	james_qc	3-High	The list of flights is given even when past date set as Departing date	
	2	Reopen	james_qc	5-Urgent	The list of available flights is not given, when Departing and Returning dates are the same	
	3	Open	james_qc	3-High	The list of flights is given when Departing date after Returning	
	4	Closed	james_qc	5-Urgent	Nothing happened when pressing View Calendar link	
	5	Open	james_qc	2-Medium	The list of flights is appear when illegal date is set as Departing or Returning date	
	6	Open	mary_qc	2-Medium	If error on submitting the registration form occurs all fields are cleared	
	7	Open	peter_qc	3-High	Incorrect time format used in Mercury Tours site	

#### 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.

The screenshot shows the 'Defect Details' dialog box. At the top, there is a toolbar with navigation icons and a 'Defect: 6' field. Below this is a text field containing the defect description: 'If error on submitting the registration form occurs all fields are cleared'. A prominent red banner with a downward-pointing triangle contains the text 'Follow Up by Thursday, January 12, 2006'. The main area is divided into a left sidebar with icons for 'Details', 'Attachments', 'Linked Entities', and 'History', and a main content area. The main content area has a 'Details' tab and 'Page 2' indicator. It contains several fields with red asterisks indicating required or important information: Category (Defect), Project (Mercury Tours (HT)), Subject (Registration), Reproducible (Y), Detected By (cecil\_qc), Assigned To (mary\_qc), Estimated Fix Time (15), Status (Open), Detected in Version (Version 1.0), Detected on Date (09/01/05), Regression (N), Severity (2-Medium), Priority (2-Medium), and Planned Closing Version (Version 1.01). Below these fields are two text areas: 'Description' (containing the same text as the top field) and 'Comments' (with an 'Add Comment' button). At the bottom, there is an 'Execution Report' link and 'OK' and 'Cancel' buttons.

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



Now that you are familiar with alerting on changes, you can proceed to Lesson 8, “Analyzing the Testing Process.” In Lesson 8, you will learn how to generate reports and graphs to help you analyze the testing process.

# 8

---

## Analyzing the Testing Process

Quality Center reports and graphs help you assess your testing process. You can generate reports and graphs at any time during the testing process from the Requirements, Test Plan, Test Lab, and Defects modules, using default or customized settings. When customizing a report or graph, you can apply filters and sort conditions, and display information according to your specifications. You can also save your settings as favorite views and reload them as needed.

---

**Note:** You can also use Live Analysis Graphs, the Document Generator and Excel Report Generator to further analyze your Quality Center data in Microsoft Word or Microsoft Excel. For more information on these analysis tools, refer to the *HP Quality Center User's Guide*.

---

In this lesson, you will learn about:	On page:
Generating Reports	130
Generating Graphs	137

## Generating Reports

You can generate a report from the Requirements, Test Plan, Test Lab, and Defects modules. Each of these modules contains various report options. After you generate a report, you can customize report properties to display information according to your specifications.

In this exercise, you will generate a standard requirements report, customize the report for a specific user name, and add it to your favorites list.

**To generate a report:**

### 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 13.

### 2 Display the Requirements module.

Click the **Requirements** button on the sidebar to display the requirements tree.

### 3 Choose a report.

Choose **Analysis > Reports > Standard Requirements Report**. The report opens, displaying default data.

The screenshot shows the Quality Center interface with the 'Standard Requirements Report' open. The left sidebar contains a tree view of reports, with 'Standard Requirements Report' selected. The main area displays a table of report properties for 'ReqID (0) - Requirements'.

ReqID (0) - Requirements	
Name:	Requirements
Priority:	Requirements
Requirement Type:	Folder
Creation Time:	2:34:58 PM
RBQM business impact:	RBQM custom business impact:
RBQM custom failure probability:	RBQM custom testing hours:
RBQM custom testing level:	RBQM Date of last Analysis:
RBQM effective business impact:	RBQM effective failure probability:
RBQM estimated RnD effort:	RBQM Exclude from analysis:
RBQM failure probability:	RBQM testing

#### 4 Display the customization options.



Click the **Configure Report and Sub-Reports** button. The Report Customization page opens with the default options selected.

Standard Requirements Report Close

Requirement Report

Page

Limit items per page to 5  All items in one page

Template

URL

Filter

Fields

All Fields (auto-layout)  Custom Fields (layout)

Keep Parent-Child Order (disables filter sort order)

Show Paragraph Number

Show Full Coverage (applied to test sub-report)

Rich Text

Grid View

Attachments

History

Apply

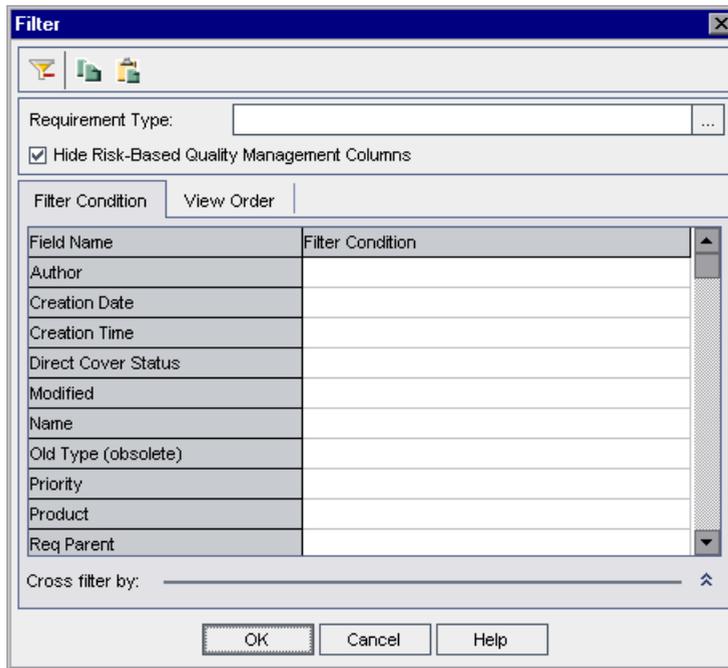
#### 5 Set the number of items per display page.

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

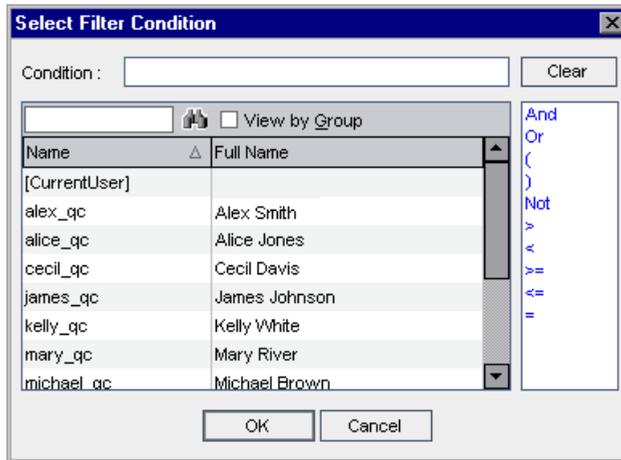
**6 Define a filter to view requirements created by a specific user name.**



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.



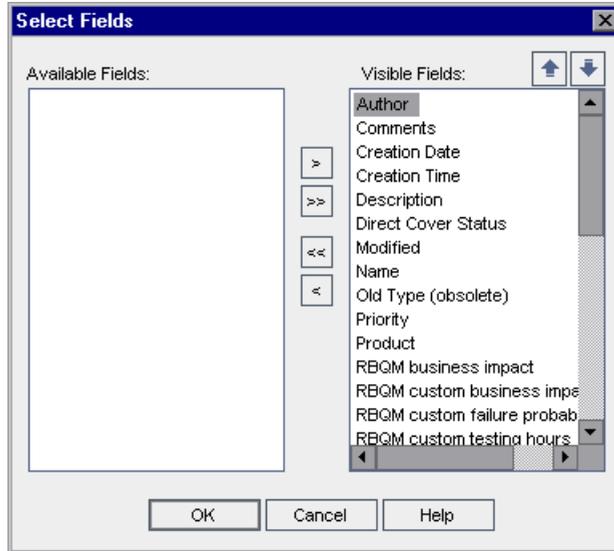
Under **Name**, select your Quality Center login user name (**alice\_qc**, **cecil\_qc**, or **michael\_qc**). Click **OK** to close the Select Filter Condition dialog box.

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

## 7 Specify the fields and the order in which they are displayed.



Under **Fields**, select **Custom Fields (layout)** and click the **Select Fields** button. The Select Fields dialog box opens.



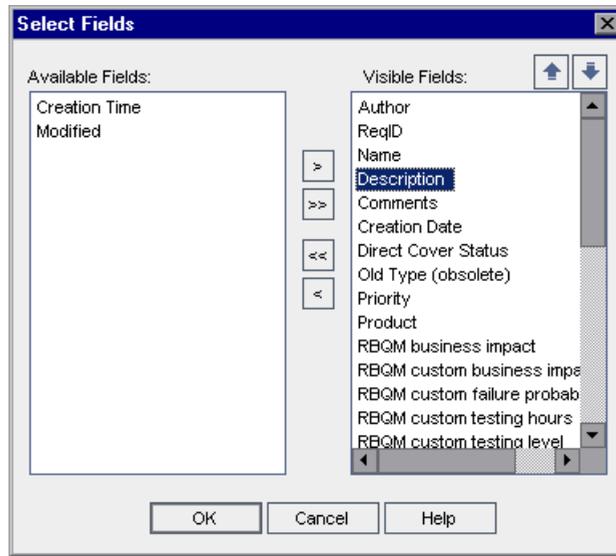
The **Available Fields** box lists fields that are not currently displayed. The **Visible Fields** box lists fields that are currently displayed.



In the **Visible Fields** box, select **Creation Time** and click the left arrow button to move the field to **Available Fields**. Move **Modified** to **Available Fields**.



To set the appearance order of the visible fields, select **ReqID** and use the up arrow button to move the field under **Author**. Move **Name** and **Description** so that they appear below **ReqID**.



**Tip:** You can also use a drag-and-drop operation to specify visible fields and the order in which they are displayed.

Click **OK** to close the dialog box and apply the new field order.

### 8 Clear the Attachments and History options.

Under **Fields**, clear the **Attachments** and **History** check boxes.

## 9 Generate a new report.

Click the **Apply** button. The customized Requirements Report is displayed.

The screenshot shows the 'Requirements Analysis' window with the 'Standard Requirements Report' selected. The left pane shows a tree view of reports, and the right pane displays the details for 'ReqID (108) - American Express'.

**Requirements Report**

Filter : Author[alice\_qc];

**ReqID (108) - American Express**

Author:	alice_qc (Alice Jones)	ReqID:	108
Name:	American Express	Creation Date:	02/13/2005
Direct Cover Status:	Not Covered	Product:	Mercury Tours
Priority:	4-Very High	RBQM business impact:	custom business impact:
RBQM business impact:	B	RBQM	RBQM

## 10 Add the report as a favorite view.



Click the **Add to Favorites** button. The Add Favorite dialog box opens.

In the **Name** box, type: Standard Requirements by Author. Click **OK**. The report is added to the Reports list in the left pane.

## 11 Close the report.

Click the **Close** button. The Requirements module is displayed.



**Tip:** You can create a quick report for specific nodes in a tree, or rows in a grid by selecting the requirements, tests, or defects, and choosing **Analysis > Report Selected**. You can select multiple nodes or rows by pressing the CTRL key.

## Generating Graphs

Quality Center graphs help you analyze the relationships between different types of data in a project. Each Quality Center module contains various graph options. After you generate a graph, you can customize graph properties to display information according to your specifications.

In this exercise, you will generate a defects graph to summarize the defects by status and priority level.

**To generate a graph:**

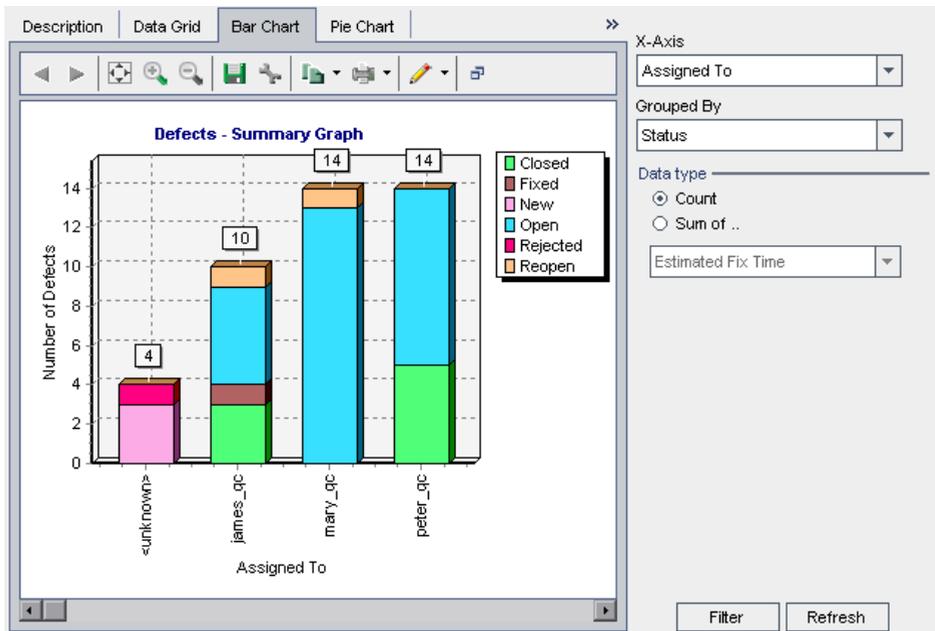
### **1 Display the Defects module.**

Click the **Defects** button on the sidebar. The Defects module displays the Defects Grid.

Click the **Set Filter/Sort** arrow and choose **Clear Filter/Sort** to clear the filter that is applied to the Defects Grid.

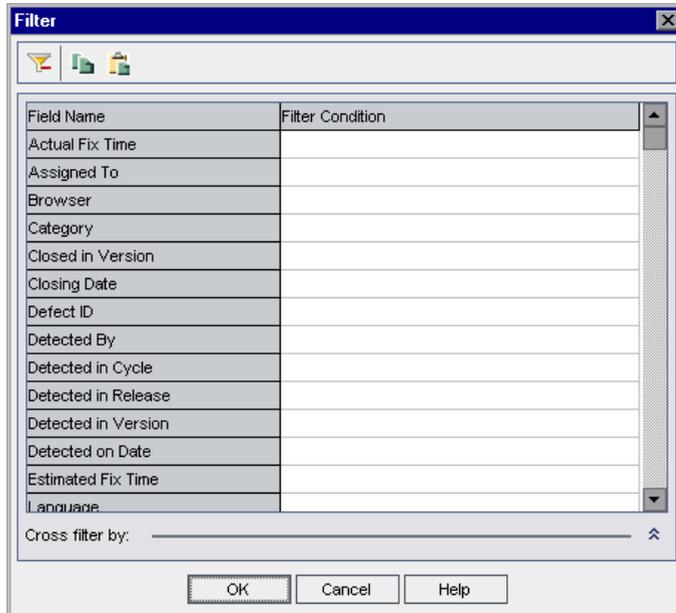
## 2 Choose a graph.

Choose **Analysis > Graphs > Summary - Group by 'Status'**. The Defects - Summary Graph opens. By default, the graph is grouped by **Status**.



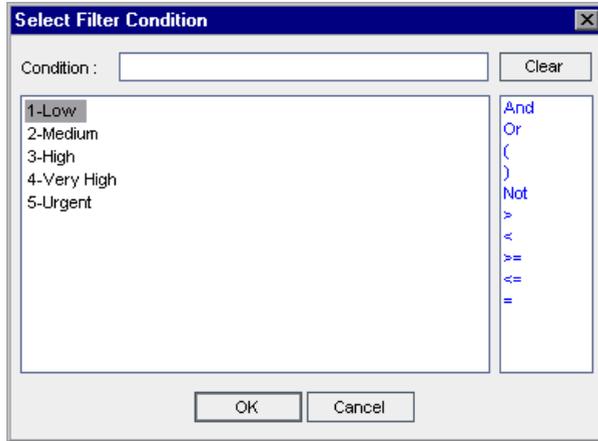
**3 Open the Filter dialog box.**

Click the **Filter** button. The Filter dialog box opens.



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

In the Filter dialog box, 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  $\geq$ .

In the left pane, select **3-High**.



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**.



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

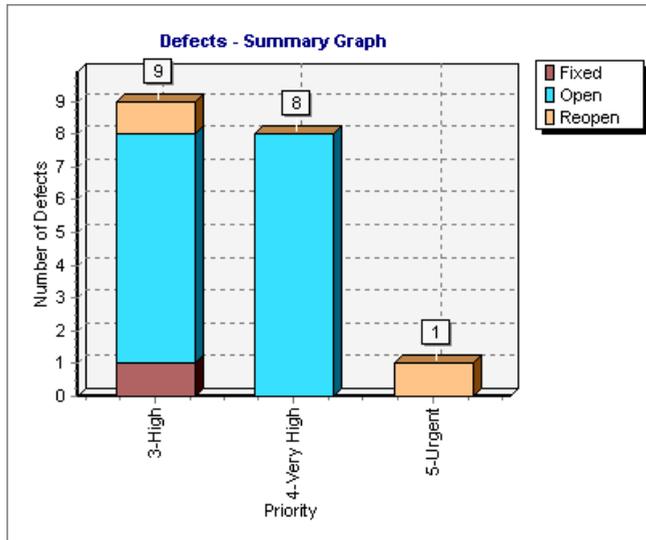
Click **OK** to close the Filter dialog box.

**6 Set the X-axis of the graph.**

From the **X-Axis** list on the right side of the window, select **Priority** to view the number of defects by priority.

**7 Refresh the graph.**

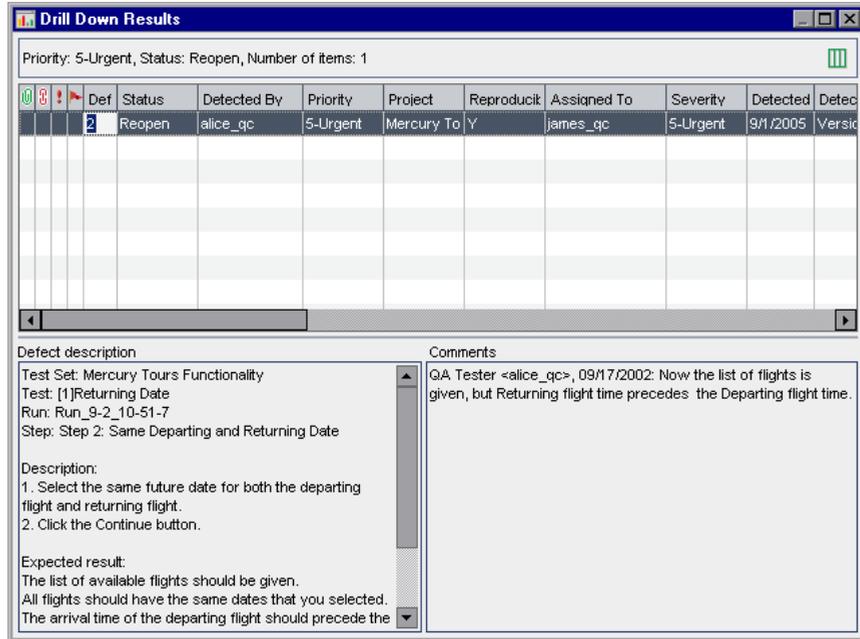
Click the **Refresh** button. A new graph is displayed.



In this exercise, nine defects are assigned **3-High**; eight defects are assigned **4-Very High**; and one defect is assigned **5-Urgent**.

### 8 Display additional defect details.

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



Close the Drill Down Results dialog box.

### 9 Display other graph views.

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

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

### 10 Close the graph.

Click the **Close** button. The Defects module is displayed.



Now that you are familiar with generating reports and graphs, you can proceed to Lesson 9, "Customizing Projects." In Lesson 9, you will learn how to customize a project by adding and defining a project user. You will also learn how to add a user-defined field and create a project list.

# 9

---

## Customizing Projects

In the previous lessons, you learned how to use Quality Center to help you manage all phases of the application testing process, including specifying releases and cycles, specifying testing 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 testing 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. Suppose new members are added to your testing team. You assign them to the projects that they will be testing, and specify the tasks that they can perform.

You can also customize your Quality Center project by modifying its system fields or by adding 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 several builds of an application, you can add a **Detected in Build** field to the Defects module. You can then create a selection list containing the values **Build1**, **Build2**, and **Build3**, and associate the list with the **Detected in Build** field.

In this lesson, you will learn about:	On page:
Starting Project Customization	144
Adding a New Project User	147
Assigning a User to a User Group	151
Defining a User-Defined Field	153
Creating a Project List	156

## 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 13.

**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**.

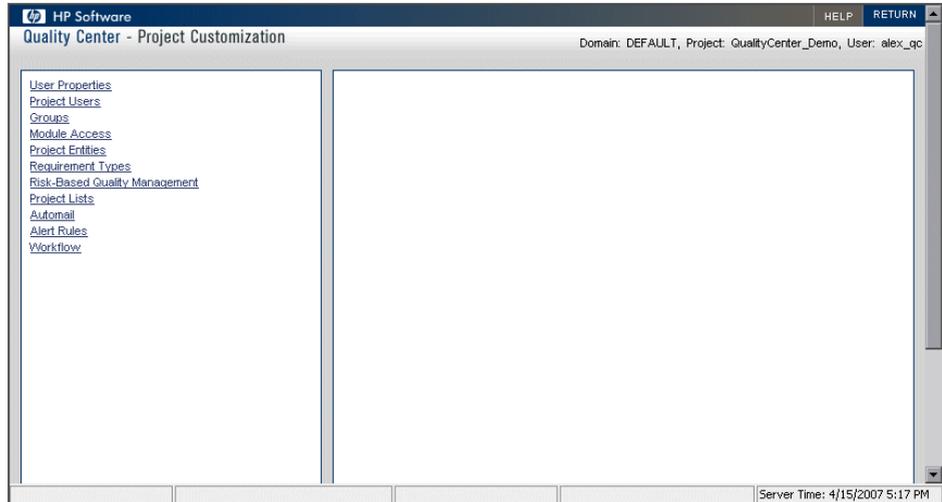
In the **Project** list, select **QualityCenter\_Demo**.

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-right corner of the Quality Center window. The Project Customization window opens.



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

Option	Description
<b>User Properties</b>	Enables you to change your user properties. For example, you can change your e-mail address. You can also change your password.
<b>Project Users</b>	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.
<b>Groups</b>	Enables you to assign privileges to user groups by specifying permission settings.
<b>Module Access</b>	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.

Option	Description
<b>Project Entities</b>	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 <b>Detected in Build</b> user-defined field to the New Defect dialog box. You can then associate it with a selection list containing the values for this field.
<b>Requirement Types</b>	Enables you to customize the definitions for requirement types.
<b>Risk-Based Quality Management</b>	Enables you to customize settings for risk-based quality management.
<b>Project Lists</b>	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 <b>Detected in Build</b> field, you can create a selection list containing the values <b>Build1</b> , <b>Build2</b> , and <b>Build3</b> .
<b>Automail</b>	Enables you to set up automatic mail notification rules to inform users via e-mail each time changes are made to specified defects.
<b>Alert Rules</b>	Enables you to activate alert rules for your project. This instructs Quality Center to create alerts and send e-mails when changes occur in the project.
<b>Workflow</b>	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.

In the procedures below, you will use these options: **Project Users**, **Project Entities**, and **Project Lists**. For more information on all of the above options, refer to the *HP Quality Center Administrator's Guide*.

## 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 144.

## 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.

### Project Users

Project Users

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

Add User
 Remove User

Properties of alex\_qc

Member Of

TDAdmin

Not Member Of

Defect Reporter  
 Developer  
 Project Manager  
 QA Manager  
 QATester  
 R&D Manager  
 Viewer

Personal Settings

Full Name:

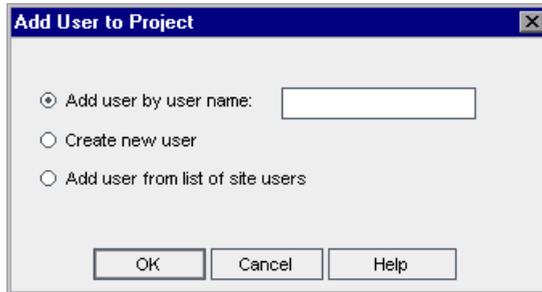
Phone:  E-mail:

Description:

Demo user

### 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. In this exercise, you will add an existing user by typing the user's name.

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.

### Project Users

---

**Project Users**

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

Add User
 Remove User

**Properties of tom\_qc**

Member Of

Viewer

Not Member Of

Defect Reporter  
 Developer  
 Project Manager  
 QA Manager  
 QATester  
 R&D Manager  
 TDAdmin

Personal Settings

Full Name:

Phone:  E-mail:

Description:

Demo user

Save Help

## 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.

The following table describes the predefined Quality Center user groups and their default permissions:

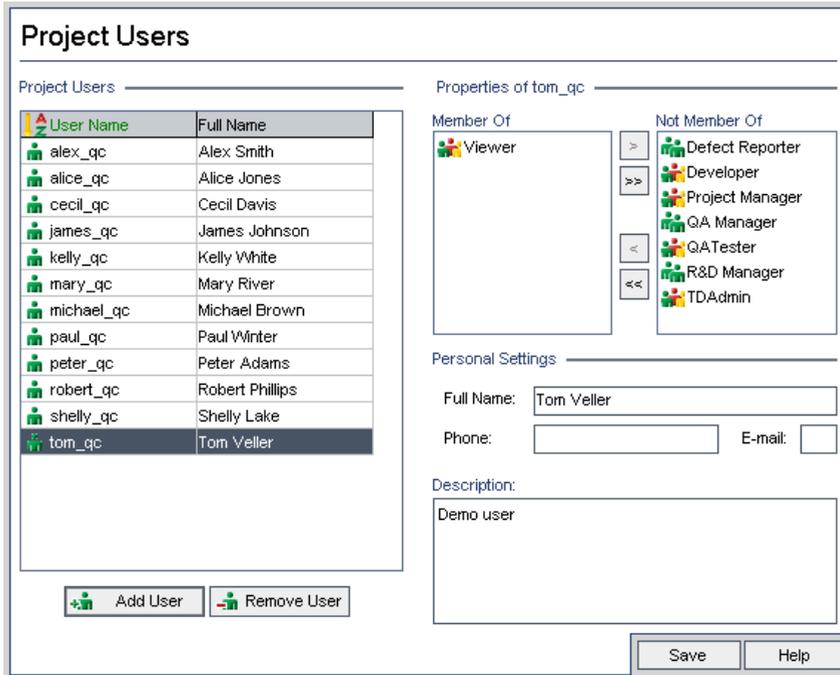
User Group	Permissions
<b>TDAdmin (Project Administrator)</b>	Group members have full privileges in a Quality Center project and in Project Customization.
<b>Project Manager</b>	Group members have full privileges in the following Quality Center modules: Releases, Requirements, Test Plan, Test Lab, and Defects. In Project Customization, the group has privileges to change user properties and password, customize project lists, and set alert rules.
<b>QATester</b>	Group members have full privileges in the following Quality Center modules: Releases, Requirements, Test Plan, and Test Lab. In the Defects module, the group can add and modify defects and defect links. In Project Customization, the group has privileges to change user properties and password, customize project lists, and set alert rules.
<b>Developer</b>	Group members are limited to modifying attachments or record details in the following Quality Center modules: Requirements, Test Plan, and Test Lab. In the Releases module, group members have full permissions. In the Defects module, the group can add and modify defects, and add defect links. In Project Customization, the group has privileges to change user properties and password.
<b>Viewer</b>	Group members have read-only privileges in a Quality Center project, and no privileges in Project Customization.

In this exercise, you will assign the new user 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.**

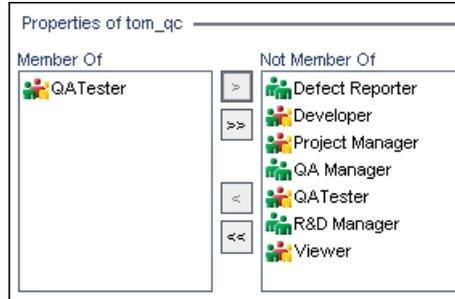


Under **Not Member Of**, select **QATester** and click the left arrow button to move it to **Member Of**.

#### 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 customize your Quality Center project to suit your testing needs. You can modify the behavior of Quality Center system fields or define user-defined fields that are unique to your project.

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 144.

## 2 Open the Project Entities page.

In the Project Customization window, click the **Project Entities** link. The Project Entities page opens.



The following project entities are available:

Entity	Description
<b>Cycle</b>	Cycle data in the Releases module.
<b>Defect</b>	Defect data in the Defects module.
<b>Release</b>	Release data in the Releases module.
<b>Release Folder</b>	Release folder data in the Releases module.
<b>Requirement</b>	Requirement data in the Requirements module.
<b>Run</b>	Test run data in the Test Lab module.
<b>Test</b>	Test data in the Test Plan module.
<b>Test Instance</b>	Test instance data in the Test Lab module.

Entity	Description
Test Set	Test set data in the Test Lab module.
Test Step	Design step data in the Test Plan module, and test step data in the Test Lab module.

### 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.

The screenshot shows the 'Project Entities' configuration window. On the left, a tree view shows the 'Defect' entity expanded to 'User Fields', where a new field 'BG\_USER\_01' has been added. On the right, the 'Field Settings' panel is visible, showing the following configuration:

- Field Name: BG\_USER\_01
- Field Label: BG\_USER\_01
- Field Type: String
- Field Length: 40
- Options: History, Masked, Required, Searchable (all unchecked)

Buttons for 'New Field', 'Remove Field', 'Save', and 'Help' are also visible.

**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. This new field name will be displayed in Quality Center.

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 144.

**2 Open the Project Lists page.**

In the Project Customization window, click the **Project Lists** link. The Project Lists page opens.

**Project Lists**

Lists: Administration Versions ▼

New List... Rename List... Delete List

List Items

- Administration Version 1.0
- Administration Version 1.01

New Item New Sub-Item Rename Item Delete Item

Save Help

**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** and **MSDE** to the DB list.



Click **Save** to save the changes to the Project Lists page. Click **OK**.

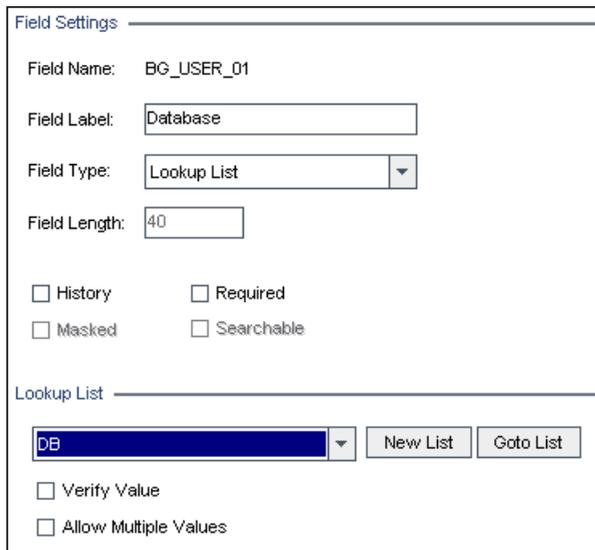
## 5 Assign the list to the Database field.

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.



Field Settings

Field Name: BG\_USER\_01

Field Label: Database

Field Type: Lookup List

Field Length: 40

History       Required

Masked       Searchable

Lookup List

DB      New List      Goto List

Verify Value

Allow Multiple Values

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*

**New Defect**

Clear Attach: [Icons]

\* Summary: [Text Box]

Details

Assigned To: [Dropdown] Browser: [Dropdown]

Category: [Dropdown] Detected By: alex\_gc [Dropdown]

Detected in Version: [Dropdown] Detected on Date: 4/23/2007 [Dropdown]

Estimated Fix Time: [Text Box] Language: English [Dropdown]

Database: [Dropdown] Planned Closing Version: [Dropdown]

Priority: [Dropdown] Project: Mercury Tours Web [Dropdown]

Regression: N [Dropdown] Reproducible: Y [Text Box]

Severity: [Dropdown] Status: New [Dropdown]

Subject: [Dropdown] Detected in Cycle: [Dropdown]

Description: [Text Area]

Submit Close

The **Database** field is displayed in the New Defect dialog box. Click the down arrow and see the database types you defined. Click **Close**.



Now that you are familiar with how to customize a project, you can proceed to Lesson 10, “Where Do You Go from Here?” In Lesson 10, you will apply the Quality Center concepts and skills you learned to your own application.



# 10

---

## Where Do You Go from Here?

Now that you have completed the tutorial, you are ready to apply the Quality Center concepts and skills you learned to your own application. You also need to know where to access additional information.

In this lesson, you will learn about:	On page:
Getting Started	161
Documentation Library	164
Additional Online Resources	166

### Getting Started

Test management with Quality Center includes five phases: specifying releases, specifying requirements, planning tests, running tests, and tracking defects. Throughout each phase, you can analyze data by generating detailed reports and graphs.

**To get started:**

**1 Specify your release plan and define cycles for your releases.**

To specify your release plan, consider these steps:

- Decide how to break up your application releases.
- For each release, determine how to break it down into cycles.
- Analyze the progress and quality of your releases and cycles.

## **2 Analyze your application and determine your requirements.**

To specify your requirements, consider these steps:

- ▶ Examine the application documentation to determine your testing scope—test goals, objectives, and strategies.
- ▶ 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 testing needs at all stages of the testing process.
- ▶ For each requirement topic 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.
- ▶ Generate reports and graphs to assist you in analyzing your requirements. Review your requirements to ensure they meet your testing scope.

## **3 Create a test plan, based on your requirements.**

To create a test plan, consider these steps:

- ▶ Examine your application, system environment, and testing resources to determine your testing goals.
- ▶ 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.
- ▶ Determine the types of tests you need for each module. Add a basic definition of each test to the test plan tree.
- ▶ Link each test to requirements.
- ▶ 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.
- ▶ 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.
- ▶ Generate reports and graphs to assist in analyzing test planning data. Review your tests to determine their suitability to your testing goals.

#### **4 Create test sets and perform test runs.**

To create test sets and run tests, consider these steps:

- ▶ 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.
- ▶ Schedule test runs and assign tasks to application testers.
- ▶ Run the tests in your test sets automatically or manually.
- ▶ 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.

#### **5 Submit defects detected in your application and track the progress of defect fixes.**

To submit and track defects, consider these steps:

- ▶ Submit new defects detected in your application.
- ▶ Add a link between defects and the following entities: requirements, tests, test sets, test instances, runs, run steps, and other defects.
- ▶ Review new defects and determine which ones should be fixed.
- ▶ Correct the defects that you decide to fix.
- ▶ Test a new build of your application. Repeat this process until defects are fixed.
- ▶ Generate reports and graphs to assist in analyzing the progress of defect fixes and to help determine when to release the application.

## Documentation Library

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

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

### Documentation Library Guides

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

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

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

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

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

### Quality Center Guides:

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

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

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

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

### **Business Process Testing Guides:**

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

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

### **API References:**

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

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

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

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

## Additional Online Resources

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

**Knowledge Base** uses your default Web browser to open the Mercury Customer Support Web Site directly to the Knowledge Base landing page.

**Customer Support Web Site** uses your default Web browser to open the Mercury Customer Support Web site. This site enables you to browse the Mercury Support Knowledge Base and add your own articles. You can also post to and search user discussion forums, submit support requests, download patches and updated documentation, and more. The URL for this Web site is <http://support.mercury.com>.

**HP Software Web site** uses your default Web browser to access 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. The URL for this Web site is <http://www.hp.com/managementsoftware>.

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