HP Quality Center

Software Version: 9.20

Tutorial
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# Table of Contents

Welcome to This Tutorial ................................................................. 7  
Before You Begin ............................................................................. 7  
How This Tutorial is Organized ...................................................... 8  
Typographical Conventions ............................................................... 10  

**Lesson 1: Introducing Quality Center** ......................................... 11  
The Quality Center Testing Process .................................................. 12  
Starting Quality Center .................................................................. 13  
The Quality Center Window ............................................................ 16  
The Mercury Tours Sample Web Site ................................................. 19  

**Lesson 2: Specifying Releases and Cycles** .................................. 23  
Defining Releases and Cycles ............................................................ 24  
Viewing Releases and Cycles ............................................................ 26  

**Lesson 3: Specifying Requirements** .......................................... 31  
Defining Requirements ................................................................... 32  
Viewing Requirements .................................................................... 36  
Modifying Requirements .................................................................. 39  
Converting Requirements ................................................................ 41  

**Lesson 4: Planning Tests** .............................................................. 47  
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
<table>
<thead>
<tr>
<th>Lesson 5: Running Tests</th>
<th>73</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defining Test Sets</td>
<td>74</td>
</tr>
<tr>
<td>Adding Tests to a Test Set</td>
<td>80</td>
</tr>
<tr>
<td>Scheduling Test Runs</td>
<td>82</td>
</tr>
<tr>
<td>Running Tests Manually</td>
<td>89</td>
</tr>
<tr>
<td>Viewing and Analyzing Test Results</td>
<td>96</td>
</tr>
<tr>
<td>Running Tests Automatically</td>
<td>101</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lesson 6: Adding and Tracking Defects</th>
<th>105</th>
</tr>
</thead>
<tbody>
<tr>
<td>How to Track Defects</td>
<td>106</td>
</tr>
<tr>
<td>Adding New Defects</td>
<td>107</td>
</tr>
<tr>
<td>Matching Defects</td>
<td>109</td>
</tr>
<tr>
<td>Updating Defects</td>
<td>111</td>
</tr>
<tr>
<td>Linking Defects to Tests</td>
<td>115</td>
</tr>
<tr>
<td>Creating Favorite Views</td>
<td>118</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lesson 7: Alerting on Changes</th>
<th>123</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triggering an Alert</td>
<td>124</td>
</tr>
<tr>
<td>Creating Follow Up Alerts</td>
<td>126</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lesson 8: Analyzing the Testing Process</th>
<th>129</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generating Reports</td>
<td>130</td>
</tr>
<tr>
<td>Generating Graphs</td>
<td>137</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lesson 9: Customizing Projects</th>
<th>143</th>
</tr>
</thead>
<tbody>
<tr>
<td>Starting Project Customization</td>
<td>144</td>
</tr>
<tr>
<td>Adding a New Project User</td>
<td>147</td>
</tr>
<tr>
<td>Assigning a User to a User Group</td>
<td>151</td>
</tr>
<tr>
<td>Defining a User-Defined Field</td>
<td>153</td>
</tr>
<tr>
<td>Creating a Project List</td>
<td>156</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lesson 10: Where Do You Go from Here?</th>
<th>161</th>
</tr>
</thead>
<tbody>
<tr>
<td>Getting Started</td>
<td>161</td>
</tr>
<tr>
<td>Documentation Library</td>
<td>164</td>
</tr>
<tr>
<td>Additional Online Resources</td>
<td>166</td>
</tr>
</tbody>
</table>
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.

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**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.

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

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.
Welcome to This Guide

**Typographical Conventions**

This guide uses the following typographical conventions:

| UI Elements and Function Names | This style indicates the names of interface elements on which you perform actions, file names or paths, and other items that require emphasis. For example, “Click the **Save** button.” It also indicates method or function names. For example, "The **wait_window** statement has the following parameters:" |
| Arguments | This style indicates method, property, or function arguments and book titles. For example, “Refer to the **HP User’s Guide**.” |
| `<Replace Value>` | Angle brackets enclose a part of a file path or URL address that should be replaced with an actual value. For example, `<MyProduct installation folder>in`. |
| **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. |
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.

<table>
<thead>
<tr>
<th>In this lesson, you will learn about:</th>
<th>On page:</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Quality Center Testing Process</td>
<td>12</td>
</tr>
<tr>
<td>Starting Quality Center</td>
<td>13</td>
</tr>
<tr>
<td>The Quality Center Window</td>
<td>16</td>
</tr>
<tr>
<td>The Mercury Tours Sample Web Site</td>
<td>19</td>
</tr>
</tbody>
</table>
Lesson 1 • Introducing Quality Center

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.
Lesson 1 • Introducing Quality Center

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.
Lesson 1 • Introducing Quality Center

**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.

![Quality Center Login Window](image)

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.
Lesson 1 • Introducing Quality Center

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**.
Lesson 1 • Introducing Quality Center

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.
Lesson 1 • Introducing Quality Center

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:

<table>
<thead>
<tr>
<th>Button</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BACK</td>
<td>Navigates back to your previous location in Quality Center.</td>
</tr>
<tr>
<td>FORWARD</td>
<td>Navigates forward to your next location in Quality Center.</td>
</tr>
<tr>
<td>TOOLS</td>
<td>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 <strong>Tools</strong> button, refer to the <em>HP Quality Center User’s Guide</em>.</td>
</tr>
<tr>
<td>HELP</td>
<td>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.</td>
</tr>
<tr>
<td>LOGOUT</td>
<td>Enables you to log you out of your current project to the HP Quality Center Login window.</td>
</tr>
</tbody>
</table>

➤ **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.

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

Click **Submit**. Mercury Tours confirms your registration.
3 Log on to Mercury Tours.

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

Type your registered user name and password. Click Submit.
Lesson 1 • Introducing Quality Center

The Flight Finder page opens.

4 Reserve a flight.

Follow the on-screen instructions to reserve a flight.

5 End your Mercury Tours session.

Click Sign-off to log out.

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.
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.

<table>
<thead>
<tr>
<th>In this lesson, you will learn about:</th>
<th>On page:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defining Releases and Cycles</td>
<td>24</td>
</tr>
<tr>
<td>Viewing Releases and Cycles</td>
<td>26</td>
</tr>
</tbody>
</table>
Lesson 2 • Specifying Releases and Cycles

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.

   ![New Release Folder Dialog Box]

   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.

![New Release dialog box](image1.png)

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.

![New Cycle dialog box](image2.png)

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.
Lesson 2 • Specifying Releases and Cycles

6 Add a second cycle to the release.

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


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.

<table>
<thead>
<tr>
<th>Details</th>
<th>Attachments</th>
<th>Progress</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total days in release:</td>
<td>62</td>
<td>Days</td>
<td></td>
</tr>
<tr>
<td>Remaining days in release:</td>
<td>61</td>
<td>Elapsed</td>
<td>Remaining</td>
</tr>
<tr>
<td>Total test instances for release:</td>
<td>0</td>
<td>Test Instance Runs</td>
<td>N/A</td>
</tr>
<tr>
<td>Remaining test instances to run:</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Required execution rate (test instances/day):</td>
<td>0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actual execution rate (test instances/day):</td>
<td>0.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.
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.
Lesson 2 • Specifying Releases and Cycles
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.

<table>
<thead>
<tr>
<th>In this lesson, you will learn about:</th>
<th>On page:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defining Requirements</td>
<td>32</td>
</tr>
<tr>
<td>Viewing Requirements</td>
<td>36</td>
</tr>
<tr>
<td>Modifying Requirements</td>
<td>39</td>
</tr>
<tr>
<td>Converting Requirements</td>
<td>41</td>
</tr>
</tbody>
</table>
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.

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.
Lesson 3 • Specifying Requirements

Click OK. The New Requirement dialog box opens.

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.
Lesson 3 • Specifying Requirements

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**.

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.
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 Filter Condition dialog box](image)

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.

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Edit</th>
<th>View</th>
<th>Annotate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Author</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>michael_pc</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>michael_pc</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>michael_pc</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Filter: Creation Date (1/5/2006)**

<table>
<thead>
<tr>
<th>Author</th>
<th>Creation Date</th>
<th>Creation Time</th>
<th>Direct Cover</th>
<th>Modified</th>
<th>Name</th>
<th>Priority</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1/5/2006</td>
<td>8:40:27 AM</td>
<td>No Run</td>
<td>1/5/2006</td>
<td>Cruise Booking</td>
<td>4-Very High</td>
<td>Mercury Tours</td>
</tr>
<tr>
<td></td>
<td>1/5/2006</td>
<td>8:40:27 AM</td>
<td>No Run</td>
<td>1/5/2006</td>
<td>Cruise Booking</td>
<td>4-Very High</td>
<td>Mercury Tours</td>
</tr>
<tr>
<td></td>
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<td>1/5/2006</td>
<td>Cruise Booking</td>
<td>4-Very High</td>
<td>Mercury Tours</td>
</tr>
</tbody>
</table>
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.
Lesson 3 • Specifying Requirements

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.
Lesson 3 • Specifying Requirements

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.
Lesson 3 • Specifying Requirements

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.

![Select Destination Subject Dialog](image)

Click **OK** to close the Select Destination Subject dialog box. The **Destination Subject Path** box now indicates this path:

```
Destination Subject Path: ...
```

8 Finalize the conversion process.

Click **Finish**.

Click **OK**.
Lesson 3 • Specifying Requirements

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.
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).

<table>
<thead>
<tr>
<th>In this lesson, you will learn about:</th>
<th>On page:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing a Test Plan Tree</td>
<td>48</td>
</tr>
<tr>
<td>Designing Test Steps</td>
<td>51</td>
</tr>
<tr>
<td>Copying Test Steps</td>
<td>55</td>
</tr>
<tr>
<td>Calling Tests with Parameters</td>
<td>57</td>
</tr>
<tr>
<td>Creating and Viewing Requirements Coverage</td>
<td>61</td>
</tr>
<tr>
<td>Generating Automated Test Scripts</td>
<td>70</td>
</tr>
</tbody>
</table>
Lesson 4 • Planning Tests

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.

![New Folder dialog box](image)

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.

![Create New Test dialog box](image)

In the Test Type box, select QUICKTEST_TEST to create a QuickTest Professional test, or select WR-AUTOMATED to create a WinRunner test.
Lesson 4 • Planning Tests

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.
Lesson 4 • Planning Tests

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.

   ![Design Step Editor: Test (Cruise Booking)]

   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.
Lesson 4 • Planning Tests

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.

<table>
<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>

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.
Lesson 4 • Planning Tests

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.

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.
Lesson 4 • Planning Tests

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.

   ![Select a Test dialog box]

   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.
Lesson 4 • Planning Tests

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.

<table>
<thead>
<tr>
<th>Step Name</th>
<th>Description</th>
<th>Expected Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Connect And Sign-On</td>
<td>Call &lt;Connect And Sign-On&gt; with the following parameters: mercury:龅</td>
<td></td>
</tr>
<tr>
<td></td>
<td><a href="http://dahlia/intro/index.html?user=CallConnect&amp;password=michael_g1">http://dahlia/intro/index.html?user=CallConnect&amp;password=michael_g1</a></td>
<td></td>
</tr>
<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>
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.
Lesson 4 • Planning Tests

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.
Lesson 4 • Planning Tests

**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.
Lesson 4 • Planning Tests

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.

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.
Lesson 4 • Planning Tests

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.

![Coverage Analysis dialog box]

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.

![Coverage Analysis dialog box with child requirements]

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.
Lesson 4 • Planning Tests

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.

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

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.
Lesson 4 • Planning Tests

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.
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:

<table>
<thead>
<tr>
<th>Topic</th>
<th>On page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defining Test Sets</td>
<td>74</td>
</tr>
<tr>
<td>Adding Tests to a Test Set</td>
<td>80</td>
</tr>
<tr>
<td>Scheduling Test Runs</td>
<td>82</td>
</tr>
<tr>
<td>Running Tests Manually</td>
<td>89</td>
</tr>
<tr>
<td>Viewing and Analyzing Test Results</td>
<td>96</td>
</tr>
<tr>
<td>Running Tests Automatically</td>
<td>101</td>
</tr>
</tbody>
</table>
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:

<table>
<thead>
<tr>
<th>Test Set</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanity</td>
<td>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.</td>
</tr>
<tr>
<td>Regression</td>
<td>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.</td>
</tr>
<tr>
<td>Advanced</td>
<td>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.</td>
</tr>
<tr>
<td>Function</td>
<td>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.</td>
</tr>
</tbody>
</table>
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.

   ![New Folder dialog box](image)

   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.

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.
Lesson 5 • Running Tests

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

Click the On Failure link.

---

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.
Lesson 5 • Running Tests

9 Instruct Quality Center to send e-mail to specified users if certain events occur.

Click the Notifications link.

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.
Lesson 5 • Running Tests

**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.
Lesson 5 • Running Tests

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.
Lesson 5 • Running Tests

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.
Lesson 5 • Running Tests

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

![New Test Set dialog box]

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**.

![Diagram of test flow](image)

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.

![Run Schedule dialog box](image)
Lesson 5 • Running Tests

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.
Lesson 5 • Running Tests

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.
Lesson 5 • Running Tests

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.
Lesson 5 • Running Tests

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.
Lesson 5 • Running Tests

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.
Lesson 5 • Running Tests

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.”

<table>
<thead>
<tr>
<th>Plan Test Name</th>
<th>Plan Type</th>
<th>Status</th>
<th>Iteration</th>
<th>Plot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cruise Booking</td>
<td>MANUAL</td>
<td>Failed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cruise Search</td>
<td>MANUAL</td>
<td>Passed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cancel All Reservations</td>
<td>VAR-_AUTOMATED</td>
<td>No Run</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Airline Preference</td>
<td>VAR-_AUTOMATED</td>
<td>No Run</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number Of Passengers</td>
<td>QUICKTEST</td>
<td>No Run</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Step Name</th>
<th>Status</th>
<th>Step Date</th>
<th>Steps Details</th>
</tr>
</thead>
</table>
| Connect to Mercury Tours Site                  | Passed | 1/5/2006  | Description: Open your web browser and type the Mercury Tours URL.  
| Display the Cruise Special page                | Passed | 1/5/2006  | Actual: The Mercury Tours site opens.  
| 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.
Lesson 5 • Running Tests

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

Click the Execution Grid tab.

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

3 Select the Cruise Booking test from the Execution Grid.

In the Execution Grid tab, select Cruise Booking.

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

Click the Test Instance Properties button. The Test Instance Properties dialog box opens and displays the All Runs view.
5 View other test run information in the Test Instance Properties dialog box.

► 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 the two children have failed.

Open the Releases module.

Click the **Releases** button on the sidebar.
Lesson 5 • Running Tests

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.
Lesson 5 • Running Tests

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.
Lesson 5 • Running Tests

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.
Lesson 5 • Running Tests

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

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

8 Close your selected testing tool.

In QuickTest Professional or WinRunner, choose File > Exit.

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.
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.

<table>
<thead>
<tr>
<th>In this lesson, you will learn about:</th>
<th>On page:</th>
</tr>
</thead>
<tbody>
<tr>
<td>How to Track Defects</td>
<td>106</td>
</tr>
<tr>
<td>Adding New Defects</td>
<td>107</td>
</tr>
<tr>
<td>Matching Defects</td>
<td>109</td>
</tr>
<tr>
<td>Updating Defects</td>
<td>111</td>
</tr>
<tr>
<td>Linking Defects to Tests</td>
<td>115</td>
</tr>
<tr>
<td>Creating Favorite Views</td>
<td>118</td>
</tr>
</tbody>
</table>
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.
Lesson 6 • Adding and Tracking Defects

3 Open the New Defect dialog box.

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

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.
Lesson 6 • Adding and Tracking Defects

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.

   ![Similar Defects](image)

   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.
Lesson 6 • Adding and Tracking Defects

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.

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.
Lesson 6 • Adding and Tracking Defects

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.
Lesson 6 • Adding and Tracking Defects

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:
Lesson 6 • Adding and Tracking Defects

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.

![Defects to Link](image)

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.
Lesson 6 • Adding and Tracking Defects

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.

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**.

![Select Filter Condition dialog box](image)

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 dialog box](image)

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.
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.

<table>
<thead>
<tr>
<th>In this lesson, you will learn about:</th>
<th>On page:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triggering an Alert</td>
<td>124</td>
</tr>
<tr>
<td>Creating Follow Up Alerts</td>
<td>126</td>
</tr>
</tbody>
</table>
Lesson 7 • Alerting on Changes

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.

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.

The Cruise Booking test has an alert flag !, indicating that a change was made to an associated requirement.
Lesson 7 • Alerting on Changes

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.

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.
Lesson 7 • Alerting on Changes

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.

![Defect Details Dialog Box](image)

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.
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*.

<table>
<thead>
<tr>
<th>In this lesson, you will learn about:</th>
<th>On page:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generating Reports</td>
<td>130</td>
</tr>
<tr>
<td>Generating Graphs</td>
<td>137</td>
</tr>
</tbody>
</table>
Lesson 8 • Analyzing the Testing Process

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.**
   
Lesson 8 • Analyzing the Testing Process

4 Display the customization options.

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

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.
Lesson 8 • Analyzing the Testing Process

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.
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.
Lesson 8 • Analyzing the Testing Process

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.

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.
Lesson 8 • Analyzing the Testing Process

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.
Lesson 8 • Analyzing the Testing Process

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 `>=`. 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.
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.

<table>
<thead>
<tr>
<th>In this lesson, you will learn about:</th>
<th>On page:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Starting Project Customization</td>
<td>144</td>
</tr>
<tr>
<td>Adding a New Project User</td>
<td>147</td>
</tr>
<tr>
<td>Assigning a User to a User Group</td>
<td>151</td>
</tr>
<tr>
<td>Defining a User-Defined Field</td>
<td>153</td>
</tr>
<tr>
<td>Creating a Project List</td>
<td>156</td>
</tr>
</tbody>
</table>
Lesson 9 • Customizing Projects

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:

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

<table>
<thead>
<tr>
<th>User Name</th>
<th>Full Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>alex_ac</td>
<td>Alex Smith</td>
</tr>
<tr>
<td>alice_ac</td>
<td>Alice Jones</td>
</tr>
<tr>
<td>Cecil_ac</td>
<td>Cecil Davis</td>
</tr>
<tr>
<td>james_ac</td>
<td>James Johnson</td>
</tr>
<tr>
<td>kelly_ac</td>
<td>Kelly White</td>
</tr>
<tr>
<td>mary_ac</td>
<td>Mary River</td>
</tr>
<tr>
<td>michael_ac</td>
<td>Michael Brown</td>
</tr>
<tr>
<td>paul_ac</td>
<td>Paul Winter</td>
</tr>
<tr>
<td>peter_ac</td>
<td>Peter Adams</td>
</tr>
<tr>
<td>robert_ac</td>
<td>Robert Phillips</td>
</tr>
<tr>
<td>shelly_ac</td>
<td>Shelly Lake</td>
</tr>
<tr>
<td>tom_ac</td>
<td>Tom Veller</td>
</tr>
</tbody>
</table>

**Personal Settings**

- **Full Name:** Tom Veller
- **Phone:**
- **E-mail:**
- **Description:** Demo user
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:

<table>
<thead>
<tr>
<th>User Group</th>
<th>Permissions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TDAdmin (Project Administrator)</strong></td>
<td>Group members have full privileges in a Quality Center project and in Project Customization.</td>
</tr>
<tr>
<td><strong>Project Manager</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>QATester</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Developer</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Viewer</strong></td>
<td>Group members have read-only privileges in a Quality Center project, and no privileges in Project Customization.</td>
</tr>
</tbody>
</table>

In this exercise, you will assign the new user to the **QATester** user group.
Lesson 9 • Customizing Projects

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:

<table>
<thead>
<tr>
<th>Entity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycle</td>
<td>Cycle data in the Releases module.</td>
</tr>
<tr>
<td>Defect</td>
<td>Defect data in the Defects module.</td>
</tr>
<tr>
<td>Release</td>
<td>Release data in the Releases module.</td>
</tr>
<tr>
<td>Release Folder</td>
<td>Release folder data in the Releases module.</td>
</tr>
<tr>
<td>Requirement</td>
<td>Requirement data in the Requirements module.</td>
</tr>
<tr>
<td>Run</td>
<td>Test run data in the Test Lab module.</td>
</tr>
<tr>
<td>Test</td>
<td>Test data in the Test Plan module.</td>
</tr>
<tr>
<td>Test Instance</td>
<td>Test instance data in the Test Lab module.</td>
</tr>
</tbody>
</table>
3 Add a new user-defined field to the Defect entity.

Under Project Entities, expand Defect.

Click the User Fields folder and click the New Field button. A new field is added under the User Fields folder.

BG_USER_XX indicates a user-defined field under the Defect entity.

4 Rename the default field name.

In the Field Label box, instead of the default name, type Database. This new field name will be displayed in Quality Center.

Click Save.

Click OK.
Lesson 9 • Customizing Projects

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](image)
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.

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.

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.
Lesson 9 • Customizing Projects
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.

<table>
<thead>
<tr>
<th>In this lesson, you will learn about:</th>
<th>On page:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Getting Started</td>
<td>161</td>
</tr>
<tr>
<td>Documentation Library</td>
<td>164</td>
</tr>
<tr>
<td>Additional Online Resources</td>
<td>166</td>
</tr>
</tbody>
</table>

### 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.
Lesson 10 • Where Do You Go from Here?

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.
Lesson 10 • Where Do You Go from Here?

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.
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 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.)
Lesson 10 • Where Do You Go from Here?

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.