# HP Application Lifecycle Management

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# Tutorial

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# **Welcome to This Tutorial**

Welcome to HP Application Lifecycle Management (ALM). ALM empowers IT to manage the core application lifecycle, from requirements through deployment, granting application teams the crucial visibility and collaboration needed for predictable, repeatable, and adaptable delivery of modern applications.

This tutorial is a self-paced guide that instructs you how to use the ALM application to organize and manage all phases of the application lifecycle. To successfully complete this tutorial, you should perform the tutorial in the order in which the information is presented.

**Note:** To learn how to work with the HP ALM Performance Center Edition, refer to the *HP ALM Performance Center Quick Start*.

## **How This Tutorial Is Organized**

This tutorial contains the following lessons:

#### Lesson 1 Introducing HP ALM

Introduces you to the application lifecycle management process, and familiarizes you with the ALM user interface and the sample Mercury Tours Web site.

#### Lesson 2 Specifying Releases and Cycles

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

#### Lesson 3 Specifying Requirements

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

#### Lesson 4 Planning Tests

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

#### Lesson 5 Running Tests

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

#### Lesson 6 Adding and Tracking Defects

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

#### Lesson 7 Alerting on Changes

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

#### Lesson 8 Analyzing ALM Data

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

#### Lesson 9 Creating Libraries and Baselines

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

#### Lesson 10 Customizing Projects

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

#### Lesson 11 Conclusion

Summarizes the ALM application lifecycle management process and suggests the steps to consider for each phase.

# **Before You Begin**

To work with this tutorial, consider the following specifications:

ALM Editions	<ul> <li>HP ALM is also available in three editions which provide subsets of ALM functionality — HP Quality Center Starter Edition, HP Quality Center Enterprise Edition, and HP ALM Performance Center Edition.</li> <li>This tutorial assumes that you are working in HP ALM or HP Quality Center Enterprise Edition. Some of the lessons and exercises in this tutorial are not applicable if you are working in HP Quality Center Starter Edition. To determine which edition you are using, contact your ALM site administrator.</li> </ul>
	<b>Note:</b> If you are working with the HP ALM Performance Center Edition, refer to the <i>HP ALM Performance Center Quick</i> <i>Start</i> .
ALM_Demo Project	<ul> <li>The demo project is available with the ALM Platform 11.00 installation DVD and is obtained by importing the ALM_Demo.qcp file using Site Administration. For more information, refer to the <i>HP Application Lifecycle Management Installation Guide</i>.</li> <li>To ensure that you get the same results as the ones specified in this tutorial, make sure that you work on a new copy of the ALM_Demo project. For more information, contact your ALM site administrator.</li> <li>By default, the demo project is version control enabled. This tutorial assumes that your demo project is version control, refer to the <i>HP Application Lifecycle Management User Guide</i>.</li> </ul>
Mercury Tours	<ul> <li>The Mercury Tours is a sample application that simulates a Web-based site for reserving flights, hotel rooms, car rentals, cruises, and vacation deals.</li> <li>Mercury Tours is installed during the installation of ALM on a server machine. For more information, refer to the</li> </ul>
	HP Application Lifecycle Management Installation Guide.

HP QuickTest Professional	<ul> <li>To run the automated tests in this tutorial, QuickTest Professional must be installed.</li> <li>To integrate ALM with QuickTest Professional, you must download and install the HP QuickTest Professional add-in and the HP Quality Center Connectivity add-in from the HP Application Lifecycle Management Add-ins page. For more information on ALM add-ins, refer to the HP Application Lifecycle Management Installation Guide.</li> </ul>
HP Sprinter	<ul> <li>To run manual tests in this tutorial, you can use Manual Runner, HP Sprinter, or both. For enhanced functionality and a variety of tools to assist in the manual testing process, run manual tests with Sprinter.</li> <li>To run tests with Sprinter, download and install the Sprinter add-in from the HP Application Lifecycle Management Add-ins page. For more information on ALM add-ins, refer to the HP Application Lifecycle Management Installation Guide.</li> </ul>

## **Documentation Library**

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

- Click Documentation Library in the ALM 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 ALM 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 (<u>http://www.adobe.com</u>).

Reference	Description
Using this Documentation Library	Explains how to use the Documentation Library and how it is organized.
What's New?	Describes the newest features in the latest version of ALM. To access, select <b>Help &gt; What's New</b> .
Product Feature Movies	Short movies that demonstrate the main product features. To access, select <b>Help &gt; Product Feature Movies</b> .
Readme	Provides last-minute news and information about ALM.

#### **Application Lifecycle Management Guides**

Guide	Description
HP ALM User Guide	Explains how to use ALM to organize and execute all phases of the application life cycle management process. It describes how to specify releases, define requirements, plan tests, run tests, and track defects.
HP ALM Administrator Guide	Explains how to create and maintain projects using Site Administration, and how to customize projects using Project Customization.
HP ALM Tutorial	A self-paced guide teaching you how to use ALM to manage the application life cycle management process.

Guide	Description
HP ALM Installation Guide	Describes the installation and configuration processes for setting up ALM Platform.
HP Business Process Testing User Guide	Explains how to use Business Process Testing to create business process tests.

### **ALM Performance Center Guides**

Guide	Description
HP ALM Performance Center Quick Start	A self-paced guide giving the Performance Center user a high level overview of creating and running performance tests.
HP ALM Performance Center Guide	Explains to the Performance Center user how to create, schedule, run, and monitor performance tests. Explains to the Performance Center administrator how to use Lab Management for overall lab resource management, lab settings management, and system configuration.
HP ALM Performance Center Installation Guide	Describes the installation processes for setting up Performance Center Servers, Performance Center Hosts and other Performance Center components.
HP ALM Performance Center Troubleshooting Guide	Provides information for troubleshooting problems while working with HP ALM Performance Center.
HP Performance Center of Excellence Best Practices	Provides best practices for successfully building and operating Performance Centers of Excellence.
HP Performance Monitoring Best Practices	Provides best practices for monitoring the performance of applications under test.

#### **ALM Best Practices**

Guide	Description
HP ALM Database Best Practices Guide	Provides best practices for deploying ALM on database servers.
HP ALM Upgrade Best Practices Guide	Provides methodologies for preparing and planning your ALM upgrade.
HP ALM Business Models Module Best Practices Guide	Provides best practices for working with the Business Models module.

### **ALM API References**

Guide	Description
HP ALM Project Database Reference	Provides a complete online reference for the project database tables and fields.
HP ALM Open Test Architecture API Reference	Provides a complete online reference for the ALM COM- based API. You can use the ALM open test architecture to integrate your own configuration management, defect tracking, and home-grown testing tools with an ALM project.
HP ALM 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 ALM users, projects, domains, connections, and site configuration parameters.
HP ALM REST API Reference	Provides an online reference for the ALM REST-based API. You can use the REST API to access and work with ALM data.
HP ALM Custom Test Type Guide	Provides a complete online guide for creating your own testing tool and integrating it into the ALM environment.

## **Additional Online Resources**

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

Part	Description
Troubleshooting & Knowledge Base	Opens the Troubleshooting page on the HP Software Support Web site where you can search the Self-solve knowledge base. Choose <b>Help</b> > <b>Troubleshooting &amp;</b> <b>Knowledge Base</b> . The URL for this Web site is <u>http://h20230.www2.hp.com/troubleshooting.jsp.</u>
HP Software Support	Opens the HP Software Support Web site. This site enables you to browse the Self-solve knowledge base. You can also post to and search user discussion forums, submit support requests, download patches and updated documentation, and more. Choose <b>Help</b> > <b>HP Software</b> <b>Support</b> . The URL for this Web site is <u>www.hp.com/go/hpsoftwaresupport</u> .
	Most of the support areas require that you register as an HP Passport user and sign in. Many also require a support contract.
	To find more information about access levels, go to:
	http://h20230.www2.hp.com/new_access_levels.jsp
	To register for an HP Passport user ID, go to:
	http://h20229.www2.hp.com/passport-registration.html
HP Software Web site	Opens the HP Software Web site. This site provides you with the most up-to-date information on HP Software products. This includes new software releases, seminars and trade shows, customer support, and more. Choose <b>Help</b> > <b>HP Software Web site</b> . The URL for this Web site is <u>www.hp.com/go/software</u> .
Add-ins Page	Opens the HP Application Lifecycle Management Add- ins Page, which offers integration and synchronization solutions with HP and third-party tools.

Welcome to This Tutorial

1

# **Introducing HP ALM**

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

#### In this lesson, you will learn about:

- ➤ The Application Lifecycle Management Process on page 17
- ► Starting ALM on page 18
- ► The ALM Window on page 21
- ➤ The Mercury Tours Sample Web Site on page 25

### The Application Lifecycle Management Process

The application lifecycle management process with ALM includes the following phases:



Phase	Description
Test Planning	Based on the project requirements, you can build test plans and design tests.
Test Execution	Create a subset of the tests in your project designed to achieve specific test goals. Execute scheduled tests to diagnose and resolve problems.
Defect Tracking	Submit defects and track their repair progress.

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

### **Starting ALM**

Start ALM from your Web browser using the HP ALM URL.

#### To start ALM:

#### **1** Verify tutorial prerequisites.

Before you begin the lessons in this tutorial, verify that you have the appropriate prerequisites. For more information, see "Before You Begin" on page 10.

#### **2** Open the Application Lifecycle Management Options window.

Open your Web browser and type your ALM URL: http://<ALM Platform server name>[<:port number>]/qcbin. Contact your system administrator if you do not have the correct path. The HP Application Lifecycle Management Options window opens.



#### 3 Open ALM.

Click the **Application Lifecycle Management** link.

Each time ALM is run, it checks the version. If it detects a newer version, it downloads the necessary files to your machine.

#### Notes:

- ➤ Windows Vista and 7: If you do not have administrator privileges on your machine, and a Security Warning displays, click Don't Install. You will be redirected to the Install screen.
- If file downloads are prohibited by your browser, you can install these files by using the HP ALM Client MSI Generator Add-in on the More HP Application Lifecycle Management Add-ins page. For more information on add-ins, refer to the HP Application Lifecycle Management Installation Guide.

The ALM Login window opens.



#### **4** Type a user name and authenticate.

In the **Login Name** box, type **alex\_alm**.

Skip the **Password** box. A password was not assigned.

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

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

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

In the **Project** list, select **ALM\_Demo**. If more than one **ALM\_Demo** project is listed, contact your ALM site administrator to determine which project to use.

Click the **Login** button.

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

When you log in to a project, the ALM 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 ALM Window**

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

#### To explore the ALM window:

#### **1** Explore the ALM modules.

Click the following sidebar buttons:

Button	Description
⑦ Dashboard ¥	<ul> <li>Includes the following modules:</li> <li>Analysis View. Enables you to create graphs, reports, and Excel reports.</li> <li>Dashboard View. Enables you to create dashboard pages, in which you can view multiple graphs in a single display.</li> </ul>
Management ×	<ul> <li>Includes the following modules:</li> <li>Releases. Enables you to define releases and cycles for the application management process.</li> <li>Libraries. Enables you to define libraries to track changes in your project, reuse entities in a project, or share entities across multiple projects.</li> </ul>
Requirements ¥	<ul> <li>Includes the following modules:</li> <li>Requirements. Enables you to manage requirements in a hierarchical tree-structure. Requirements can be linked to other requirements, tests, or defects.</li> <li>Business Models. Enables you to import business process models, and test the quality of the models and their components. Access to this module is dependent on your ALM license.</li> </ul>

Button	Description
🙇 Testing 🛛 🗧	Includes the following modules:
	► Test Resources. Enables you to manage test resources in a hierarchical tree-structure. Test resources can be associated with tests.
	➤ Business Components. Depending on your ALM license, you may also have access to the Business Components module. This module enables subject matter experts to drive the quality optimization process using Business Process Testing, the HP test automation solution. For more information, refer to the HP Business Process Testing User Guide.
	<ul> <li>Test Plan. Enables you to develop and manage tests in a hierarchical tree-structure. Tests can be linked to requirements and defects.</li> <li>Test Lab. Enables you to manage and run tests. After</li> </ul>
	running tests, you can analyze the results.
Defects	Enables you to add defects, determine repair priorities, repair open defects, and analyze the data.

#### **2** Explore the common ALM elements.

All the ALM modules have common elements. For example, click the **Defects** sidebar button.

Each of the ALM modules contains the following key elements:

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

Button	Description
< Back Forward >	Navigates to your previous/next view in ALM.
Tools 🔻	Includes commands that you can run from each of the ALM modules.
Help 🔻	Enables you to open the HP Application Lifecycle Management Documentation Library and other additional online resources. It also enables you to display version information for each ALM client component. For more information, see "Documentation Library" on page 11 and "Additional Online Resources" on page 15.
<domain, project, user&gt;</domain, 	Details of the current domain, project, and user.
Logout	Logs you out of your current project and returns you to the Application Lifecycle Management Login window.

- ► Module menu bar. Displays the menus from which you select commands in the current ALM module.
- ► Module toolbar. This is located below the menu bar. It contains buttons for frequently used commands in the current ALM module.
- 3 View ALM help topics.
  - a To view the help topic of the Defects module window, click the Defects sidebar button. The Defects module is displayed. Choose Help > Help on this page. The help topic opens in a separate window.
  - **b** To display the navigation pane, which includes the Contents, Search, and Favorites tabs, click the **Search and Navigate** button. The navigation pane is displayed on the left side of the page.



**c** To view the Application Lifecycle Management Documentation Library home page, in the **Contents** tab, click **Home**. The Documentation Library home page opens.



The Documentation Library consists of guides and references, available online, in PDF format, or both.

- **d** Under the **Contents** tab, click the **Using This Documentation Library** link. The Using This Documentation Library section describes how to navigate, use, update and print the HP ALM guides. It also describes additional available resources.
- e Click the Close button.

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### The Mercury Tours Sample Web Site

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

#### To explore Mercury Tours:

#### **1** Open the Mercury Tours application.

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

The Mercury Tours home page opens.



- **2** Register with Mercury Tours.
  - **a** Click **Register**. The Register page opens.

Home Flights Hotels Car Rentals Cruises	To create your account, we'll need some basic information about you. This information will be used to send reservation confirmation emails, mail tickets when needed and contact you if your travel arrangements change. Please fill in the form completely.
Vacations	Contact Information
	First Name:
	Last Name:
VERSION	Phone:
<u>Use Java Version</u>	Email:
	Mailing Information
SAVINGS! Rant ACar CLICK HERE	Address:
	City:
	State/Province:
	Postal Code:
	Country: UNITED STATES
	User Information
	User Name:
	Password:
	Confirm Password:
	SUBMIT

- **b** Under **User Information**, enter any user name and password, and confirm your password. (Other information is not required.)
- **c** Click **Submit**. Mercury Tours confirms your registration.

#### **3** Log on to Mercury Tours.

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

M	one cool summer ARUBA
MERCURY	SIGN-ON REGISTER SUPPORT CONTACT
Home Flights Hotels Car Rentals Cruises Destinations Vacations	SIGN-ON Welcome back to Mercury Tours! Enter your user information to access the member-only areas of this site. If you don't have a log-in, please fill out the registration form. User Name: Password:
Use Java Version Use Java Version Ref. A Car CLICK HERE	© 2000, Mercury Interactive (v. 020131-1.01-060)

**b** Type your registered user name and password. Click **Submit**. The Flight Finder page opens.

	one cool summer ARUBA				
MERCURY TOURS	SIGN-OFF ITINERARY PROFILE SUPPORT CONTACT				
Home					
Hotels Car Rentals	Use our Flight Finder to search for the lowest fare on participating airlines. Unce you've booked your flight, don't forget to visit the Mercury Tours Hotel Finder to reserve lodging in your destination city.				
Cruises Destinations Vacations	Flight Details Type: @ Round Trip C One Way				
	Passengers: 1				
VERSION	On: May V 20 View Calendar				
<u>Use Java Version</u>	Arriving In: Zurich				
SAVINGS! Rent ACar	Returning:     May     21     View Calendar       SSI     Preferences				
CUCK HERE	Service Class: © Economy class O Business class				
	Airline: No Preference				
	CONTINUE				

#### **4** Reserve a flight.

Follow the on-screen instructions to reserve a flight.

#### **5** End your Mercury Tours session.

Click Sign-off.

2

# **Specifying Releases and Cycles**

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

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

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

#### In this lesson, you will learn about:

- ► Defining Releases and Cycles on page 30
- ► Viewing Releases and Cycles on page 32

## **Defining Releases and Cycles**

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

#### To define a release and its cycles:

#### **1** Open the ALM\_Demo project.

If the **ALM\_Demo** project is not already open, log in to the project. For more information, see "Starting ALM" on page 18.

#### **2** Display the Releases module.

On the ALM sidebar, under Management, select Releases.

#### 3 Create a new release folder.

- **a** In the releases tree, select the root **Releases** folder. Click the **New Release Folder** button. The New Release Folder dialog box opens.
- **b** In the Release Folder Name box, type Service Packs.
- c Click OK. The Service Packs release folder is added to the releases tree.
- **d** 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.

- **a** In the releases tree, make sure that the new **Service Packs** release folder is selected.
- <u>.</u>
- **b** Click the New Release button. The New Release dialog box opens.
- c In the Name box, type Service Pack 1.
- **d** 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.
- **e** In the **Description** box, type the following description for the release: This release is the first service pack release.
- **f** Click **OK**. The **Service Pack 1** release is added to the **Service Packs** release folder.



#### **5** Add a cycle to the release.

- **a** In the releases tree, make sure that the **Service Pack 1** release is selected.
- **b** Click the **New Cycle** button. The New Cycle dialog box opens.
- c In the Name box, type Cycle 1 New Features.
- **d** 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.
- **e** In the **Description** box, type the following description for the cycle: This cycle tests new features added for this service pack.
- f Click OK. The Cycle 1 New Features cycle is added to the Service Pack 1 release.
- **6** Add a second cycle to the release.
  - **a** In the releases tree, right-click the **Service Pack 1** release and choose **New Cycle**. The New Cycle dialog box opens.
  - **b** In the Name box, type Cycle 2 Full.
  - **c** 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.
  - **d** In the **Description** box, type the following description for the cycle: This cycle fully tests all application features.
  - e Click OK. The Cycle 2 Full cycle is added to the Service Pack 1 release.

## ٤)

## **Viewing Releases and Cycles**

You can view the status of your releases and cycles. ALM shows a high-level overview of the progress of the currently selected release or cycle. It also shows the number of defects opened over the course of the currently selected release or cycle. You can also view the number of outstanding defects.

In this exercise you will learn how to display the progress and graphs of a selected release and cycle.

#### To view releases and cycles:

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

On the ALM sidebar, under Management, select Releases.

**2** Display the Progress graph for the Service Pack 1 release.

In the releases tree, select the **Service Pack 1** release, located in the **Service Packs** release folder. In the right pane, click the **Status** tab. The Progress tab is displayed by default.

Total days in release	e'	62		
Devenie in devenie in d		02 04	Days	
Remaining days in r	elease:	61	1	%
Total test instances	for release:	0	Elapsed	Remaining
Remaining test insta	ances to run:	0	Test Insta	nce Runs
Required execution rate (test instances/day):		0.00	N/	д.
Actual execution rat	te (test instances/day):	0.00	L	
	Coverag	e Progress		
100%				
80%				
80% 60%				
80% 60% 40%				
80% 60% 40% 20%				
80% 60% 40% 20%				
80% 60% 40% 20% 0% cle 1 - New Feature	5	Cycle		Cycle 2
80% 60% 40% 20% 0% Cle 1 - New Feature	15	Cycle	Evondod on	Cycle 2
80% 60% 40% 20% 0% cle 1 - New Feature	is	Cycle ments 🗹 🔲	Executed coverage	Cycle 2

The Progress tab displays the progress of the release based on requirement coverage, elapsed and remaining time, and actual and remaining test instances to run. As you have not yet created requirements or tests, the information in the Coverage Progress graph indicates 0% progress.

#### **3** Display the Progress graph for a cycle.

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

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

#### Lesson 2 • Specifying Releases and Cycles

3

# **Specifying Requirements**

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

You define the requirements in ALM by creating a requirements tree in the Requirements module. This is a hierarchically graphical representation of your requirements. You can group and sort requirements in the tree, monitor the progress in meeting requirements, and generate detailed reports and graphs.

In this lesson, you will create requirements in an existing requirements tree. You will then assign the requirements to a cycle in the releases tree. You will also learn how to convert requirements to tests.

#### In this lesson, you will learn about:

- ► Defining Requirements on page 36
- ► Viewing Requirements on page 41
- ► Converting Requirements to Tests on page 45

### **Defining Requirements**

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

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

To define a requirement:

**1** Open the ALM\_Demo project.

If the **ALM\_Demo** project is not already open, log in to the project. For more information, see "Starting ALM" on page 18.

- **2** Display the Requirements module.
  - **a** On the ALM sidebar, under **Requirements**, select **Requirements**.
  - **b** Choose View > Requirements Tree to display requirements in a tree.
- **3** Select the Mercury Tours Application requirement.

Expand the **Requirements** root requirement and select the **Mercury Tours Application** requirement.
**4** Create a new requirement.



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

New Requirement	
🗙 🖑 👧 🖺	
Reg ID: Name:	* Requirement Type: 💿 Undefined 💌
🕼 Details	Details
▲       Rich Text         ●       Attachments	Author:       alex_alm       Image: Direct Cov       Image: Cov         Old Type (       Image: Priority:       Image: Cov       Image: Cov         Product:       Image: Reviewed:       Not Reviewed       Image: Cov         Product:       Image: Cov       Image: Cov       Image: Cov         Reviewer:       Image: Cov       Image: Cov       Image: Cov         Target Rel       Image: Cov       Image: Cov       Image: Cov         Description       Comments       Image: Cov       Image: Cov
	Submit Close <u>H</u> elp

- **b** In the **Requirement Name** box, type Cruise Reservation.
- **c** 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.

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

**d** In the Details tab, type or select the following:

Priority: 4-Very High

Product: Mercury Tours Web Site

- e Click Submit.
- **f** Click **Close** to close the New Requirement dialog box. The **Cruise Reservation** requirement is added to the requirements tree under the **Mercury Tours Application** requirement.

### **5** Add the Cruise Search child requirement.

- **a** In the requirements tree, make sure that the new **Cruise Reservation** requirement is selected.
- **b** Click the **New Requirement** button to add a requirement below **Cruise Reservation**. The New Requirement dialog box opens.
- c In the Requirement Name box, type Cruise Search.
- **d** In the **Requirement Type** box, select **Functional**.

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

**e** In the Details tab, type or select the following:

Priority: 4-Very High

Product: Mercury Tours Web Site

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

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6 Add the Cruise Booking child requirement.

- **a** In the requirements tree, make sure that the **Cruise Reservation** requirement is selected.
- **b** Click the **New Requirement** button to add a requirement below **Cruise Reservation**. The New Requirement dialog box opens.
- **c** In the **Requirement Name** box, type **Cruise Booking**.
- **d** In the **Requirement Type** box, select **Functional**.

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

**e** In the Details tab, type or select the following:

Priority: 4-Very High

Product: Mercury Tours Web Site

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

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7 Assign the requirements to a cycle.

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

- **a** In the requirements tree, select **Cruise Reservation**.
- b Choose Requirements > Assign to Cycle. The Select Cycles dialog box opens.



- **c** Locate the **Service Packs** releases folder. Under **Service Pack 1**, select the check box for the **Cycle 1 New Features** cycle.
- **d** Click **OK** to close the releases tree.
- e Click Yes to assign the cycle to the requirement and its subrequirements.

8 Assign additional requirements to a cycle.

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

- **a** In the requirements tree, under **Mercury Tours Application**, select **Online Travel Booking Services**.
- b Choose Requirements > Assign to Cycle. In the Select Cycles dialog box, locate the Service Packs releases folder. Under Service Pack 1, select the check box for the Cycle 1 New Features cycle. Click OK.
- c Version Control: If the Check Out dialog box opens, click OK.
- **d** Click **Yes** to assign the cycle to the requirement and its sub-requirements.

# **Viewing Requirements**

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

### To view requirements:

- **1** Make sure the Requirements module is displayed.
  - **a** If the Requirements module is not displayed, on the ALM sidebar, under **Requirements**, select **Requirements**.
  - **b** Choose **View** > **Requirements Tree** to display requirements in a tree.

- **2** Zoom in and out of the requirements tree.
  - **a** Select **Cruise Reservation** in the requirements tree.
  - **b** To zoom in, click the **Zoom** arrow and choose **Zoom In**. The requirements tree displays only the child requirements of **Cruise Reservation**.



- **c** To reverse the zoom-in action and display the entire requirements tree, click the **Zoom** arrow and choose **Zoom Out To Root**.
- **3** Rearrange the order of requirements in the requirements tree.

ALM adds requirements to the requirements tree in order of creation. To rearrange the order, select the **Cruise Search** requirement and click the **Move Down** button. The Cruise Search requirement moves down below the Cruise Booking requirement.

### 4 View requirements in the requirements grid.

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

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



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

□ Hido Piok Poood Quality Man		t fielde			 
_ Hide Hisk-based Guality Man	ayemer	it neids	1		 
Filter Cross Filter View (	Order	Group			
Field Name /			Filter C	ondition	-
Author					
Creation Date					
Creation Time					
Direct Cover Status					
Modified					1
Name					1
Old Type (obsolete)					1
Priority					1
Product					1
RBQM business impact					1
RBQM custom business impac					1
RBQM custom failure probabili					1
RBQM custom Functional Com					1
RBQM custom Risk					1
RBQM custom testing hours					1

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

Select Filter Condition	×
October, 2010           Sun Mon Tue Wed Thu         Fri         Sat           26         27         28         29         30         1         2           3         4         5         6         7         8         9           10         11         12         13         14         15         16           17         18         19         20         21         22         23           24         25         26         27         28         29         30           31         1         2         3         4         5         6           Today:         10/5/2010         10/5/2010         10/5/2010         10/5/2010	Clear[Today] [Yesterday] [PreviousWeek] [PreviousMonth] [Tomorrow] [ThisWeek] [ThisWeek] [ThisYear] [NextWeek] [NextWeek] [NextWeek] [NextWeek] [NextYear]
<u>o</u> k	<u>C</u> ancel <u>H</u> elp

- **c** Select the date on which you added requirements.
- **d** Click **OK** to close the Select Filter Condition dialog box.
- e Click OK to apply your chosen filter.
- **f** The Requirements Grid displays the requirements you added.

Requir	eme	ents Edit View Versions Fav	orites Analysis			
🗙 🖄 🦆 🖉 🕆 🔣 🐥 🛛 O Requirements are checked out by alex_alm					» •	
Filter: 0	Crea	ation Date[10/5/2010]				
		Name	Direct Cover Status	Author	Req ID	
6 6 4	1					
	1	💡 Cruise Booking	Vot Covered	alex_alm	367	
	1	🍚 Cruise Search	🐨 Not Covered	alex_alm	366	
		Cruise Reservation	🐨 Not Covered	alex_alm	365	

# **Converting Requirements to Tests**

After you create the requirements tree, you can use the requirements as a basis for defining your test plan tree in the Test Plan module.

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 to test:

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

If the Requirements module is not displayed, on the ALM sidebar, under **Requirements**, select **Requirements**.

- **2** Select a requirement.
  - **a** Choose **View** > **Requirements Tree** to display requirements in a tree.
  - **b** In the requirements tree, select **Cruise Reservation**.

**3** Open the Convert to Tests wizard.

Choose **Requirements** > **Convert to Tests**. The Step 1 dialog box opens.

Step 1 of 3: Choose an automatic conv	version method	×
Converting: Requirements Mercury Tours Application Cruise Reservation		
Automatic Conversion Method		
<ul> <li>Convert lowest child requirements to design steps.</li> </ul>	- Req1 - ₽ Req2 - ₽ Req3	
<ul> <li>Convert lowest child requirements to tests.</li> </ul>	► Req1	
○ Convert all requirements to subjects.	E Req1 □-E Req2 □-E Req3	
	< Previous Next > Cancel He	elp

# **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 sub-requirements to tests.

# **5** Start the conversion process.

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

Step 2 of 3: Manual changes to the automatic con	version 🔀
Converting: Requirements Mercury Tours Application C	uise Reservation
Auto Complete Children	Legend
😐 🔉 🖌 🖹 💳	
Name	
🖻 늘 Cruise Reservation	
n Cruise Booking	
	< Previous Next > Cancel Help

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

tep 3 of 3:	Choose the destination subjec	t path			
Converting:	Cruise Reservation				
Destination S	ubject Path				
Subject					
		< Previous	Finish	Cancel	Help

- **6** Choose the destination subject path.
  - **a** In the **Destination Subject Path** box, click the browse button. The Select Destination Subject dialog box opens.
  - **b** If any filters are applied, click the **Set Filter/Sort** arrow and choose **Clear Filter/Sort**. Click **OK** to confirm.



**c** In the test plan tree, select the **Cruises** subject.

Select Destination Subject	×
多 Y · A ふ	
Subject  Flight Reservation  Flight Reservatio	
OK Cancel Help	

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

Converting:	Requirements\Mercury Tours Application\Cruise Reservation	
Destination Su	ibject Path	
Subject\Crui	ises1	

# **7** Finalize the conversion process.

Click **Finish**. The Required Test Fields dialog box opens and displays the missing required fields of the Cruise Booking test.

# 8 Specify the required test fields.

**a** Select the following:

Level: Basic

Priority: 4-Very High

Reviewed: Reviewed

- **b** Click **OK**. The Required Test Fields dialog box reopens and displays the missing required fields of the Cruise Search test.
- c Select the same values entered for the Cruise Booking test. Click **OK**.
- **d** Click **OK** to close Convert to Tests wizard.

# **9** View the tests in the test plan tree.

- **a** On the ALM sidebar, under **Testing**, select **Test Plan**.
- **b** Choose **View > Test Plan Tree** to display the test plan tree.
- c Expand Cruises. The test plan tree displays Cruise Reservation under Cruises.
- **d** Expand **Cruise Reservation**. The test plan tree displays the **Cruise Booking** and **Cruise Search** tests.



4

# **Planning Tests**

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

After you determine your testing goal, you build a test plan tree, which hierarchically divides your application into testing units, or subjects. For each subject in the test plan tree, you define tests that contain steps. For each test step, you specify the actions to be performed on your application and the expected result.

ALM enables you to use the same test to test different use-cases, each with its own test configuration. Each test configuration uses a different set of data. You define the data by adding test parameter values for each test configuration. A test parameter is a variable that can be assigned a value.

When you create a test, a single test configuration with the same name as the test is created simultaneously. You can create as many additional test configurations as needed.

It is essential that the tests in your test plan comply with your requirements. To help ensure compliance throughout the application lifecycle management process, add coverage between tests and requirements. For finer granularity, you add coverage between test configurations and requirements.

### In this lesson, you will learn about:

- ► Developing a Test Plan Tree on page 52
- ► Designing Test Steps on page 54
- ► Defining Test Parameters on page 58
- ► Defining Test Configurations on page 61
- ► Creating and Viewing Coverage on page 65
- ► Copying Test Steps on page 73
- ► Generating Automated Test Scripts on page 75

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

### To develop a test plan tree:

### **1** Open the ALM\_Demo project.

If the **ALM\_Demo** project is not already open, log in to the project. For more information, see "Starting ALM" on page 18.

# **2** Display the Test Plan module.

On the ALM sidebar, under Testing, select Test Plan.

- **3** Add a subject folder to the test plan tree.
  - **a** Select the **Subject** folder and click the **New Folder** button. The New Folder dialog box opens.
  - **b** In the Folder Name box, type Payment Methods. Click **OK**. The new folder is added to 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 payment methods.

# 4 Add a test to the subject folder.

**a** Select the Payment Methods folder and click the New Test button. The New Test dialog box opens.

🔊 New Test			_ 🗆 X
🗙 🔩 🔒 🗂		Template: <none></none>	
Test ID: * Test Na	me:	* Type: 🗈 MANUAL	•
Details     Attachments		Priorty:     Creation Date:     Reviewer:     Version Nu	
	<u>0</u> K Ck	ose <u>H</u> elp	

- **b** In the **Test Name** box, type a name for the test: **Credit Cards**.
- c In the Test Type box, select MANUAL to create a manual test.
- **d** In the Details tab, select the following:

Level: Basic

Reviewed: Not Reviewed

Priority: 4-Very High



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- **e** In the **Description** tab, type a description for the test: The test verifies credit card types.
- **f** Click **OK**. The new test is added to the test plan tree under the **Payment Method** folder.



# **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 add test steps to the **Credit Cards** test. This test verifies the credit card type used to book a flight.

### To design a test step:

**1** Make sure the Test Plan module is displayed.

If the Test Plan module is not displayed, on the ALM sidebar, under **Testing**, select **Test Plan**.

**2** Display the Credit Cards test.

Expand the Payment Methods folder, and select the Credit Cards test.

- **3** Open the Design Step Details dialog box.
  - **a** Click the **Design Steps** tab.
  - **b** Click the **New Step** button. The Design Step Details dialog box opens.

📑 Design Step Details		_ 🗆 ×
	°o 🔍 💾 🥵 🔓	-
Step Name: Step 1		
Details	Details	
	Description:  Expected Result:	
	<u> </u>	

In the **Step Name** box, a step name is displayed. The default name is the sequential number of the test step.

# **4** Define the first test step.

In the Design Step Details dialog box, type the following:

Step Name: Step 1: Log in to Mercury Tours.

# **Description**:

- 1. Enter URL.
- 2. Log in.

Expected Result: User is logged in to Mercury Tours.



# **5** Add the remaining test steps.

Click the **New Step** button to open the Design Step Details dialog box and type the following test steps:

Step Name	Description	Expected Result
Step 2: Select a flight destination.	<ol> <li>Click the Flights button.</li> <li>Enter flight details and preference.</li> <li>Click Continue.</li> </ol>	Flight details and preference are entered.
Step 3: Enter departure and return flight.	Select departure and return flights. Click Continue.	The flights are selected.
Step Name: Step 4: Enter passenger details.	Enter first name, last name, and meal preference.	Passenger details are entered.
Step 5: Enter credit card details.	<ol> <li>Enter credit card type.</li> <li>Enter credit card number.</li> <li>Enter expiration date.</li> </ol>	Credit card details are entered.
Step 6: Enter addresses.	Enter billing and delivery addresses.	Addresses are entered.
Step 7: Completing the purchase.	Click Secure Purchase.	Purchase completed.
Step 8: Log out.	Click the Log Out button.	User logs out of Mercury Tours.



# **6** Close the Design Step Details dialog box.

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

Detail	s Design Steps 🏶 Pa	rameters * Attachments Test Configurations Re	eq Coverage 🛛 Linked Defects 🔹 Dependencies 👞 🕨
*	🦸 🔩 🗙 🔁 🗓	0 2 5	₽
U	Step Name	Description	Expected Result
	Step 1: Log in to Mercury Tours	1. Enter URL 2. Log in	User is logged in to Mercury Tours
	Step 2: Select a flight destination	<ol> <li>Click the Flights button.</li> <li>Enter flight details and preference.</li> <li>Click Continue.</li> </ol>	Flight details and preference are entered.
	Step 3: Enter departure and return flight	Select departure and return flights. Click Continue.	The flights are selected
	Step 4: Enter passenger	Enter first name, last name, and meal preference.	Passenger details are entered.
	Step 5: Enter credit card details	<ol> <li>Enter credit card type.</li> <li>Enter credit card number</li> <li>Enter expiration date</li> </ol>	Credit card details are entered
	Step 6: Enter addresses	Enter billing and delivery addresses.	Addresses are entered.
	Step 7: Completing the	Click Secure Purchase	Purchase completed
	Step 8: Log out	Click the Log Out button	User logs out of Mercury Tours

# **Defining Test Parameters**

To increase the flexibility of your tests, you can add parameters to your tests. This enables you to run the same test repeatedly with different data each time.

When working with a manual test, you can add parameters to the design steps from within the test or you can add parameters by calling them from other tests. This is useful if you have common steps you often want to perform as part of other tests.

When working with an automated test, you can define parameters for a test script from within the test or you can load parameters from a shared test resource file.

When defining a test configuration, you define data by setting test parameter values for each test configuration.

In "Designing Test Steps" on page 54, you defined steps for the **Credit Cards** test. In this exercise, you will add parameters to enhance this test.

#### To define test parameters:

- **1** Display the Parameters tab for the Credit Cards test.
  - **a** In the test plan tree, expand the **Payment Methods** folder, and select the **Credit Cards** test.
  - **b** Click the **Parameters** tab.

### **2** Add a parameter.

**a** Click the **New Parameter** button. The New Test Parameter dialog box opens.

New Test Parameter		
🗙 🖧 🖟 💼		-
* Parameter Name:		
Details	Details	
	Order:	
	↓ Default Value Description	
	QK Close Help	

**b** Type the following:

Parameter Name: Credit card type.

Default Value: American Express, Visa, or MasterCard.

**c** Click **OK** to close the New Test Parameter dialog box. The parameter is added to the Parameters tab.

### **3** Add an additional parameter.

- **a** Click the **New Parameter** button. The New Test Parameter dialog box opens.
- **b** Type the following:

Parameter Name: Credit card number.

Default Value: XXXX-XXXX-XXXX

**c** Click **OK** to close the New Test Parameter dialog box. The parameter is added to the Parameters tab.

### **4** Assign parameters to the test steps.

- **a** Click the **Design Steps** tab.
- **b** Click the **Description** box of Step 5.
- c Place the cursor after 1. Enter credit card type and click the Insert Parameter button. The Parameters dialog box opens.

Credit card type       American Express,         Credit card number       1111-2222-3333-4         Image: State of the		Parameter Name	Default Value	Description	
Credit card number       1111-2222-3333-4         Image: State of the state of		Credit card type	American Express,		
Pescription Default Value *		Credit card number	1111-2222-3333-4		
Pescription Default Value *					
Pescription Default Value *					
Pescription Default Value *					
Description Default Value *					
Jescription Default Value *					
	Jescri	Iption Default Value	*		

**d** Select the **Credit card type** parameter. Click **OK**.



e Place the cursor after 2. Enter credit card number and click the Insert Parameter button. The Parameters dialog box opens. Select the Credit card number parameter. Click OK.

The parameters are added to your design step.

Details	: Design Steps 🏶 🛛 Pa	rameters * Attachments Test Configurations Rev	q Coverage	Linked Defects	Dependencies
*	s 423 🗙 🔁 🗎		4		-
U	Step Name	Description	Expected	Result	
	Step 1: Log in to Mercury Tours	1. Enter URL	User is logge	ed in to Mercury To	urs
	2. Log in				
	Step 2: Select a flight 1. Click the Flights button. destination 2. Enter flight details and preference. 3. Click Continue.			and preference ar	e entered.
	Step 3: Enter departure and return flight	Select departure and return flights. Click Continue.	The flights a	re selected	
	Step 4: Enter passenger	Enter first name, last name, and meal preference.	Passenger d	letails are entered.	
	Step 5: Enter credit card details	Enter credit card type. << <credit card="" type="">&gt;&gt;     Enter credit card number &lt;&lt;<credit card="" number="">&gt;&gt;     Enter expiration date</credit></credit>	Credit card o	letails are entered	
	Step 6: Enter addresses	Enter billing and delivery addresses.	Addresses a	are entered.	
	Step 7: Completing the	Click Secure Purchase	Purchase co	mpleted	
	Step 8: Log out	Click the Log Out button	User logs ou	t of Mercury Tours	

# **Defining Test Configurations**

You can reuse a test to test different use-cases. For each use-case you create a test configuration that uses a different data set. When working with a manual test, the data set of a test configuration contains values for your defined test parameters. When working with a QuickTest Professional or a business process test, the data set can use an external test resource file.

In the following exercise, you will create a test configuration for each of the following credit cards: American Express, Visa, and MasterCard. You will then define the actual parameter values to be used when running these instances.



To define test configurations:

- **1** Display the Test Configurations tab for the Credit Cards test.
  - **a** In the test plan tree, expand the **Payment Methods** folder, and select the **Credit Cards** test.
  - **b** Click the **Test Configurations** tab.

				233
Name	Created by	Creation date	Execution Status	
Uredit Cards	alex_alm	10/7/2010	No Hun	
			000000000000000000000000000000000000000	
Description Da	ata Attachments	History		
	ad Addenments	Thistory		 _

By default, ALM created the Credit Cards test configuration.

- **2** Rename the test configuration name to American Express.
  - a Under Name, click Credit Card. Type American Express.
  - **b** Under **Description**, type: Test configuration for American Express.
- **3** Assign data to the test configuration.
  - **a** Click the **Data** tab.
  - **b** Under Actual Value, click the top cell. Click the arrow and click in the box. Type: 2222-2222-3333-4444. Click **OK**.

**c** Under **Actual Value**, click the second cell. Click the arrow and click in the box. Type: American Express. Click **OK**.

Descript	ion Data Attachmo	ents History	meters 🔻
Used	Parameter Name	Default Value	Actual Value
$\checkmark$	Credit card number	1111-2222-3333-4444	2222-3333-4444-5555
$\checkmark$	Credit card type	American Express, Vis	American Express

- **4** Add a new test configuration for Visa.
  - **a** Click the **New Test Configuration** button. The New Test Configuration dialog box opens.
  - **b** Type the following:

Name: Visa

Description: Test configuration for Visa.

- **c** Click **OK**. The test configuration is added to the Test Configuration tab.
- **d** Make sure the Visa test configuration is selected.
- e Click the **Data** tab. Under **Actual Value**, click the top cell. Click the arrow and click in the box. Type: 3333-4444-5555-6666. Click **OK**.
- **f** Under **Actual Value**, click the second cell. Click the arrow and click in the box. Type: Visa. Click **OK**.

# **5** Add a new test configuration for MasterCard.

- **a** Click the **New Test Configuration** button. The New Test Configuration dialog box opens.
- **b** Type the following:

Name: MasterCard

Description: Test configuration for MasterCard.





- **c** Click **OK**. The test configuration is added to the Test Configuration tab.
- **d** Make sure the MasterCard test configuration is selected.
- e Click the **Data** tab. Under **Actual Value**, click the top cell. Click the arrow and click in the box. Type: 4444-5555-6666-7777. Click **OK**.
- **f** Under **Actual Value**, click the second cell. Click the arrow and click in the box. Type: MasterCard. Click **OK**.

		Created b	у	Creation date	Execution Status		
Americ	can Express	alex_alm		10/7/2010	🖸 No Run		
/isa		alex_alm		10/12/2010	🖸 No Run		
√laste	r Card	alex_alm		10/12/2010	💿 No Run		
escrip	tion Data	Attachn fault Values	nents	History pdate Selected Para	meters 🔹		
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escrip	tion Data	Attachn fault Values r Name number	Pik U Defau 1111-	History pdate Selected Para ult Value 2222-3333-4444	meters • Actual Value 2222-3333-4444-555	5	

# **6** Version Control: Check in the test configurations.

Check in the test and its test configurations. In the test plan tree, rightclick the **Credit Card** test, and select **Versions** > **Check In**. Click **OK** to confirm.

# **Creating and Viewing Coverage**

It is essential that the tests in your test plan comply with your requirements. To help ensure compliance throughout the application lifecycle management process, you can add coverage between your tests and requirements. You can also add coverage between test configurations and requirements.

You can create coverage from the Test Plan module and the Requirements module. A test or a test configuration can cover more than one requirement, and a requirement can be covered by more than one test or test configuration.

In these exercises, you will learn about the following:

- ► "Creating Coverage" on page 65
- ► "Analyzing Coverage" on page 69

# **Creating Coverage**

In this exercise, you will create the **Credit Cards** requirement and then create coverage by associating it to the **Credit Cards** test.

# To create coverage:

# **1** Display the Requirements module.

- **a** On the ALM sidebar, under **Requirements**, select **Requirements**.
- **b** Choose **View** > **Requirement Details**. The Requirement Details view is displayed.

**2** Create the Credit Card requirement.

- **a** Select the **Mercury Tours Application** folder.
- **b** Click the **New Folder** button. In the New Requirement Folder dialog box, type: Payments. Click **OK**.
- **c** Select the **Payments** folder and click the **New Requirement** button. The New Requirement dialog box opens.
- **d** In the **Requirement Name** box, type Credit Cards.
- e In the Requirement Type box, select Functional.

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

**f** Click **Submit**. Click **Close**. The new requirement is added to the requirements tree.

### **3** Display the Test Coverage tab.

- **a** In the requirements tree, make sure that the **Credit Cards** requirement is selected.
- **b** In the right pane, click the **Test Coverage** tab.



匐

# **4** Display the Test Plan Tree pane.

📆 Select

Click the **Select Tests** button to show the test plan tree on the right.

Requirements Edit View Version	ns Favorites Anal	lysis			
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No Filter Defined	Details Rich Te	xt Attachments	Linked Defects	Requirement Traceabi	lity Test Coverage Busines 🕢 🕽
Name  Requirements	🛐 Select 🐄	Status Filter: All	•	>> Test Plan Tree	×
🗉 🧰 Business Models	Entity Name	Coverage Status	Coverage Type	e 🗢 🖸 🤇	<b>▼</b> • ≫
Online Travel Bookin     Online Travel Bookin     Online Travel Bookin     Online Travel Informe     Profile Management     Beservalor Manage     Booking System     Application Manage     Application Usability     Application Client Sys     Application Client Sys     Application Client Sys     Application Performar     Oruse Reservalant     Oruse Reservalant				Subject	tached es IP eservation ay ury Tours Site aling nent Methods redit Cards ing s s s s s s s s s s s s s s s s s s s
Assemble order     Generation     Contract processing				Name	Test Name
				American Expres	s Credit Cards
				Visa	Credit Cards
				MasterCard	Credit Cards
•					

# **5** Select the Credit Cards test in the test plan tree.

- **a** In the Test Plan Tree pane, expand the **Payment Methods** folder, and select the **Credit Cards** test.
- **b** If the Test Configurations pane is not displayed, click the **Show** button on the bottom of the pane. Under the Test Configurations pane, you can see that the test contains three test configurations.

### **6** Add the test to the coverage grid.

In the Test Plan Tree pane, click the **Add to Coverage** button. The **Credit Cards** test is added to the coverage grid.

# **7** Display the Test Configuration Status tab.

Click the **Test Configuration Status** tab.



The Test Configuration Status tab shows the associated test configurations and their status.

Requirements Edit View Versions Favorites Analysis						
🖆 🐮 🗙 🔮 🎍 😅 🔻 -	III 📴 🗓 🔍 🕶 🕨 🐂 🔭 0 Requirements are checked out by alex_alm	» •				
No Filter Defined	Details Rich Text Attachments Linked Defects Requirement Traceability Test Cover	age 🏶 🛛 Busi 🕢 🕨				
Name	Select       Status Filter:       All       Image: Coverage Status       Coverage Status	×				
Assemble order     Contract processing	Coverage Chart Test Configuration Status	figuration-Test>Te				
	American Express Credit Cards					
	Name Description Status Visa Credit Cards MasterCard Credit Cards					
	American Express Test configuratio O No Run Visa Test configuratio O No Run Master Card No Run					

**Tip:** To add selected configurations of a test to the requirement's test coverage, add coverage from the Test Configurations pane.

### 8 Hide the test plan tree.

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

- **9** Version Control: Check in the Payments folder and the Credit Card requirement.
  - **a** In the test plan tree, right-click the **Payments** folder, and select **Versions > Check In**. Click **OK** to confirm.
  - **b** Right-click the Credit Cards requirement, and select Versions > CheckIn. Click OK to confirm.

# Analyzing Coverage

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

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

### To analyze test coverage:

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

If the Requirements module is not displayed, on the ALM sidebar, under **Requirements**, select **Requirements**.

**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.



- **a** If any filters are applied, click the **Filter** arrow and choose **Clear Filter/Sort**. Click **Yes** to confirm.
- **b** Under the **Mercury Tours Application** requirement, expand the **Application Client System** requirement and its children.



In the Coverage Analysis column, you can see graphically the number of child requirements that have a direct cover status and those that are not yet covered. **4** Display coverage analysis for the Application Client System requirement.

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

📊 Coverage Analysis	×					
This graph displays the coverage status for requirement <b>230 - Application Client System</b> and its children according to the current filter. Click a group in the graph to display its list of requirements.						
2 Failed						
14 Not Cover	ed					
Copy to Clipboard	<u>Show Test Coverage</u> ≯					

**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	×
This graph displays the coverage status for <b>230 - Application Client System</b> and its children according to the current filte Click a group in the graph to display its list of	requirement er. of requirements.
Failed Requirements:     237 Size     238 Resolution	Go To
Copy to Clipboard	Show Test Coverage ≯

- **6** Display test coverage for the requirement.
  - **a** Click the **Show Test Coverage** link to extend the Coverage Analysis dialog box and display the Test Coverage Chart.



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

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

Click the **Close** button.
# **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 **HTML Page Layout** test and paste them into a newly created test.

### To copy a test step:

### **1** Display the Test Plan module.

- **a** On the ALM sidebar, under **Testing**, select **Test Plan**.
- **b** If the test plan tree view is not displayed, select **View > Test Plan Tree**.

# 2 Create a new test.

- **a** In the test plan tree, expand the **Mercury Tours Site** folder.
- **b** Select the **HTML Pages** folder and click the **New Test** button. The New Test dialog box opens.
- **c** In the **Test Name** box, type a name for the test: New HTML Page Layout.
- **d** In the **Test Type** box, select **MANUAL** to create a manual test.
- **e** In the Details tab, select the following:

Level: Basic

Reviewed: Not Reviewed

Priority: 4-Very High

- **f** Click **OK**. The new test is added to the test plan tree under the **HTML Pages** folder.
- **3** Display the Design Steps tab for the HTML Page Layout test.
  - **a** In the **HTML Pages** folder, select the **HTML Page Layout** test.
  - **b** Click the **Design Steps** tab.



### **4** Select the steps that you want to copy.

Position the mouse pointer in the gray sidebar on the left. The mouse pointer changes to a pointing hand. Select all rows.

Details	Design Steps 🕷	Parameters	Attachments	Test C	onfiguratio	nfigurations Req Coverage * Linked		Linked De ∢ 🕨
2 4	🤊 📲 🗶 🗎	6 C   0 A	<b>₽</b> • %	9	II 1		1 ₩	-
6 s	Step Name	Description				Expe	cted Result	-
F	Page Title	Verify the Web pa browser window.	ge title shown ir	n the title	ofthe	1. Pag descri be use	e should have title. 2. ptive 3. Different title ed.	The title shoul on each page
F	Page Text	Check the text par	agraphs on the	page.	   	1. Text Recurr positio should should	t paragraphs should l ring text should appe n on all pages. 3. At l l be used. 4. Serif and not be mixed.	be left aligned. ar in a consisté east a 10-poin d Sans Serif fo
F	Forms Check the forms on the page: - Input fields - Lists 1. The input fields should be left aligned set of input fields should be justified. 3. fields that have the same meaning, sho the same length on all pages. For exam User Name input field should be of the should be used. 5. Serif and Sans Series and S					e left aligned. 2 justified, 3. Al eaning, should s. For example d be of the sar ast a 10-point d Sans Serif fo		
N	lavigation Bars	Verify the navigat	on bars on the p	page.		1. All if be left bar sh be in c menu i links.	tems in the left-side n aligned. 2. All items i ould be center aligne consistent positions o tems should be unde	avigation bar s n the top navig d. 3. All menus n all pages. 4. rlined, since th
4	inks	Check the links on graphics links	the page: - text	t links -		1. All li should label s should	nks should be underl be descriptive. 3. Al hould point to the sar be in different color	ned. 2. Link lal I links with the ne location. 4. to the surroun

### **5** Copy the selected steps.

Click the **Copy Steps** button.

- **6** Paste the steps into the New HTML Page Layout test.
  - **a** In the test plan tree, select the **New HTML Page Layout** test.
  - **b** In the **Design Steps** tab, click the **Paste Steps** button. The test steps are copied to the Design Steps tab.





# **Generating Automated Test Scripts**

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

Consider these issues when deciding whether to automate a test.

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

In this exercise, you will generate a QuickTest Professional test script for the **Address Options** test.

**Note:** For prerequisites to working with a QuickTest Professional test, see "Before You Begin" on page 10.

# To generate an automated test script:

### **1** Make sure the test plan tree view is displayed.

If the test plan tree view is not displayed, select **View > Test Plan Tree**.

#### **2** Locate the Address Options manual test.

- a Select the Subject folder at the root of the test plan tree and chooseEdit > Find. The Find dialog box opens.
- **b** In Value To Find, type Book.
- c In the Search for, select Folders.
- **d** Click **Find**. The Search Results dialog box opens and displays a list of possible matches.
- **e** Double-click the **Flight Reservation**\**Book Flight** folder to highlight the folder in the test plan tree. Click **Close** to close the Search Results dialog box.
- **f** In the test plan tree, expand the **Book Flight** folder and select the **Address Options** test.

#### **3** Display the Design Steps tab.

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

### **4** Generate a test script.

- **a** Click the **Generate Script** button.
- **b** Choose **QUICKTEST\_TEST** to generate a QuickTest Professional test.
- **c** Version Control: If a check out message box opens, click **OK**.

The steps in the **Address Options** test are used to create the automated test script.

#### **5** View the test script.

- **a** Click the **Test Script** tab.
- **b** To display and modify your test script in QuickTest Professional, click the Launch QuickTest Professional button.



5

# **Running Tests**

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

You start by creating **test sets** and choosing which tests to include in each set. A test set contains a subset of the tests in an ALM project designed to achieve specific test goals. ALM 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 ALM 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, ALM opens the selected testing tool, which runs the test, and imports the test results to ALM.

#### In this lesson, you will learn about:

- ► Defining Test Sets on page 78
- ► Adding Tests to a Test Set on page 84
- ► Scheduling Test Runs on page 88
- Running Tests Manually on page 96
- ► Viewing and Analyzing Test Results on page 107
- ► Running Tests Automatically on page 115

# **Defining Test Sets**

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

When defining a test set, ALM adds instances of your selected tests to the test set. Each test instance contains a defined test configuration. Test sets can include instances from both manual and automated tests. You can also include instances of the same test in different test sets or add more than one instance to the same test set.

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

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

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

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

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

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

# To define a test set:

# **1** Display the Test Lab module.

On the ALM sidebar, under **Testing**, select **Test Lab**. By default, the Test Sets tab is displayed.

- **2** Add a folder to the test sets tree.
  - **a** In the test sets tree in the left pane, select the **Root** folder.
  - **b** Click the **New Folder** button. The New Test Set Folder dialog box opens.
  - c In the Folder Name box, type Service Pack 1 and click OK.

# **3** 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.

**11** 

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

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

- **a** Right-click the **Cycle 1 New Features** test set folder and select the **Assign to Cycle** button. The Select Cycles dialog box opens.
- **b** Expand the Service Packs releases folder. In the Service Pack 1 release, select the Cycle 1 New Features cycle (created in Lesson 2, "Specifying Releases and Cycles").
- **c** Click **OK**. The icon for the folder in the test sets tree changes to show that the folder has been assigned to a cycle.



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



- **5** Add a test set to the Cycle 1 New Features test set folder.
  - **a** In the test sets tree, select **Cycle 1- New Features**.
  - **b** Click the **New Test Set** button. The New Test Set dialog box opens.

🔊 New Test Set	
Test Set ID: *Name:	Type: 🖉 Default
Attachments	Detais         Baseline: <ul> <li>Close Date:</li> <li>Open Date:</li> <li>Target Cycle:</li> </ul> Status: <ul> <li>Target Cycle:</li> <li>Test Set Fol</li> <li>Cycle 1 - New Features</li> </ul>
	<u>QK</u> Close <u>H</u> elp

**c** Type the following:

Name: Mercury Tours Site

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

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



**6** Define the test set details.

**a** Click the test set in the test sets tree. The Details tab is displayed.

Details	Execution	Grid	Execution Flow	A	utomation	Attach	ments	Linked Defects	ŀ	$\bigcirc$
* Name:		Mercu	ry Tours Site		Baseline:				-	
Close D	)ate:			•	Modified:		10/13/	2010 8:29:04 PM		
Open Da	ate:	10/13/	2010	•	Status:		Open		•	]
Target Cycle: Cycle 1 - New Features			Test Set	Fol	Cycle	1 - New Features		]		
Test Se	et ID:	302			Туре:		<u>آلا</u> De	fault		
					0000					
Descripti	ion									
This test	t set includ	es test:	s that verify the fur	nctio	nality of the	Mercury	' Tours	site.		

**b** Perform the following:

**Open Date**: Select a date from the calendar for the planned opening date for the test set. Today's date is selected by default.

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

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

Details	Execution Grid	Execution Flow	Automation	Attachments	Linked Defects	F ∢ ▶		
-OnAul	- On Automatic Test Failure							
🗌 Rer	un test							
Ma	ximum test reruns:		0	-				
Cle	anup test before reru	n:	•	]				
On fina	l failure:	Do nothing	-					
Maximu	im test set reruns:		0	-				
Se	ttings per test							
– Notific	ation							
Send ei	mail in the event of:							
	Any test in the Autor	matic Runner finis	hes with status	"Failed"				
	Environmental railure	e (network probler	ns, hardware ra 	allure, etc.j				
	All tests in the Auton	natic Hunner that	were run nave	nnished				
	То							
– Execu	tion Summary							
□ Send summary of results after test set execution								
	Select Fields	lun Name, Test, S	itatus, Tester, E	xec Date, Exec	Time			
	То							

**b** Perform the following:

On Automatic Test Failure: Select the Rerun test check box. In Maximum test reruns, set to 1.

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

### 8 Instruct ALM to send email to specified users if certain events occur.

Under **Notification**, perform the following:

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

To: Type your email address.

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

# Adding Tests to a Test Set

After you define a test set, select tests for inclusion in the test set. ALM adds instances of the selected tests to the test set. Each instance contains a defined test configuration.

In this exercise, you will add test instances to the **Mercury Tours Site** test set.

### To add a test to a test set:

### **1** Display the Execution Grid tab.

- **a** If the Test Lab module is not displayed, on the ALM sidebar, under **Testing**, select **Test Lab**. By default, the Test Sets tab is displayed.
- **b** Click the **Execution Grid** tab.

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

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

# **3** Display the right pane if it is not already displayed.

Click the **Select Tests** button. The right pane displays the Test Plan Tree and Requirements Tree tabs.

Test Sets Test Runs			
Test Sets Edit View Tests Fav	orites Analysis		
🖻 🖄 🗙 💭 💋 🕺	🗓 Select Tests 👂 Run 🔻 况 Run Tes	: Set 🗙 🖸	Test Plan Tree Requirements Tree 🗙
No Filter Defined	Details Execution Grid Execution Flow	Automation 🔺 🕨	< ♥ ♥ ♥ ♥ • ⇒>> • • •
Root     Unattached     DePT tests (Flight)     Mercury Tours Web Site     Modeling     Service Pack 1     Cycle 1 - New Featu     Cycle 2 - Full     Test Run Schedule	Image: Image	Type	Subject B Cruises Fight Reservation B Hercury Tours Site B Modeling B Payment Methods B Profiling
		•	Test Configurations 🏾

The **Test Plan Tree** tab enables you to select tests from the test plan tree to add to the test set. The **Requirements Tree** tab enables you to select tests covering requirements to add to the test set.

\*

- **4** Add the Credit Card test to the test set.
  - **a** In the **Test Plan Tree** tab, expand the **Payment Methods** folder and select the **Credit Cards** test.
  - **b** If the Test Configurations pane is not displayed, click the **Show** button on the bottom of the pane. Under the Test Configurations pane, you can see the three test configurations for the selected test.



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- **c** To include all test configurations, in the Test Plan Tree tab, click the **Add Tests to Test Set** button. The instances are added to the test set.
- **5** Add several tests from the Book Flight folder to the test set.
  - a Under the Flight Reservation folder, expand the Book Flight folder.
  - **b** Select the **Passenger Name** test.
  - c Press the CTRL key and select the following tests: Credit Card Number, Credit Card Expiration Date, Credit Card Owner, and Billing And Delivery Address. Click the Add Tests to Test Set button. The instances are added to the test set.

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

- **a** Under the **Flight Reservation** folder, expand the **Flight Finder** folder.
- **b** Drag the **Number of Passengers** test from the test plan tree to the Execution Grid to add it to the test set.

# **7** Close the right pane.

Click the close button.

Details	Execution Grid	Execution Flow	Automation	Attachments	Linked Defects 🛛 ł 📢 🕽
68 🚨 P	Name		Туре	Status	Responsible
	[1]Passenger Na	ame	MANUAL	🖸 No Run	alex_alm
	[1]Credit Card N	umber	MANUAL	🖸 No Run	alex_alm
	[1]Credit Card E	xpiration Date	MANUAL	🖸 No Run	alex_alm
	[1]Credit Card O	wner	MANUAL	🖸 No Run	alex_alm
	[1]Billing And De	elivery Address	MANUAL	🖸 No Run	alex_alm
	[1]American Exp	ress	MANUAL O No Bun MANUAL O No Bun		alex_alm
	[1]Visa				alex_alm
	[1]Master Card		MANUAL	🖸 No Run	alex_alm
	[1]Number Of Pa	assengers	QUICKTEST_TE	🖸 No Run	alex_alm
4					•
Last Ru	n Report		0000		\$

# **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 determine that Test 2 will run only if Test 1 passed, and Test 3 will run only if Test 2 passed. Test 1 is scheduled to run at 9:00 AM on a specified date. The Execution Flow displays the tests and their conditions in a diagram.



A blue line — arrow indicates that the test instance is to be executed after the previous test instance, with no conditions. A green line — arrow indicates that the test instance is to be executed only if the previous test instance has status **Passed**. A black line — arrow indicates that the test instance is to be executed only if the previous test instance has finished running. When a test instance is time-dependent, a Time Dependency icon is added to the diagram. 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 instance and specify when each one is to be run.

### To schedule a test run:

#### **1** Make sure the Test Lab module is displayed.

On the ALM sidebar, under **Testing**, select **Test Lab**. By default, the Test Sets tab is displayed.

#### **2** Create a new test set.

- a 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.
- **b** Type the following:

Test Set Name: Test Run Schedule

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

- **c** Click **OK**. The **Test Run Schedule** test set is added to the test sets tree in the left pane.
- **3** Add tests from the Sign-On/Sign-Off folder to the Test Run Schedule test set.
  - **a** Click the **Execution Flow** tab. If the right pane is not already displayed, click the **Select Tests** button. The Test Plan Tree tab and the Requirements Tree tab are displayed.
  - **b** In the Test Plan Tree tab, under the **Profiling** folder, expand the **Sign-On/Sign-Off** folder.

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Press the CTRL key and select the following tests: Sign-On Page,
 Sign-On User Name, and Sign-On Password. Click the Add Tests to
 Test Set button. The test instances are added to the test set.



- **4** Add an execution condition to the Sign-On User Name test.
  - **a** In the Execution Flow tab diagram, 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: Test <	[1]Sign-On User Name>	×
Execution Conditions	Time Dependency	
₽ 0 × .		
Test has no Execution Co	onditions	
	<u> </u>	



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

New Execution C	Condition	×
Test <[1]Sign-On I	User Name> runs only if	
Test	💌 is Finished	-
Comments		
	<u>O</u> K <u>C</u> ancel	

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

- **d** Select **Passed** from the list on the right to instruct ALM to execute the **Sign-On User Name** test instance only if the **Sign-On Page** test instance finishes executing and passes.
- e Click OK. The condition is added to the Run Schedule dialog box.

Run Schedule: Test <[1]Sign-On User Name>	×
Execution Conditions Time Dependency	
⊕ 0 ×.	
Test Runs Only If	
test 🗦 [1]Sign-On Page is	Passed
<u>D</u> K <u>C</u> ancel <u>H</u> elp	

- **5** Add a time dependency condition to the Sign-On User Name test instance.
  - **a** Click the **Time Dependency** tab.

Run Schedule: Test <[1]Sign-0	In User Name>	•		×
Execution Conditions Time De	ependency			
⊙ Run At Any Time				
O Run At Specified Time				
Date 10/19/2010	*			
Time 03:42:26 PM				
	<u>0</u> K	<u>C</u> ancel	<u>H</u> elp	

**b** Click **Run At Specified Time**. Select the **Date** check box and select tomorrow's date.

**c** Click **OK** to close the Run Schedule dialog box. Your conditions are displayed in the Execution Flow diagram.



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

Add the same execution condition as described in Step 4 on page 91 for the **Sign-On Password** test. This time select **Sign-On User Name** from the **Test** box in the New Execution Condition dialog box.

- 7 Add a time dependency condition to the Sign-On Password test.
  - **a** Add the same time dependency condition as described in Step 5 on page 93 for the **Sign-On Password** test.
  - **b** Click **OK** to close the Run Schedule dialog box. Your conditions are displayed in the Execution flow diagram.



# **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.

You run tests in ALM using HP Sprinter, HP's solution for manual testing. If you are not working with Sprinter, you run tests manually using Manual Runner.

In these exercises, you will learn about the following:

- ► Running with Sprinter on page 96
- ► Running with Manual Runner on page 102

# **Running with Sprinter**

Sprinter provides advanced functionality and tools to assist you in the manual testing process. Sprinter is fully integrated with ALM, enabling you to get the maximum benefit from both solutions.

#### Note:

- ► ALM Editions: Sprinter functionality is not available with Quality Center Starter Edition or Performance Center Edition.
- ➤ For information on installing Sprinter, see "Before You Begin" on page 10.

In this exercise, you will run the **Credit Cards** test. This test contains three test configurations. For the purpose of this exercise, you will perform the steps without testing them against the Mercury Tours application.

### To run a test using Sprinter:

# **1** Open Sprinter.

- **a** If the Test Lab module is not displayed, on the ALM sidebar, under **Testing**, select **Test Lab**. By default, the Test Sets tab is displayed.
- **b** Click the **Execution Grid** tab.
- c Click the **Run** arrow and select **Run with Sprinter**. HP Sprinter opens.

Run Setup ?	Visa	
Vice O	General Settings Steps (8)	7 General Settings Test instance: Visa
VISA ()	Parameters (2)  Parameters (2)  Run Summary Steps (8) Submitted Defects (0) Defect Reminders (0) User Actions (0) Storoboard	Test name: Credit Cards Test set: Root/Service Pack 1/Cycle 1 - New Features/Mercury Tours Site Owner: elex_alm * Run_name: Run_10-17_17-45 Description: The test verifies the credit card type. Attachments: No attachments
Power Mode 💿 👓		Language:

**2** Select the instances to run from the test set.



**a** Click the **Open HP ALM Tests** button. The Open dialog box opens.

b In the left pane, expand the Root folder. Under Service Pack 1, expand Cycle 1 - New Features. Select the Mercury Tours Site test set. The test set is displayed.

Filter Select Columns Select toot Unattached BPT tests (Flight) Mercury Tours Web Site Modeling Release 10.5 Service Pack 1 Cycle 1 - New Features		eselect All Configuration: Name [1]Passenger Name [1]Credit Card Number [1]Credit Card Expirati [1]Credit Card Owner [1]Billing And Delivery [1]American Express [1]Visa	Test: Test Name Passenger Name Credit Card Number Credit Card Expiration Credit Card Expiration Credit Card Overer Billing And Delivery A Credit Cards Credit Cards	Status No Run No Run No Run No Run Not Completed Passed	Re <sup>4</sup> ale ale ale ale ale ale
Gycle + New Feature     Mercury Tours Sit     Gycle 2 - Full     Test Run Schedule	<b>V</b>	[1]Visa [1]Master Card	Credit Cards Credit Cards	Passed No Run	ale ale
x		Lipromoti of Lasson	number of Fusiongola		
	1				

- c Select American Express, Visa, and MasterCard check boxes. Click Open.
- **3** Display the test steps to run the American Express instance.



Click the Run the Active Test button. The Steps pane is displayed.

	Steps 🔻		
Test: Credit Cards			? 🖊
◎ ▾ ◎ ▾   ಈ ∥ ▼ 🕛 ▼ 🕛   🛒 🔛 🕼 🕼 🕼	۱۹		
1. Step 1: Log in to Mercury Tours		. (3)  ↓	
1. Enter URL 2. Log in			
Expected Result:			
User is logged in to Mercury Tours			=
2. Step 2: Select a flight destination		9	
3. Step 3: Enter departure and return flight			
4. Step 4: Enter passenger details			
5. Step 5: Enter credit card details		9   9	
6. Step 6: Enter addresses			-
0	/8	Duration: 00	0:04:39

# **4** Perform the first step.

- a Click the Actual Result button. In the Actual Result dialog box, type: The Mercury Tours site opens. Click OK.
- **b** Click the **Passed Selected Step** button.
- **5** Perform the second step.
  - **a** Click the **Actual Result** button. In the Actual Result dialog box, type: Flight details and preference are entered. Click **OK**.
  - **b** Click the **Passed Selected Step** button.
- **6** Pass the remaining steps.
- Click the **Passed Selected Step** arrow and select **Pass All**.
  - 7 Continue on to the Visa instance.

Click **Next Test**. Sprinter advances to the next instance in the test list.

8 Pass all steps of the Visa instance.

Click the **Passed Selected Step** arrow and select **Pass Al**.

**9** Continue on to the MasterCard instance.

Click **Next Test**. Sprinter advances to the next instance in the test list.

**10** Pass all steps of the MasterCard instance.

Click the **Passed Selected Step** arrow and select **Pass Al**.

- **11** Fail the last step on the MasterCard instance.
  - Select **Step 8** and click the **Fail Selected Step** button.



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### **12** End the run and view run results.

**a** In the upper-right side of your screen, click **Run Control**. The Run Control pane opens.



**b** Click the **End Run** button.



**c** Under **Tests**, you view the run results.

### **13** View results in the Execution Grid tab.

# Close Sprinter.

The test run results are displayed in the execution grid. The Last Run Report pane displays run results of each test step.

Test Sets Test Runs Test Sets Edit View Tests Favorit	es Analysis					
🖆 🖄 🗙 💭 🕻 💭 🐥	📳 Select Tests 👔	> Run ▼ 🛺 Run Te	est Set 🛛 🗙 🖌	C 7 • 🕅 🗊	0 🏲 ঝ	
No Filter Defined	Details Execution	Grid Execution Flo	w Automation	Attachments Li	inked Defects History	
E-🔚 Root 🗄 📴 Unattached	🛛 🖁 🔎 🏲 Name		Туре	Status	Responsible	Exec *
🗄 🧱 BPT tests (Flight)	[1]Passe	nger Name	MANUAL	🖸 No Run	alex_alm	
🖻 🧱 Mercury Tours Web Site	[1]Credit	Card Number	MANUAL	🖸 No Run	alex_alm	
	[1]Credit	Card Expiration Date	MANUAL	🖸 No Run	alex_alm	
Helease 10.5	[1]Credit	Card Owner	MANUAL	🖸 No Run	alex_alm	
E - Cucle 1 - New Feature	[1]Billing	And Delivery Address	MANUAL	🖸 No Run	alex_alm	
Mercury Tours Site	[1]Americ	an Express	MANUAL	Passed	alex_alm	10/1
🕀 📷 Cycle 2 - Full	[1]Visa		MANUAL	🔇 Passed	alex_alm	10/1
Test Run Schedule	[1]Master	Card	MANUAL	😧 Failed	alex_alm	10/1
	[1]Numb	er Of Passengers	QUICKTEST_	TE 🖸 No Run	alex_alm	-
	•					•
	Last Run Report					¥
		Launch Sp	rinter Results Viev	ver		
	Step Name	Status	Exec Date 🔺	Steps Details		
	Step 1: Log in to	. 📀 Passed	10/17/201	Description:		-
	Step 2: Select a	📀 Passed	10/17/201	1. Enter URL2. Log in		
	Step 3: Enter de.	. 📀 Passed	10/17/201	Expected:		
	Step 4: Enter pa.	. 📀 Passed	10/17/201 🖕 i	User is logged in to Me	ercury Tours	
	<b>(</b>					-

# **Running with Manual Runner**

If Sprinter is not installed you can run tests manually using Manual Runner.

In this exercise, you will run the **Credit Cards** test. This test contains three test configurations. For the purpose of this exercise, you will perform the steps without testing them against the Mercury Tours application.

### To run a test using Manual Runner:

- **1** Make sure the Cycle 1 New Features test set folder is displayed in the Execution Grid.
  - **a** If the Test Lab module is not displayed, on the ALM sidebar, under **Testing**, select **Test Lab**.
  - **b** In the test set tree, expand the **Cycle 1 New Features** test set folder under **Service Pack 1**. Select the **Mercury Tours Site** test set.
  - c Click the Execution Grid tab.
- **2** Select the instances to run from the test set.

Press the CTRL key and select the following instances in the Execution Grid: **American Express**, **Visa**, **and MasterCard**.

### **3** Open Manual Runner.

Click the **Run** arrow and select **Run with Manual Runner**. The Manual Runner dialog box opens.

Manual Runner: Test Set (Mercury Tours Site), Test ([1]American Express)							
🝺 Begin Run 📒	End Run 🗙 Cancel Run	[] <b>*</b> ] ▼ ③ os	Info	. ?.			
Run Details		1					
* Run Name:	Run_10-17_3-14-2	* Status:	Not Completed				
* Test Set:Name:	Mercury Tours Site	* Tester:	alex_alm 🔤 💌				
Baseline:		Change Detect					
Change Status:		Configuration ID:	1202				
Configuration:	American Express	Draft Run:	N 💌				
Duration:	0	Exec Date:	10/17/2010				
Exec Time:	3:14:00 AM	Host:					
Iterations Status:		Language:	<b>v</b>	•			
Comments							
			Add Co	mment			
Test Details		00000					
Name: Credit Cards		L	<u>est Details</u>				

### **4** Start the test run.

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

Manual Runner: 1	Fest Set <mercury< th=""><th>Tours Site&gt;, Tes</th><th>t &lt;[1]American Express&gt;</th><th>×</th></mercury<>	Tours Site>, Tes	t <[1]American Express>	×			
* 4 4 - 5	• <p> [] • *</p>	• <b>∓†</b> 🗇 All		. ?.			
Step Name	Status	Exec Date	Exec Time	• • •			
Step 1: Log in to	🖸 No Run	10/17/2010	3:19:29 AM				
Step 2: Select a f	🖸 No Run	10/17/2010	3:19:29 AM				
Step 3: Enter de	🖸 No Run	10/17/2010	3:19:29 AM				
Step 4: Enter pas	🟮 No Run	10/17/2010	3:19:29 AM				
Step 5: Enter cre	🟮 No Run	10/17/2010	3:19:29 AM				
Step 6: Enter ad	🟮 No Run	10/17/2010	3:19:29 AM				
Step 7: Completi	😢 No Run	10/17/2010	3:19:29 AM				
Step 8: Log out	🟮 No Run	10/17/2010	3:19:29 AM				
1. Enter URL 2. Log in	Description Condition  1. Enter URL  2. Log in						
Expected:		Actu	ial:				
User is logged in to Me	ercury Tours						

# **5** Perform the first step.

**a** In the Actual box, type: The Mercury Tours site opens.





# **6** Perform the second step.

- **a** In the Actual box, type: Flight details and preference are entered.
- **b** Click the **Pass Selected** button. Step 3 is displayed.
- 7 Pass the remaining steps.

Click the **Passed Selected** arrow and select **Pass All**.

8 End the run.

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

**9** Continue on to the Visa instance.

Click the **Begin Run** button. The Manual Runner dialog box opens. Note the name of the instance in title bar.

# **10** Pass all steps of the Visa instance.

Click the **Passed Selected** arrow and select **Pass Al**.

# **11** End the run.

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

**12** Continue on to the MasterCard instance.

Click the **Begin Run** button. The Manual Runner dialog box opens. Note the name of the instance in title bar

# **13** Fail all steps of the MasterCard instance.

Click the Fail Selected arrow and select Fail All.

# **14** End the run.

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









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### **15** View the run results in the Execution Grid.

Following the execution of your tests, you can view the run results of your last run in the Execution Grid.

0 🛚 🗭 🏲	Name	Туре	Status	Responsible	Exec
	[1]Credit Card Number	MANUAL	🖸 No Run	alex_alm	
	[1]Credit Card Expiration Date	MANUAL	🖸 No Run	alex_alm	
	[1]Credit Card Owner	MANUAL	🖸 No Run	alex_alm	
	[1]Billing And Delivery Address	MANUAL	🖸 No Run	alex_alm	
	[1]American Express	MANUAL	📀 Passed	alex_alm	10/1
	[1]Visa	MANUAL	📀 Passed	alex_alm	10/1
	[1]Master Card	MANUAL	😳 Failed	alex_alm	10/1
	[1]Number Of Passengers	QUICKTEST_TE	🖸 No Run	alex_alm	
	'	1		1	
4					

### **16** View the results of each test step in the Last Run Report pane.

**a** Select one of the recently run instances. If the Last Run Report pane is not displayed, click the **Show** button on the bottom of the pane. The Last Run Report pane is displayed below the Execution Grid.

L	ast Run Report				¥
	Step Name	Status	Exec Da	Steps Details	
	Step 1: Log in to Mer	🔀 Failed	10/17/20	Description:	
	Step 2: Select a fligh	l 🗙 Failed	10/17/20		
	Step 3: Enter departu	🗙 Failed	10/17/20	1. Enter URL 2. Log in	
	Step 4: Enter passer	🗙 Failed	10/17/20	2. Log #1	
	Step 5: Enter credit o	🗙 Failed	10/17/20	Expected:	
	Step 6: Enter addres	🗙 Failed	10/17/20		-
4		** - ···		User is logged in to Mercury Tours	

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

# **Viewing and Analyzing Test Results**

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

This section includes:

- ► Viewing Test Results on page 107
- ► Viewing Test Coverage on page 109
- ➤ Viewing Coverage Progress on page 113

You can also use ALM reports and graphs to further analyze your test results. For more information, see "Analyzing ALM Data" on page 141.

# **Viewing Test Results**

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

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

### To view test results:

D,

**1** Make sure the Test Lab module is displayed.

On the ALM sidebar, under **Testing**, select **Test Lab**. By default, the Test Sets tab is displayed.

- **2** Make sure the Cycle 1 New Features test set folder is displayed.
  - **a** In the test set tree, expand the **Cycle 1 New Features** test set folder under **Service Pack 1**. Select the **Mercury Tours Site** test set.
  - **b** Click the **Execution Grid** tab.
- **3** Select American Express in the Execution Grid.

In the Execution Grid tab, select American Express.

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



### **5** View test run information.

Click **Runs**. The run details are displayed.

Test Instance Details	AB RB	AR.				
Test Name: [1]American Exp	oress		Cycle: Cycle 1 -	New Featu Tes	t Type: 🛅 MANUA	۰ ۹L
Details	×			Continue (Spri	inter)	-
<ul> <li>P&gt; Execution Settings</li> <li>Attachments</li> </ul>	Filter:	Run ID	Run Name	status	By: Exec Date[Des	Exec Date
Linked Defects     We History		314	▶ Run_10-17_2	. 🥥 Passed	Sprinter	10/17/20
	Com	ments Report	Launch Sprinte	r Results Viewer		*
	St	ep Name	Status Ex	- Steps Deta	ails	
	Ste	ep 1: Log in to ep 2: Select a f ep 3: Enter de	Passed IC     Passed IC     Passed IC     Passed IC	1. Enter URL	2. Log in	
			,			
		<u>0</u> K	<u>C</u> ancel <u>F</u>	<u>t</u> elp		

#### **6** View other test run information in the Test Instance Details dialog box.

- **a** Click **Execution Settings** to view parameters used to run the instance. Note that any changes that you make are implemented in the next test run.
- **b** Click **Linked Defects**. This view lists the defects linked to the currently selected test instance. You can view, add, and remove defect links.
- c Click **History** to view a list of changes made to the test run fields.

# **7** Close the Test Instance Details dialog box.

Click the **Close** button.
## Viewing Test Coverage

You previously saw how you can use the Coverage Analysis view to analyze the breakdown of child requirements according to their tests coverage (see "Analyzing Coverage" on page 69).

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

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

#### To view test coverage:

- **1** Display the Coverage Analysis view in the Requirements module.
  - **a** On the ALM sidebar, under **Requirements**, select **Requirements**.
  - **b** Choose View > Coverage Analysis. The Coverage Analysis view is displayed.
- **2** Filter the coverage analysis by cycle.
  - **a** On the upper-right side of the window, click the **Settings** button. The Analysis Settings dialog box opens.
  - **b** Select **Execution Analysis**. Click the arrow. 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**.
  - c Click **OK** to close the Analysis Settings dialog box.

**d** Expand the **Payments** requirement. In the Coverage Analysis column, you can see that the requirement has failed. This is because the Credit Cards test which covers the requirement failed.

Requirements     Edit     View     Versions       Image: Second seco	Favorites Analysis           Image: Parameter in the security of
	- Legend
No Filter Defined	
Name 4 C	overage Analysis
🖃 📴 Requirements 📒	103
🕀 🔚 Business Models	21
🖃 🔚 Mercury Tours Applicati	66
主 🛛 🚔 Online Travel Booki	18
🕣 💼 Online Travel Infor	
🛨 💼 Profile Management	3
	10
🕀 🔛 Booking System	6
🕀 🔛 Application Security	3
Application Usability	15
Application Ulient S	2
Application Perform	7
Cruise Heservation	2
Payments	
Cleuit Calus	Failed
Assemble order	11
E Contract processing	
Description Comments Rich Text	Attackmante History
Description Comments Rich Text	Attachments History

- **3** Display test coverage details for the Credit Cards requirement.
  - **a** Right-click the **Credit Cards** requirement, and choose **Coverage Analysis**. The Coverage Analysis dialog box opens.

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



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

El Select 🙀	Status Filter: Fail	ed 💽		Full Coverage
ilter: Coverage Stati	us["Failed"]			
Entity Name	C	overage Status	Coverage Type	Coverage Mode
<u>Credit Cards</u>	G	Failed	Test	All Configurations
		Booseee		
Test Configuration	Status	Bososso		
Test Configuration	Status	800000	-	
Test Configuration	Status			
Test Configuration	Status	Status		
Test Configuration	Status Description T est configuratio	Status 5 🧭 Passed		
Test Configuration           Test Configuration           Test Configuration           Name           American Express           Visa	Status Description Test configuratio Test configuratio	Status D @ Passed D @ Passed		

The dialog box shows the failed test together with the test run status of each test configuration.

**e** Close the Test Coverage dialog box.

### **4** Close the Coverage Analysis dialog box.

Click the **Close** button.

## Viewing Coverage Progress

You were previously introduced to the Progress tab in the Releases module (see "Viewing Releases and Cycles" on page 32). In this exercise, you will view the graphs and statistics that now reflect the results of tests you ran in previous exercises.

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

#### To view coverage progress:

**1** Display the Releases module.

On the ALM sidebar, under Management, select Releases.

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

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



The top pane shows information such as the total and remaining days in the cycle, total test instances for the cycle, and actual and remaining test instances to run.

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

# **Running Tests Automatically**

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

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 a QuickTest Professional test.

**Note:** For prerequisites to running a QuickTest Professional test, see "Before You Begin" on page 10.

#### To run a test automatically:

**1** Make sure the Test Lab module is displayed.

On the ALM sidebar, under **Testing**, select **Test Lab**. By default, the Test Sets tab is displayed.

- **2** Select the Number of Passengers test.
  - **a** In the test sets tree, expand the **Mercury Tours Web Site** test set folder. Under **Functionality And UI**, select the **Mercury Tours Functionality** test set.
  - **b** Click the **Execution Grid** tab.
  - c Select the Number of Passengers test.

#### **3** Open the Automatic Runner dialog box.

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

<b>Automatic Runner &lt; Root\Mercu</b> Run Settings	iry Tours Web Site\Functi	onality And UI\Mercury Tours F	
🕨 Run All 🜔 Run 🔳 Stop 🔳 S	top All		0
🗌 Run All Tests Locally 🛛 🗹 Ena	ble Log 📃 Offline Exec	ution	
Test Name 愛麗(1)Number Of Passengers	Run on Host	Status	

### **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. ALM opens the selected testing tool automatically and runs the test. You view the test execution progress in the **Status** column.

#### **6** Close the Automatic Runner dialog box.

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

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

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

#### 8 Close QuickTest Professional.

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

6

# **Adding and Tracking Defects**

Locating and repairing defects is an essential phase in application development. Defects can be detected and submitted by users in all stages of the application lifecycle management process. Using HP Application Lifecycle Management (ALM), you can submit defects detected in the application and track them until they have been repaired and retested.

#### In this lesson, you will learn about:

- ► How to Track Defects on page 118
- ► Adding New Defects on page 119
- ► Matching Defects on page 121
- ► Updating Defects on page 122
- ► Linking Defects to Tests on page 127
- ► Creating Favorite Views on page 129

# **How to Track Defects**

When you submit a defect to an ALM 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 an ALM 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 denied, 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 then 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 an ALM project at any stage of the application lifecycle management process. In this exercise, you will submit a defect connected to the **Flight Confirmation** test.

#### To add a new defect:

#### **1** Open the ALM\_Demo project.

If the **ALM\_Demo** project is not already open, log in to the project. For more information, see "Starting ALM" on page 18.

#### **2** Display the Defects module.

On the ALM sidebar, select **Defects**. The Defects Grid displays defect data in a grid. Each row in the grid displays a separate defect record.

#### **3** Open the New Defect dialog box.

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

New Defect						-	
🗙 🖓 - 🍫 🖡	Ав	AR E					
Defect ID:	* S	ummary:					
Details Attachments		Details Assigned To:		Browser:		•	
		Category: Detected in V	▼ ▼	Detected By: Detected on	alex_alm 🖂	•	
		Estimated Fi		Language:	English	•	
	<b>∀</b> ∆	Prioduct Area: Priority:	×	Project:	Mercury Tours Web Sit	•	
		Regression:	N 💌	Reproducible:	Y	-	-
		Description:					
			Submit Close	<u>H</u> elp			

#### **4** Describe the defect.

Enter the following data in the specified fields. Scroll down the dialog box as necessary.

Summary: Missing information on Flight Confirmation page.

Category: Defect

Severity: 2-Medium

Subject: Flight Reservation > Flight Confirmation

**Description:** The defect was detected on the Flight Confirmation page. Passenger details and meal preferences are not displayed.

**5** Determine the cycle in which the defect was detected.

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

- a In the Detected in Cycle box, click the arrow. The releases tree opens.
   Expand the tree. In the Mercury Tours Application releases folder, in the Release 10.5 release, select the Cycle 1 New Features cycle.
- **b** Click **OK** to close the releases tree.
- You can see that ALM automatically assigns the value Release 10.5 to the Detected in Release field. This is because Cycle 1 - New Features is part of the Release 10.5 release.
- **6** Attach the URL address for the Mercury Tours page where the defect was detected.
  - **a** On the New Defect dialog box sidebar, click **Attachments**. The Attachment page opens.
  - **b** Click the **URL** button. The Attach Uniform Resource Locator (URL) dialog box opens.
  - Type the URL address of the Mercury Tours page: http://<ALM Platform server name>/mtours



- **d** Click **OK**. A link to the Mercury Tours page is displayed above the **Description** box.
- **7** Add the defect to the ALM project.
  - **a** Click the **Submit** button. The defect is added to the Defects Grid.
  - **b** Click **Close** to close the New Defect dialog box.

# **Matching Defects**

Identifying matching defects enables you to eliminate duplicate or similar defects in your project. Each time you add a new defect, ALM 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 long, 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 **ALM\_Demo** project.

### To match defects:

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

If the Defects module is not displayed, on the ALM sidebar, select **Defects**.

### 2 Select Defect ID 80.

- **a** If a filter is applied to the grid, click the **Set Filter/Sort** arrow and choose **Clear Filter/Sort** to clear the filter.
- **b** In the Defects Grid, select **Defect ID 80**.



#### 3 Find similar defects.



Click the **Find Similar Defects** button. The results are displayed in the Similar Defects pane at the bottom of the window, sorted by the percentage of detected similarity. Note that there are no duplicate defects in the project for the selected defect.

Search for:	Missing information on Flight C 💽 Proximity	%: 25 🚼 Search 🛛 👯 🗔 🕏	» ?
Defect ID	Summary	Description	Comments
<u>80</u>	Missing information on Flight Confirmation	The defect was detected on the Flight Confir	
Item 1 of 1	1		

Close the Similar Defects pane.

# **Updating Defects**

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

In addition, you will practice updating multiple records simultaneously.

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

To update defects:

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

If the Defects module is not displayed, on the ALM sidebar, select **Defects**.

### **2** Open the Defect Details dialog box.

In the Defects Grid, select the defect you added in "Adding New Defects" on page 119. Click the **Defect Details** button. The Defect Details dialog box opens.

🖳 Defect Details							
Defect ID: 80 * Summ	ary: Missing informatio	on on Flight Confirmation page					
Details	Details						
<ul> <li>Attachments</li> <li>■ Linked Entities</li> <li></li></ul>	* Category: * Project: * Subject: * Reproducible: * Detected By: Assigned To: Estimated Fix	Defect Mercury Tours Web St Flight Confirmation Y elex_alm Y	* Status: Detected in V * Detected on Regression: * Severity: Priority: Planned Clos	New  10/10/2010  N  3-High			
	Description: The defect was det Confirmation page. I meal preferences a	C ected on the Flight Passenger details and re not displayed.	omments:		Add Comment		
		<u>O</u> K <u>C</u> ancel	<u>H</u> elp				

**3** Change the severity level of the defect.

In the Severity box, select 5-Urgent.

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

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

- a In the Target Cycle box, click the arrow. The releases tree opens.
   Expand the tree. In the Mercury Tours Application releases folder, in the Release 10.5 release, select the Cycle 4 a Full cycle.
- **b** Click **OK** to close the releases tree.
- c You can see that ALM automatically assigns the value Release 10.5 to the Target Release field. This is because the Cycle 4 a Full cycle is part of the Release 10.5 release.
- **5** Add a new comment to explain the change in the severity level.
  - **a** Click the **Add Comment** button. A new section is added to the **Comments** box, displaying your user name and the current date.
  - **b** Type: This defect should be fixed in the next service pack.

### **6** View the Attachments.

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

### 7 View Linked Entities.

Click **Linked Entities** on the sidebar to view entities that have been linked to the defect. Linked entities can include requirements, tests, test sets, test instances, runs, run steps, and other defects. There are currently no linked entities. You will learn how to link a defect to a test in "Linking Defects to Tests" on page 127.

### 8 View the History.

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

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

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

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

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

- **a** In the Defects Grid, select defect ID 23.
- b Click the Detected in Cycle box and click the arrow. In the releases tree, expand the release folder Mercury Tours Application and the release Release 10.5. Select the Cycle 1 New Features cycle and click OK.
- c Drag the horizontal scroll bar to the right until the Target Cycle column comes into view. Click the Target Cycle box for defect ID 23, and click the arrow. In the releases tree, expand the release folder Mercury Tours Application and the release Release 10.5. Select the Cycle 1 New Features cycle and click OK.

#### 11 Update multiple records simultaneously.

- **a** In the Defects Grid, select defect 35.
- **b** Hold down the CTRL key, and select defect 36. Now both defects 35 and 36 are selected.
- c Select Edit > Update Selected. The Update Selected dialog box opens.

Update Selected				×
Update Field:	Actu	al Fix Time		•
Value:				
	🗌 Ig	nore errors		
	Jpdate	Close	<u>H</u> elp	

d Click the arrow adjacent to the Update Field box, and select Assigned To. Notice that the Value box displays the Assigned To value of the defect you selected last.

	🔍 🗌 View k	y <u>G</u> roup	•
🔒 Name	Full name		-
🔒 alice_alm			
🔒 cecil_alm			
🔒 james_alm			_
🔒 kelly_alm			
🔒 mary_alm			
🔒 michael_alm			
🔒 paul_alm			
🔒 peter_alm			
🧟 robert elm			-
OK	Cancel	Clear	//

e Click the arrow adjacent to the Value box. The users list opens.

- **f** In the users list, select **michael\_alm**, and click **OK**.
- **g** In the Update Selected dialog box, click **Update**.
- **h** After the update completes, an Information dialog box displays a summary of the update. Click **OK**, then close the Update Selected dialog box.
- **12** View the number of defects opened in Cycle 1 New Features on the Quality tab.

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

- a On the ALM sidebar, under Management, select Releases. On the Releases tree, expand the release folder Mercury Tours Application and the release Release 10.5, and select the cycle Cycle 1 New Features. Click the Quality tab.
- b In the Defect Opening Rate graph, you can see the defects detected in Cycle 1 - New Features according to defect severity.
- **c** In the **Outstanding Defects** graph, you can see the outstanding defects in **Cycle 1 New Features** according to defect status.

# **Linking Defects to Tests**

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

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

The following diagram illustrates the flow of indirect linkage:



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

In this exercise, you will link your defect to the **Flight Confirmation** 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.

On the ALM sidebar, under Testing, select **Test Plan**.

**2** Select the Flight Confirmation test.

In the test plan tree, under **Flight Reservation**, expand the **Flight Confirmation** test subject, and select the **Flight Confirmation** test. Click the **Linked Defects** tab.

#### **3** Add a linked defect.



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

ᡖ Defec	ts To Link					_ 🗆 ×
<b>S</b> 7	• 🔣 🔍					
No Filter D	)efined					
	Defect ID	Detected By	Assigned To	Status	Summary	*
8 🗭	1	alice_alm	james_alm	Fixed	The list of flights	
8 🗭	2	alice_alm	james_alm	Reopen	The list of availa	
8 🔔	3	alice_alm	james_alm	Open	The list of flights	
8	4	alice_alm	james_alm	Closed	Nothing happene	
8	5	alice_alm	james_alm	Open	The list of flights	-
Descripti * Summa	on <mark>'Y:</mark> The list of fligh	ts is given even when	past date set as dep	arting date		
Descript	ion:		Comment	s:	Add Co	mment
Test: (1)Departing Date Run: Run_9-2_10-26-57						
			Link <u>C</u> ano	cel		

**b** Select the defect you added in "Adding New Defects" on page 119 and click the **Link** button. Your defect is added to the Linked Defects grid.

7

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

- **4** View the linked test in the Defects Grid.
  - **a** On the ALM sidebar, select **Defects**.
  - **b** Double-click defect ID 80 in the Defects Grid. The Defect Details dialog box opens.
  - **c** Click **Linked Entities** on the sidebar, and select the **Others** tab. The **Flight Confirmation** test is linked to your defect.
  - **d** Click **OK** to close the Defect Details dialog box.

# **Creating Favorite Views**

A **favorite view** is a view of an ALM window configured 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, on the ALM sidebar, select **Defects**.

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



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

Filter defects					X
7 🗅 📋					•
Filter Cross Filter	View O	rder Group			
Field Name	- <u>-</u> <u>-</u> <u>-</u>		Filter Condition	I.	
Actual Fix Time					
Assigned To					1
Browser					1
Category					1
Closed in Version					
Closing Date					1
Defect ID					1
Detected By					1
Detected in Cycle					
Detected in Release					
Detected in Version					
Detected on Date					
Estimated Fix Time					
Language					
Modified					1
Planned Closing Version	, 1				1
Priority					
Product Area					-
	<u>0</u> K	<u>C</u> ancel	<u>H</u> elp		

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

Select Filter Condi	tion	×
Condition:		Clear
	🔍 🗌 View by <u>G</u> roup	- Or
🔒 Name	Full name	
[CurrentUser]		Not
🔒 alex_alm		
🔒 alice_alm		>=
🔓 cecil_alm		<=
🔓 james_alm		=
🔓 kelly_alm		
🔒 mary alm		*
	<u>O</u> K <u>C</u> ancel <u>H</u> elp	

- **c** Under **Name**, select the **[CurrentUser]** variable, or select your ALM login name from the list. Click **OK** to close the Select Filter Condition dialog box.
- **d** For the **Status** field, click the **Filter Condition** box. Click the arrow. The Select Filter Condition dialog box opens.
- **e** In the right pane, click the logical expression **Not**.
- **f** In the left pane, select **Closed**.



- **g** Click **OK** to close the Select Filter Condition dialog box.
- **h** Click **OK** to apply your chosen filter. The Defects Grid displays the defects you detected that are not closed.

- **3** Add a favorite view.
  - **a** In the **Favorites** menu, select **Add to Favorites**. The Add Favorite dialog box opens.

Add Favorite				×
*Name				
📑 🗙				-
Private				
	<u>0</u> K	<u>C</u> ancel	<u>H</u> elp	

- **b** In the Name box, type: My detected defects (status 'Not Closed')
- You can add a favorite view to either a **public** folder or a **private** folder. Views in the public folder are accessible to all users. Views in the private folder are accessible only to the person who created them. Select **Private**.
- **d** Click **OK**. The new favorite view is added to your private folder, and is displayed in the list of recently used favorite views, located under the Private and Public folders.

Ī	Favo	rites Analysis		
2	숧	Add to Favorites		
	ŵ	Organize Favorites		Liser]]:Status[Not Closed]
1		Private	6	My detected defects (status 'Not Closed')
	<b>E</b>	Public	÷	
1	☆	1 private: My detected defects (status 'Not Closed')		

- **4** Organize favorites.
  - **a** In the **Favorites** menu, select **Organize Favorites**. The Organize Favorites dialog box opens.

Organize Favorites	×
K     My detected defects (status 'Not Closed')     Public	•
Use drag and drop to move favorites and folders.	
Close Hate	_

**b** Double-click the **Public** folder.



- **c** Click the **New Folder** button. The New Favorite Folder dialog box opens.
- **d** In the Favorite Folder Name box, type QA defects, and click **OK**. The **QA defects** folder is added as a sub-folder to the **Public** folder.



- e Drag the following favorites into the **QA defects** folder:
  - ► QA Bug Verification
  - > QA Team Member My Fixed and Rejected defects
- **f** Click **Yes** to confirm, and close the Organize Favorites dialog box.

Lesson 6 • Adding and Tracking Defects

7

# **Alerting on Changes**

You can instruct HP Application Lifecycle Management (ALM) to create alerts automatically and send emails to notify those responsible when certain changes occur in your project that may impact the application lifecycle management process. You can also add your own follow-up alerts.

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

ALM 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, ALM sends you an email reminder.

#### In this lesson, you will learn about:

- ► Triggering an Alert on page 136
- ► Creating Follow Up Alerts on page 139

# **Triggering an Alert**

When a requirement, test, test instance, or defect in your project changes, ALM can notify those responsible for any associated entities. You can associate tests with requirements (see "Defining Test Configurations" on page 61) and defects with other ALM entities (see "Linking Defects to Tests" on page 127). In addition, you can create traceability links between requirements. For more information on creating traceability links between requirements, see the *HP Application Lifecycle Management User Guide*.

ALM can generate alerts for these changes:

What changed?	Which associated entities are flagged?	Who is notified?
Requirement (excluding	Tests	Test designers
change of <b>Direct Cover</b> <b>Status</b> and risk-based quality management fields)	Requirements	Requirement authors
Defect status changed to <b>Fixed</b>	Test instances	Responsible testers
Test ran successfully	Defects	Users assigned to defects

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

### To trigger an alert:

- **1** Display the requirements tree.
  - **a** On the ALM sidebar, under **Requirements**, select **Requirements**.
  - **b** In the Requirements module, select **View > Requirement Details**.
- **2** Select the requirement that you want to change.

Under **Reservation Management**, select the **View Reservations** 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.

- **a** Click the **Details** tab.
- **b** Click the down arrow adjacent to the **Priority** box and select **5-Urgent**.

**Version Control:** If you are prompted to check out the requirement, click **OK**.

This change causes ALM to generate alerts for the tests associated with the requirement. ALM also sends email notification to the designers of the associated tests.

**Version Control:** Check in the new version of the requirement. Right-click the requirement, and select **Versions** > **Check In**. Click **OK** to confirm.

#### **5** View the alert for the Flight Confirmation test.

- **a** In the **Test Coverage** tab, click the link to the **Flight Confirmation** test. The test is highlighted in the test plan tree.
  - 🛛 🕼 🚨 🏲 Name 🖃 🛛 🔚 Subject 🛨 🛛 🛅 Unattached 🛨 🛛 🛅 Cruises 🖃 🛛 📴 Flight Reservation 🕀 🛛 📴 Book Flight 🖃 🛛 📴 Flight Confirmation 8 🔔 Flight Confirmation Print Confirmation U 🐎 Flight Confirmation Navigation 6 ⇒ Flight Confirmation Page 🛨 🛛 🛅 Flight Cost 😥 🛛 📴 Flight Finder 6 🕀 🛛 📴 Select Flight 6 🛼 Flight Reservation # Flight\_Reservation\_Stress A Flight\_Reservation 🛨 🛛 🛅 Itinerary 🕀 🗧 Mercury Tours Site 🕀 🛛 🚞 Modeling 🛨 🛛 🛅 Profiling 🕀 🛅 Temp
- **b** Click the **Refresh All** button.

The **Flight Confirmation** test has an alert flag  $\mathbf{P}$ , indicating that a change was made to an associated requirement.

**c** Click the **Alerts** flag for the **Flight Confirmation** test. The Alerts dialog box opens.





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

**Version Control:** The alert states that the version status has changed to **Checked In**. It does not indicate which fields have been modified. You can then compare the new version with the previous version.

- d Click OK.
- **6** View the alerts of the other associated tests.

In the test plan tree, view the alerts of the following tests: **Itinerary** > **Itinerary Page** and **Itinerary** > **View Reservations** > **Review Reservations**.

## **Creating Follow Up Alerts**

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

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

#### To create a follow up alert:

**1** Display the Defects module.

On the ALM sidebar, select Defects.

**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.



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

Flag For Follow	Up				×
Follow up by:	10/11	/2010			•
Description:					
	<u>o</u> k	<u>C</u> ancel	C <u>l</u> ear Flag	<u>H</u> elp	

**b** Perform the following:

Follow up by: Select the date one week from today.

**Description**: Type: Remind me about this defect on this date.

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

Defe	ects		Edit View Favo	rites Analysis		
* New Defect X Ø ▼ ▼						
6 2		Þ	Actual Fix Time	Assigned To	Browser	Category
8				james_alm james_alm	Internet Explorer	Defect Defect
8	•		178	james_alm		Defect Defect
8				james_alm		Defect
				peter_alm		Defect
		-		mary_alm		Defect
8				mary_aim mary_aim	Internet Explorer	Defect

8

# **Analyzing ALM Data**

HP Application Lifecycle Management (ALM) reports and graphs help you assess your application lifecycle management process. You can generate reports and graphs at any time during the process.

You can create project reports in the Analysis View module that enable you to design and generate versatile reports containing information from the ALM project.

You can create graphs either in the Analysis View module, or during your work in the Requirements, Test Plan, Test Lab, Business Components, or Defects modules. In either case, you can save the graphs in the Analysis View module for future reference.

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

#### In this lesson, you will learn about:

- ► Generating Project Reports on page 142
- ➤ Generating Predefined Standard Reports on page 148
- ► Generating Graphs on page 151
- ► Generating Dashboard Pages on page 161

# **Generating Project Reports**

Project reports enable you to compile versatile reports of project data.

In a project report, you define sections and sub-sections, each listing records of a specified ALM entity.

To each report section, you assign a template that determines the fields and layout of the section. You also assign document and style templates that determine the overall report appearance.

In this exercise, you will create a report of tests with their linked defects.

### To generate a project report:

### **1** Open the ALM\_Demo project.

If the **ALM\_Demo** project is not already open, log in to the project. For more information, see "Starting ALM" on page 18.

**2** Display the Analysis View module.

On the ALM sidebar, under **Dashboard**, select **Analysis View**.

### **3** Add a folder to the Private root folder.

- **a** In the tree, select the **Private** folder.
- **b** Click the **New Folder** button. The New Folder dialog box opens.
- c Under Folder Name, type My\_Analysis\_Items.
- **d** Click **OK**. The new folder is added as a sub-folder of the Private folder. The Details tab displays the folder name and the user that created the folder.
- e In the Description tab, type This folder includes my demo analysis items.

### **4** Create a project report.

- **a** Click the **New Item** button and select **New Project Report**. The New Project Report dialog box opens.
- **b** In the Project Report Name box, type Reviewed tests and linked defects.





Details Configuration View	
🖄 💥 🏠 🤴 🖓 Preview	Generate l 🖀 Template Creator
Document	- Document Output Options     Output Format : Html     -Document Templates     Document Template : Document Template     Style Template : Style Template     History Template : History Template     -Document Additional Options :     Auto-Update Table of Contents (This option increases generation time)     Embed Text and Image Attachments     Select a Baseline :

The Configuration tab is selected.

**5** Add a main section to report.



- **a** Click the **Add Report Section** button. The Add Report Section dialog box opens.
- **b** Under **Type**, select **Tests**. The default section name **Tests** displays in the **Name** field.

Add Report Sec	tion		X
Type Tests			•
Name Tests			
<u>0</u> K	<u>C</u> ancel	<u>H</u> elp	

**c** Click **OK**. The **Tests** section is added to the report tree, under the **Document** root folder.

- **6** Add a sub-section to the report.
  - **a** In the report tree, right-click the **Tests** section, and select **Add Report Section**.

In the Add Report Section dialog box, you can select an entity related to the main section.

**b** Under **Type**, select **Defects**. The **Relationship** field describes the nature of the relationship between the tests and defects. The default section name Linked Defects displays in the **Name** field.

Add Report Section	า		×
Type Defects			•
Relationship Linked Defects			•
Name Linked Defects			
<u>0</u> K	<u>C</u> ancel	<u>H</u> elp	۰.

**c** Click **OK**. The **Linked Defects** section is added to the report tree, under the **Tests** section.
- **7** Configure document settings.
  - **a** In the report tree, select the **Document** root node.

Details Configuration View	
🖀 💥 🏠 🤴 🖓 Previ	ew 🗃 Generate 🕌 Template Creator
Document	-Document Output Options
Linked Defects	Output Format : Html 💌
	-Document Templates
	Document Template : Document Template 💌 🔛
	Style Template : Style Template 💌 🔛
	History Template : History Template 💌 📴
	- Document Additional Options :
	□ Auto-Update Table of Contents (This option increases generation time)
	Embed Text and Image Attachments
	Select a Baseline :

- **b** In the right pane, in the **Output Format** field, select **PDF**.
- **c** Under **Document Templates**, you assign templates that affect different areas of the report.

Template Type	Description
Document Template	Defines fields on the title page, headers and footers, page orientation, and other document layout settings.
Style Template	Defines formatting of report elements. For example, tables, headings, and paragraphs.
History Template	Defines the style in which history information is displayed in report sections.

Default templates are assigned to the different template types. Additional templates can be designed by the project administrator in Project Customization.



**d** Click the **Edit Document Field Values** button alongside the Document Template field. The Edit Document Template Field Values dialog box opens.

Edit Document Temp	late Field Values	×
- Choose A Field Field Names Project Title1 summary Author	Field Value Project	
	<u>OK C</u> ancel <u>H</u> elp	<b>V</b>

The dialog box enables you to type values for fields in areas such as the title page, headers and footers, as defined in the document template.

**e** For each field name, type the following values:

Field Name	Field Value
Project	ALM Demo Project
Title1	Interim Report
summary	An interim report of reviewed tests and their linked defects.
Author	Alex ALM

f Click OK.

- **8** Configure the Tests report section.
  - **a** In the report tree, select the **Tests** section.

Details Configuration View	
摿 🗙 🏠 🦊 📿 Previ	ew 🗃 Generate  🖆 Template Creator 🗸
□- Document □- [Tests] Linked Defects	- Report Section Details Name : Tests Entity : Tests Relationship Type : None - Template Details  O Project Template : Test Template Custom Template : Filter

- **b** Under **Report Section Details**, in the **Name** field, rename the section **Reviewed Tests**. The section name is used as the section title in the report.
- c Under Template Details, make sure Project Template is selected.
- **d** Click the arrow, and select **Test Template created by Alice**. The template you assign to the section determines the section format, and the entity fields displayed in the section.
- **e** Under Filter, click the **Set Filter/Sort** button. The Filter Tests dialog box opens.
- **f** Click the arrow adjacent to the **Reviewed** field.
- **g** In the Select Filter Condition dialog box, select **Reviewed**, and click **OK**.
- **h** Click **OK** to close the Filter Tests dialog box.
- **9** Configure the Linked Tests report section.
  - **a** Select the **Linked Defects** section.

 $\nabla$ 

**b** Click the arrow alongside **Project Template**, and select **Defect Tabular Template**. Tabular templates display records in rows of a table.

#### **10** Generate the report.

Click **Generate**. A dialog box opens, displaying the progress of the report generation.

When the report is ready, a PDF reader opens, displaying the report results.

# **Generating Predefined Standard Reports**

Predefined standard reports enable you to generate reports of your data in the Requirements, Test Plan, Test Lab, Business Components, and Defects modules, while working in those modules. You can either choose from a list of predefined reports, or you can create reports on selected records for immediate display.

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

In this exercise, you will generate a standard report from the Requirements module and save it in the Analysis View module.

#### To generate a predefined standard report:

- **1** Display the Requirements module.
  - **a** On the ALM sidebar, under **Requirements**, select **Requirements**.
  - **b** If the Requirements Tree view is not already displayed, choose View > Requirements Tree.

#### **2** Generate a report.

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

B	Standard Requirement Report				_ 🗆 ×
Ē	Generate 💼 🕶 💾 🔹 🛛 1 - 5 of [23				_
R	equirements Report				
	Req ID (0) - Requirements				
	Author:		Creation Time:	2:34:58 PM	
	Creation Date:	10/05/2006	Name:	Requirements	
	Modified:	7/18/2010 9:51:04	Priority:		
		AM	RBQM business impact:		
	Product:		RBQM custom failure probability:		
	RBQM custom business impact:		RBQM custom Risk:		
	RBQM custom Functional		RBQM custom testing level:		
	Complexity:		RBQM effective business impact:		
	RBQM custom testing nours:		RBQM effective Functional Complexity:		
	RBQM Date of last Analysis:		RBQM estimated RnD effort:		
	RBQM effective failure probability:		RBQM failure probability:		
	RBQM effective Risk:		RBQM Risk:		
	RBQM Exclude from analysis:		RBQM testing level:		
	RBQM Functional Complexity:		RBQM use custom failure probability:		
	RBQM testing nours:		RBQM use custom results:		
	RBQM use custom business		Req ID:	0	-
1.5	at Generated: 10/12/2010 11:40:47 AM			- • •	
Ld	st Generated, 10/13/2010 11:40:47 AM				
		Save	Cancel <u>H</u> elp		
2.1520					Contraction to the second

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

- **3** Save the report in the Analysis View module.
  - **a** Click **Save**. The New Standard Report dialog box opens.

🖹 New Standard Report	_ 🗆 🗡
Standard Report Name:	
Standard Requirement Report	
Select Folder	New Folder
Save <u>C</u> ancel	

**b** Under Select Folder, expand the Private folder, and select My\_Analysis\_Items. Click Save.

The Analysis View module opens, and the report displays under the View tab.

# **Generating Graphs**

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

After creating a graph, you can share the graph for viewing in a Web browser outside ALM.

This section includes:

- ► Generating Graphs in the Analysis View Module
- ► Generating Predefined Graphs
- ► Sharing Graphs

### **Generating Graphs in the Analysis View Module**

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

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

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

#### To generate a graph in the Analysis View module:

#### **1** Make sure the Analysis View module is displayed.

If the Analysis View module is not displayed, on the ALM sidebar, under **Dashboard**, select **Analysis View**.

#### **2** Open the graph wizard.



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

Step 1 of 4: Select G	raph Type	×
	Entity: Defects Graph Type ③ Summary Graph	Defects - Summary Graph
Application Lifecycle Management Graph wizard	<ul> <li>Progress Graph</li> <li>Trend Graph</li> <li>Age Graph</li> <li>Description</li> <li>The Defects - Summary Graph shows a summary of the number of defects in a project, or the estimated/actual amount of time taken to fix these defects. The information is displayed according to the criteria that you specify. You can specify the type of data displayed along the <i>y</i>-axis, the type of data displayed along the <i>y</i>-axis, and the defect information by which data is grouped.</li> </ul>	Assigned To
		<u>C</u> ancel <u>&lt; B</u> ack <u>N</u> ext > <u>H</u> elp

- **3** Select the graph type.
  - **a** Under **Entity**, select **Defects**.
  - **b** Under **Graph Type**, make sure **Summary Graph** is selected.
- **4** Select the projects to include.

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

**a** Click Next. The Select Projects dialog box opens.

	t Selection Jse <u>C</u> urrent Pr Jse <u>S</u> elected F	oject Projects Select	Defects - Summary Graph
Contraction Application Lifecycle Management Graph wizard	nain FAULT	Project ALM_Demo	store of the second sec

- **b** You can include data from multiple projects in the graph. For this exercise, we will use only the current project. Make sure **Use Current Project** is selected.
- **5** Define a filter to view defects with high to urgent priority.
  - **a** Click **Next**. The Select Filter dialog box opens.

Step 3 of 4: Select Filt	ter	×
	Filter Selection	Defects - Summary Graph
Application Lifecycle Management Graph wizard		Assigned To

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

- **c** Click the browse button adjacent to the **Priority** field. The Select Filter Condition dialog box opens.
- **d** In the right pane, select the logical expression >=.
- e In the left pane, select **3-High**.

Condition:	>= 3-High	Clear

- **f** Click **OK** to close the Select Filter Condition dialog box.
- **6** Define a filter to view defects that are not closed.
  - **a** Click the browse button adjacent to the **Status** field. The Select Filter Condition dialog box opens.
  - **b** In the right pane, select the logical expression **Not**.
  - **c** In the left pane, select **Closed**.

o 10	Net Cleved	Class
Londition:	NOT LIOSED	Liear

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

#### 7 Set the graph attributes.

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

Group By field:       Image: Constant on the provided of the provided	Step 4 of 4: Select G	raph Attributes	×
X-axis field Application Lifecycle Management Graph wizard Assigned To X-axis field Assigned To X-axis field Assigned To Assigned To		Group By field: <none></none>	Defects - Summary Graph
	Application Lifecycle Management Graph wizard	X-axis field: Assigned To	stand of the second sec

- **b** Under **Group By field**, make sure that it is set to **<None>**.
- **c** Under **X**-axis field, select **Priority** to view the number of defects by priority.

#### **8** Generate the Graph.

Click **Finish**. The graph is displayed in the graph window.



The graph shows a summary of defects with **High** to **Urgent** priority, whose status is not **Closed**.

- **9** Save the graph in the Analysis View module.
  - **a** Click **Save**. The New Graph dialog box opens.

📊 New Graph	
Graph Name:	
Defects Summary Graph - by 'Priority'	
Select Folder	New Folder
⊕- <mark>⊂a</mark> Private ⊕- <mark>⊂a</mark> Public	
Save <u>C</u> ancel	_

- **b** Expand the **Private** folder, and select **My\_Analysis\_Items**.
- **c** Click **Save**. The Defects Summary graph is saved in the analysis tree, and displayed in the View tab.

#### **10** Display additional defect details.

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

Defect	s S	ummary Graph - by	Priority' Chart Drill-	Down. X-Axis: 3-High,	Group-B	y: <total>,</total>	. 10
8	I 🏲	Actual Fix Time	Assigned To	Browser	Catego	лу	CI
8 📭	L		james_alm	Internet Explorer	Defect		
8 🔎	L		james_alm		Defect		
8			peter_alm		Defect		
8	P		mary_alm		Defect		
R			marv alm	Internet Explorer	Defect		
•							
Descr	iptia	n:		Comments:		Add Comr	ment
Test S Test:   Run: F Step: : Descr 1. Seli 2. For	iet: I 1 ]D Cun_ Step iptic ect f	Mercury Tours Func eparting Date 9-2_10-26-57 5 1: Past Departing D n: he One Way option. departing flight, sele	tionality 4				

**b** Close the Drill Down Results dialog box.

#### **11** Display other graph views.

- **a** Click the **Pie Chart** button to display the graph as a pie chart.
- **b** Click the **Data Grid** button to display the data as a grid.

## **Generating Predefined Graphs**

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

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

To generate a predefined graph:

**1** Display the Defects module.

On the ALM sidebar, select **Defects**.

**2** Clear the Defects grid filter.

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





#### **3** Generate a report.

Choose **Analysis > Graphs > Defects Summary - Group by Status**. The graph window opens, displaying the selected graph.



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

#### **4** Close the graph window.

Click the **Cancel** button.

# **Sharing Graphs**

You can allow ALM users or others to view read-only versions of graphs outside ALM. Each time you access the graph outside ALM, it displays the most up-to-date information.

In this exercise, you will share the Defects Summary graph you created in the Generating Graphs in the Analysis View Module exercise.

#### To share a graph:

**1** Display the Analysis View module.

On the ALM sidebar, under Dashboard, select Analysis View.

- **2** Share the Defects Summary graph.
  - **a** In the **Private** folder, under **My\_Analysis\_Items**, select **Defects Summary Graph by 'Priority'**.
  - **b** Right-click the graph, and select **Share Analysis Item**. The Share Analysis Item dialog box opens.



- **c** Select **Copy Analysis Item Public URL**. This option allows others to view the graph without entering ALM user credentials.
- **d** Click **OK**. A URL of the graph is saved to the clipboard.

#### **3** View the graph outside ALM.

- **a** Open a Web browser window.
- **b** In the address bar, paste the clipboard content, and press ENTER. The graph is displayed in the Web browser.



Below the graph, the **Last Generated** date and time is displayed, and a link to the item in ALM.

# **Generating Dashboard Pages**

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

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

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

To generate a dashboard page:

**1** Display the Dashboard View module.

On the ALM sidebar, under **Dashboard**, select **Dashboard View**.

- **2** Add a page to the Public folder.
  - **a** In the tree, select the **Public** folder.
  - **b** Click the **New Page** button. The New Dashboard Page dialog box opens.
  - c In the Dashboard Page Name field, type Summary of Defects page.
  - **d** Click **OK**. A dashboard page is added to the dashboard tree under the Public folder.
- **3** Select the graphs that you want to include in the dashboard page.
  - **a** Click the **Configuration** tab.
  - **b** In the Graphs Tree pane, expand the **Public** folder.



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



- **d** Double-click the first graph. A placeholder for the graph is created in the Configuration tab displaying the graph's title.
- **e** Add the other three graphs to the dashboard page.

Details Configuration View	
Unresolved Defects (all themes) Per Cycle	Graphs Tree
Unresolved Defects (all themes) Per Person	Defects     Unresolved Defects (all theme     Unresolved Defects (all theme     Unresolved Defects (all theme     Unresolved Defects (all theme     Event Remonts
Unresolved Defects (all themes) Per Severity	B Requirements B Tests Execution B Themes Control Active Defects (all themes) Control Release 10.5 - QA (No
Unresolved Defects (all themes) Per Subject	

- **4** Rearrange the dashboard page.
  - **a** Select the second placeholder and drag it upwards so that it is alongside the first placeholder.
  - **b** Select the fourth placeholder and drag it upwards so that it is alongside the third placeholder.

Details Configuration View		
Unresolved Defects (all themes) Per Cycle	Unresolved Defects (all themes) Per Person	Graphs Tree
Unresolved Defects (all themes) Per Severity	Unresolved Defects (all themes) Per Subject	

- **5** View the dashboard page.
  - **a** Click the **View** tab. ALM generates and displays the graphs in the View tab.



The dashboard page displays the unresolved defects per cycle, per person, per severity, and per subject.

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

8

9

# **Creating Libraries and Baselines**

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

You create libraries in the Libraries module.

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

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

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

#### In this lesson, you will learn about:

- ► Creating Libraries on page 166
- ► Creating Baselines on page 168
- ► Comparing Baselines on page 170

# **Creating Libraries**

In this exercise, you will add a library of tests and requirements to ALM. To perform this exercise you must log in as alex\_alm.

#### To create a library:

#### **1** Make sure to log in to ALM\_Demo as alex\_alm.

Open the HP ALM Login window. In the **Login Name** box, type **alex\_alm**. Skip the **Password** box.

For more information, see "Starting ALM" on page 18.

#### **2** Display the Libraries module.

On the ALM sidebar, under Management, select Libraries.

#### 3 Create a library folder.

- **a** In the libraries tree, select the root **Libraries** folder. Click the **New Folder** button. The New Library Folder dialog box opens.
- **b** In the Library Folder Name box, type Folder1.
- c Click OK. The Folder1 folder is added to the libraries tree.
- **d** In the **Description** box in the right pane, type the following description for the library folder: This folder contains a library of tests and requirements.



**4** Add a library to your library folder.



🚇 New Library		_ 🗆 🗙
🗙 🖑 ይ 🗄		-
Library ID: * Name	:	
Details	Requirements Resources Components Tests	
Content	G T.	
8	■ Fill Requirements	
	<u>D</u> K Close <u>H</u> elp	

- **b** In the **Name** box, type Library1.
- **c** In the **Requirements** tab, expand the **Requirements** root folder. Select the check box adjacent to the **Mercury Tours Application** folder, to include the folder in the library.
- **d** Click the **Tests** tab. Make sure the **Tests in selected folders** option is selected. Expand the **Subject** root folder, and select the **Mercury Tours Site** folder to include in the library.
- e Click **Details** on the sidebar. In the **Description** box, type This library includes tests and requirements.
- **f** Click **OK**. The new library is added to the libraries tree.



## **Creating Baselines**

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

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

#### To create a baseline:

#### **1** Make sure the Libraries module is displayed.

If the Libraries module is not displayed, on the ALM sidebar, under **Management**, select **Libraries**.

#### **2** Add a baseline to your library.

- **a** In the libraries tree, select the **Library1** library.
- **b** Click the **Create Baseline** button. The Baseline Verification dialog box opens, and a verification process begins.

Baseline Verification	X
💾 Save Log	•
Verification results:	
<b>baseline expected content :</b> Tests : 12 Components : 0 Requirements : 140 Resources : 0	
Continue <u>C</u> ancel <u>H</u> elp	



The Verification results window displays the results of the library size verification. The process checks that the size of the library does not exceed the limit defined in Site Administration.

- c Click Continue. The New Baseline dialog box opens.
- **d** In the **Baseline Name** field, type **Baseline1**. Click **OK**. The baseline is added to the libraries tree, and the creation process begins.

Libraries Edit View	
📑 🖗 🖗 🕸 · 🗶 📋 🗙 🥥 🔽 · 🗦 🗸	Details
Elibraries Folder1 B-B Library1 Baseline1	Name:         Baseline1         Baselin         1006           Create         Creatio         10/11/2010 9:56:5           Modified:
	The Baseline is being created View log
	Description

The baseline is created in a background process, and may take some time. You can continue working in ALM during the baseline creation process.

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

#### **3** View the baseline log file.

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

The View Log button is no longer displayed.

# **Comparing Baselines**

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

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

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

#### To compare baselines:

#### **1** Modify a requirement.

- a On the ALM sidebar, under Requirements, select Requirements.
- **b** Select **View** > **Requirement Details**.
- c In the requirements tree, under Mercury Tours Application, expand Application Usability. Select Keyboard Support.
- **d** Click the **Test Coverage** tab. The Test Coverage tab displays coverage for this requirement.
- 🔂 Select
- e If the Test Plan Tree tab on the right is not displayed, click the **Select Tests** button.
- **f** In the Test Plan Tree tab, expand the **Mercury Tours Site** and **HTML Pages** subject folders.
- **g** Double-click the **HTML Page Source** test. The test is added to the coverage grid.

#### **2** Create a new baseline.

Repeat Steps 1 and 2 on page 168. Name your new baseline Baseline2.

- **3** Select a baseline with which to compare.
  - **a** In the libraries tree, select **Baseline1**. Click the **Compare To** button, and select **Select Baseline** to compare the baseline with another baseline. The Select Baseline dialog box opens.
  - **b** Click the arrow and select **Baseline2** from the list. Click **OK**.
  - **c** Click **OK** to close the Select Baseline dialog box. Click **Yes** to close the Warning dialog box. The Compare Baselines Tool dialog box opens.

Dompare Baselines To	ol		
Requirements	矛 • 표		-
E Tests	Baseline:Baseline1 (Library:Library1)  No changes  Entities  @ Mercury Tours Application	Baseline:Baseline2 (Library:Library1) A	د d0 Changes
	Close <u>H</u> elp		

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



**4** View requirement changes between the baselines.



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

Dempare Baselines Too	bl					- 🗆 ×	
Requirements	💤 🕂 🕮					-	
🞽 Tests	Baseline:Baseline1 (Library:Library1)	١ſ	Baseline:Baseline2 (Library:Library1)				
			# 1			-	
	No changes		Added:0 Modified:1 Deleted:0 Moved:0				
	Entities		Entities		Changes	-	
	⊕		🕀 💿 Application Se	curity			
	🖃 💿 Application Usability		🖃 💿 Application Us	ability			
	⊕	11.		rror Mes			
				nd Lang.			
			🕀 💿 Task Simp	dicity			
			⊕⊚ Web Pag	e Structu.			
			🖽 💿 Booking Syste	m			
				Bookin			
				Informa			
			🕀 💿 Profile Manage	ement			
	⊕			lanage			
	¥					-	
		_					
	Close Help						
	<u>ciose</u> <u>T</u> eib						

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

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



c Click the Test Coverage button on the sidebar.

求 Details	Show full	path	
Attachments	Changes	Keyboard Support in "Baseline1"	Keyboard Support in "Baseline2"
Requirement Traceability		🐤 Welcome Page	🐤 Welcome Page
Toot Coverage		HTML Page Layout	By HTML Page Layout
L rescoverage		🗦 Tab Order	📑 Tab Order
		By Forms	By Forms
	Added		HTML Page Source
	Changes	Keyboard Support in "Baseline1"	Keyboard Support in "Baseline2"
		Welcome Page	Welcome Page
		HTML Page Layout	HIML Page Layout
		HTML Page Layout Tab Order	Tab Order
		HTML Page Layout Tab Order Forms	HIML Päge Layout Tab Order Forms
	Added	HTML Page Layout Tab Order Forms	HIML Page Layout Tab Order Forms HTML Page Source
	Added	HTML Page Layout Tab Order Forms	HIML Page Layout Tab Order Forms HTML Page Source

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

d Click Close.

Lesson 9 • Creating Libraries and Baselines

# 10

# **Customizing Projects**

In the previous lessons, you learned how to use HP Application Lifecycle Management (ALM) to help you manage all phases of the application lifecycle management process, including specifying releases and cycles, specifying requirements, planning tests, running tests, and tracking defects.

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

You can also customize your ALM project by modifying system fields or by adding user-defined fields. **System fields** are ALM default fields. You cannot add or delete system fields, you can only modify them. **User fields** are fields that you can define. You can add, modify, and delete user-defined fields.

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

#### In this lesson, you will learn about:

- ► Starting Project Customization on page 176
- ► Adding a New Project User on page 179
- ► Assigning a User to a User Group on page 182
- ➤ Defining a User-Defined Field on page 184
- ► Creating a Project List on page 186

# **Starting Project Customization**

You customize your ALM 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 ALM Login window.

Make sure that the ALM Login window is open. For more information, see "Starting ALM" on page 18.

- **2** Type a user name with project administrator privileges and authenticate.
  - **a** In the **Login Name** box, type **alex\_alm**.
  - **b** Skip the **Password** box. A password was not assigned to this user name.
  - **c** Click the **Authenticate** button. ALM verifies your user name and password and determines which domains and projects you can access.

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

- **a** In the **Domain** list, select **Default**.
- **b** In the **Project** list, select **ALM\_Demo**.
- **c** Click the **Login** button.

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

#### **4** Open the Project Customization window.

Choose **Tools** > **Customize** on the ALM masthead. The Project Customization window opens.

Ø	Application Lifecycle M	an	agement – Proje	ct C	Customization		Project: ALM_Dem	no, User: alex_alm	Return
Help	•								
2	User Properties	] [	User Properties						
	Project Users		💾 Save Major C	hang	je 💌 🍤 Ch	iange Passv	vord		
2	Groups and Permissions				1				
	Module Access		User Name:	ale	:x_alm		Full Name:		
	Project Entities			_					
×.	Requirement Types		E-mail:				Phone Number:		
1	Risk-Based Quality Management		Status:		Active		Deactivation		
1	Project Lists		oranto.				Date:		
5	Automail								
٩	Alert Rules								
8	Workflow	٩							
1	Project Planning and Tracking	Þ							
1	Project Report Templates								
	Sprinter								
							•••		
			Description:						

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

Option	Description
User Properties	Enables you to change your user properties. For example, you can change your email address. You can also change your password.
Project Users	Enables you to add and remove users from an ALM project. You can also assign users to user groups to restrict user access privileges.
Groups and Permissions	Enables you to assign privileges to user groups by specifying permission settings.
Module Access	Enables you to control the modules that each user group can access. By preventing users from accessing unnecessary modules, you can better utilize your ALM licenses.

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

Option	Description
Project Planning and Tracking	Enables you to create and customize the project planning and tracking (PPT) KPIs. <b>ALM Editions:</b> The Project Planning and Tracking link in Project Customization is not available for Quality Center Starter Edition and Quality Center Enterprise Edition.
Project Report Templates	Enables you to create and customize report templates that project users can assign to template based reports.
Sprinter	Enables you to configure settings for working with HP Sprinter for manual testing in ALM. <b>ALM Editions:</b> The Sprinter link in Project Customization is not available for Quality Center Starter Edition and Performance Center Edition.

# **Adding a New Project User**

You can control access to an ALM 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 ALM 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 ALM tasks.

In this exercise, you will add a new project user to the ALM\_Demo project.

**Note:** For the purpose of the exercise, we will first remove a user from the project, and then add the user to the project again.

To add a new project user:

**1** Make sure that you are logged in to ALM as a project administrator.

For more information on how to open the Project Customization window, see "Starting Project Customization" on page 176.

#### **2** Open the Project Users page.

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

Project Users					
💾 Save Major Change 🔽 🕂 Add User 👻 Remove User					
<b>.</b>	Name alex_alm	Full Name	Details Membership		
*	alice_alm cecil_alm		User Name: alex_alm Full Name:		
*	james_aim kelly_alm mary_alm		E-mail: Phone Number.		
*	michael_alm paul_alm		Status: Active Deactivation Date:		
*	peter_alm robert_alm shellu_alm				
-	sholy_dim				
			Description:		

#### 3 Remove a user.

In the Project Users list, select **cecil\_alm**, and click **Remove User**. Click **Yes** to confirm.

#### 4 Add a new user name.

**a** Click the **Add User** arrow.

You can 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.
**b** Select **Add User by Name**. The Add User dialog box opens.

Add User			×
User Name:			
	Canaal	Hala	
	<u>L</u> ancel	<u>H</u> elp	

**c** In the **User Name** box, type **cecil\_alm** and click **OK**.

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

Proj	Project Users								
B	🖹 Save Major Change 🔹 💠 Add User 🔹 💥 Remove User 🗸								
2	Name	Full Name	Details Membership						
8	alex_alm								
8	alice_alm								
8	james_alm		User Name: alex_alm Full Name:						
-	kelly_alm								
8	mary_alm		E-mail: Number:						
8	michael_alm		Invariades.						
8	paul_alm		Status: 🔓 Active Deactivation						
2	peter_alm		Date:						
2	robert_alm								
2	shelly_alm								
8	cecil_alm								
			Description:						
			-						

## Assigning a User to a User Group

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

In this exercise, you will assign the new user **cecil\_alm** to the **QATester** user group.

#### To assign a user to a user group:

#### **1** Make sure that the Project Users page is displayed.

If the Project Users page is not already open, click the **Project Users** link in the Project Customization window.

Proj	Project Users							
B	🖺 Save Major Change 🔽 🕂 Add User 👻 Remove User 🗸							
<b>.</b>	Name	Full Name	Details Membership					
*	alex_alm alice_alm		liser Name: alev. alm Full Name:					
*	kelly_alm marv_alm		E-mail:					
*	michael_alm paul_alm		Status: Active Deactivation					
*	peter_alm robert_alm		- Date.					
<u>.</u>	shelly_alm cecil_alm							
			Description:					
			×					
			<b>_</b>					

#### **2** Select cecil\_alm from the Project Users list.

In the **Project Users** list, select **cecil\_alm**.

#### **3** Display user's membership in user groups.

Click the **Membership** tab. The user groups that cecil\_alm belongs to and does not belong to are displayed.

Pro	Project Users									
R	🎦 Save Major Change 💌 🕂 Add User 👻 Remove User									
	Name alex_alm alice_alm james_alm kelly_alm michael_alm paul_alm peter_alm shelly_alm cecil_alm	Full Name	Details Membership Not Member of TDAdmin QAT ester Project Manager Defect Reporter QA Manager RnD Manager	Member of Viewer						

By default, a new user is assigned to the **Viewer** user group.

**4** Assign cecil\_alm to the QATester group.

>

<

Under **Not Member of**, select **QATester** and click the right arrow button to move the group to **Member of**.

#### **5** Remove cecil\_alm from the Viewer group.

- **a** Under **Member of**, select **Viewer** and click the left arrow button to move the group to **Not Member Of**.
- **b** Click **Save** to save the changes to the Project Users page. Click **OK**.

# **Defining a User-Defined Field**

You can define user-defined fields that are unique to your project, or modify the behavior of ALM system fields.

The fields are stored in ALM 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 176.

#### **2** Open the Project Entities page.

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

Project Entities			
💾 Save Major Change 💌 🗇 New Field 👻 Delete Field			
Image: Section of the system       Settings         Image: Setting s			

- **3** Add a new user-defined field to the Defect entity.
  - **a** Under **Project Entities**, expand **Defect**.
  - **b** Click the **User Fields** folder and click the **New Field** button. A new field is added under the User Fields folder.

🕀 🙀 Baselines	*	Settings		
Business Component     Business Process Model Element     Business Process Model Folders     Business Process Model Paths     Susiness Process Models     Cycle     Defect     System Fields		Name: Label: Type: Length:	BG_USER_06 BG_USER_06 String 40	×
BG_USER_06 Browser	0		☐ History ☐ Masked	Required     Searchable
	000			
⊕ ∰ Library				
Er in Release				
🕀 🛅 Release Folder				
I ⊞- 📁 Resource Folder ⊞ ⊳ Run	-			

**BG\_USER\_nn** indicates a user-defined field under the Defect entity.

- **4** Rename the default field name.
  - **a** In the Label box, instead of the default name, type Database.
  - **b** Click Save.
  - c Click OK.

## **Creating a Project List**

You can associate fields with system and user-defined lists. A list contains values that the user can enter in a field.

In the previous exercise you added the Database field. In the following exercise you will create a list and assign it to the Database field. You will then open the New Defect dialog box to view the new field.

#### To create a project list:

#### **1** Make sure that the Project Customization window is displayed.

For more information on how to open the Project Customization window, see "Starting Project Customization" on page 176.

#### **2** Open the Project Lists page.

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



- **3** Create a new list.
  - **a** Click **New List**. The New List dialog box opens.
  - **b** In the List Name box, type DB. Click **OK** to close the New List dialog box.
- **4** Add Items to your list.
  - **a** Click **New Item**. The New Item dialog box opens. Type **Oracle** and click **OK**.
  - **b** Repeat the same procedure and add **MS SQL** to the DB list.

💾 Save Major Change 💌	New	v List 🔀 Delete L	ist 📒 Rename List		
BBT Business Impact Levels     BBT Failure Probability Levels     BBT Testing Levels     Requirement Status     Requirement Type     Requirements     Resource Location     Resource Type     Review Status     Version Status     Version Status     Version Status     Versions     Vorking Mode     YesNo     DB		New Item	E New Sub-Item	Rename Item	∰ Delete Item

- c Click Save to save the changes to the Project Lists page. Click OK.
- **5** Assign the list to the Database field.
  - **a** In the Project Customization window, click the **Project Entities** link. The Project Entities page opens.
  - **b** Under **Project Entities**, expand **Defect**.
  - c Expand the User Fields folder and select Database.

**d** Under **Settings**, in the **Type** list, select **Lookup List** to set the field type as a drop-down list. The **Lookup list** section is displayed below the field settings.

🕀 🥵 Baselines	-	Set	tings		
🗄 🎰 Business Component					
🗄 😑 Business Process Model Element					
🗄 🛅 Business Process Model Folders 👘		P	lame:	BG_USER_06	
🖶 🛷 Business Process Model Paths		1	ahel:	Database	
🗄 😤 Business Process Models		-		Database	
🗄 🖒 Cycle		T	ype:	Lookup List	-
🖻 🔚 Defect				10	-
🕀 🚞 System Fields		L	ength:	40	
🖻 🔚 User Fields				<b>—</b>	
Browser				History	
				Masked	Searchable
Database		0			
🗄 🐻 KPI		Loc	okup list		
🗄 🚇 Library					
🗄 🧼 Milestone		A	ctivity SI	tatus	New List
🖻 🎯 Release					
🕀 🛅 Release Folder			Verify v	value	
🖻 📓 Requirement			Allow M	Aultiple Values	
🗄 💣 Resource			ANOW N	rumpie values	
🗄 🛅 Resource Folder					
🗄 🕞 Bun	-				

- e Under Lookup List, select the DB list.
- **f** 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.
  - **a** Click the **Return** button located on the upper-right corner of the window.
  - **b** In the Customization Changes dialog box, select **Major Change**, and click **OK**. The Project Customization window closes, and you return to your ALM project.
  - **c** 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. You may need to drag the scroll bar down to display the field.

**d** Click the down arrow and view the database types you defined. Click **Close**.

Lesson 10 • Customizing Projects

# 11

# Conclusion

ALM helps you organize and manage all phases of the application lifecycle management process, including defining releases, specifying requirements, planning tests, executing tests, and tracking defects. Throughout each phase, you can analyze data by generating detailed reports and graphs.



Phase	Description
Release Specifications	Develop a release-cycle management plan to help you manage application releases and cycles more efficiently. You can track the progress of an application release against your plan to determine whether your release is on track.
Requirement Specifications	Define requirements to meet your business and testing needs. You can manage the requirements and conduct multi-dimensional traceability between requirements, tests and defects, across multiple releases and cycles. ALM provides real-time visibility of requirements coverage and associated defects to evaluate quality and business risk.
Test Planning	Based on the project requirements, you can build test plans and design tests. ALM provides a repository for both manual and automated tests.

#### Lesson 11 • Conclusion

Phase	Description
Test Execution	Create a subset of the tests in your project designed to achieve specific test goals. ALM supports sanity, functional, regression, and advanced testing. Execute scheduled tests to diagnose and resolve problems.
Defect Tracking	Submit defects and track their repair progress. Analyzing defects and defect trends helps you make effective "go/no-go" decisions. ALM supports the entire defect lifecycle—from initial problem detection through fixing the defect and verifying the fix.



