

Tutorial

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Welcome to this Tutorial

Welcome to HP Application Lifecycle Management (ALM). ALM empowers organizations 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 HP ALM Performance Center Quick Start.

How This Tutorial is Organized

This tutorial contains the following lessons:

Chapter	Description		
"Introducing HP ALM" on page 10	Introduces you to the application lifecycle management process, and familiarizes you with the ALM user interface and the sample Mercury Tours Web site.		
"Specifying Releases and Cycles" on page 25	Shows you how to define releases and cycles and monitor their progress and quality.		
"Specifying Requirements" on page 29	Shows you how to define requirements, view the requirements tree, and convert requirements to tests.		
"Planning Tests" on page 40	Shows you how to create a test plan tree, define test steps, define test configurations, link test configurations to requirements, and automate manual tests.		
"Running Tests" on page 59	Shows you how to define test sets, schedule test runs, and run manual and automated tests.		
"Adding and Tracking Defects" on page 99	Shows you how to add new defects, update defects, and manage defects.		
"Alerting on Changes" on page 111	Shows you how to keep track of changes made to your requirements, tests, and defects as you perform your project testing.		
"Analyzing ALM Data" on page 116	Shows you how to monitor the application lifecycle management process by creating reports and graphs.		

Chapter	Description		
"Creating Libraries and Baselines" on page 144	Shows you how to create libraries and baselines, and how to compare baselines to track changes in your project.		
"Customizing Projects" on page 151	Shows you how to set up project users, and how to create project fields and lists.		
"Conclusion" on page 166	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:

Specification	Description		
ALM Editions	HP ALM is also available in several editions which provide subsets of ALM functionality — HP ALM Essentials Edition, HP Quality Center Enterprise Edition, HP Quality Center Community Edition, HP Quality Center Express Edition, and HP ALM Performance Center Edition. This tutorial assumes that you are working in HP ALM Edition or HP Quality Center Enterprise Edition. Some of the lessons and exercises in this tutorial are not applicable if you are working in HP ALM Edition, HP Quality Center Community Edition, or HP Quality Center Express Edition. To determine which edition you are using, contact your ALM site administrator.		
	Note: If you are working with the HP ALM Performance Center Edition, refer to HP ALM Performance Center Quick Start.		
ALM Demo Project	• The demo project is available from the ALM Help page (select Help > Demo Project) and is obtained by importing the ALM Demo file using Site Administration. For more information on importing projects, refer to the <i>HP</i> <i>Application Lifecycle Management Administrator Guide</i> .		
	 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. 		
	• ALM projects can be version controlled. Some of the screenshots in this tutorial assume a version-controlled project, and display additional icons and options. For more information on version control, refer to the <i>HP Application Lifecycle Management User Guide</i> .		
	• This tutorial also contains steps related to functional testing. Functional testing is relevant only if you are using ALM Edition with the Lab Management extension enabled. For details on enabling project extensions, refer to the <i>HP Application Lifecycle Management Administrator Guide</i> . Running automated tests also assumes that you have a working UFT host set up for your project. For more details, see HP Unified Functional Testing below.		

Specification	Description
Mercury Tours	 Mercury Tours is a sample application that simulates a Web-based site for reserving flights, hotel rooms, car rentals, cruises, and vacation deals. Mercury Tours is available at http://newtours.demoaut.com/.
HP Unified Functional Testing	 To run the automated tests in this tutorial, Unified Functional Testing (UFT) must be installed. To integrate ALM with UFT, download and install the HP UFT add-in and the HP ALM Connectivity tool from the HP Application Lifecycle Management Tools page. For details on ALM tools, refer to the HP Application Lifecycle Management Installation and Upgrade Guide.
HP Sprinter	 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. 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 and Upgrade Guide.

Chapter 1: Introducing HP ALM

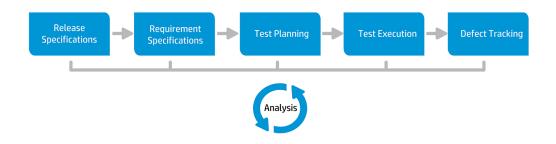
ALM helps you organize and manage all phases of the application lifecycle management process, including defining releases, specifying requirements, planning tests, executing tests, and tracking defects.

In this lesson, you will learn about:

٠	The Application Lifecycle Management Process	.11	
•	Starting ALM	. 11	
•	ALM Window	. 14	
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The Application Lifecycle Management Process

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



Phase	Description		
Release Specifications	Develop a release-cycle management plan to help you manage application releases and cycles efficiently.		
Requirement Specifications	Define requirements to meet your business and testing needs.		
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 8.

2. Open the Application Lifecycle Management Options window.

Open your Web browser and type your ALM URL:

http://<ALM 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.



- ALM Desktop Client 🗳
- 🔹 Lab Management 🗳
- Site Administration
- Tools
- Readme
- 3. Open ALM.

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

Note:

- Windows 7/8/2008R2/2012: 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 Addins page. For more information on add-ins, refer to the *HP Application Lifecycle Management Installation Guide*.

The ALM Login window opens.

(IP)	Applicat	ion Lifecycle	Management		
	Name:				
	Password:				
		Automatically log in and project on this r	to my last domain nachine		
		Forgot password	Authenticate		
	Domain:				
	Project:				
			Login		

Note: If ALM was configured for external authentication, the Name and Password fields do

not appear in this window. Continue with step 5.

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.

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.

Tutorial Chapter 1: Introducing HP ALM

To explore the ALM window:

1. Explore the ALM modules.

Click the following sidebar buttons:

Button	Description
	 Includes the following modules: Analysis View. Enables you to create graphs and reports. Dashboard View. Enables you to create dashboard pages, in which you can view multiple graphs in a single display.
Management ¥	 Includes the following modules: Releases. Enables you to define releases and cycles for the application management process. Libraries. Enables you to define libraries to track changes in your project, reuse entities in a project, or share entities across multiple projects.
Requirements ×	 Includes the following modules: Requirements. Enables you to manage requirements in a hierarchical tree-structure. Requirements can be linked to other requirements, tests, or defects. 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.

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.
	• Test Plan . Enables you to develop and manage tests in a hierarchical tree-structure. Tests can be linked to requirements and defects.
	• Test Lab . Enables you to manage and run tests. After running tests, you can analyze the results.
	• Test Runs . Enables you to view the results of executed tests.
Defects	Enables you to add defects, determine repair priorities, repair open defects, and analyze the data.

2. Explore the common ALMelements.

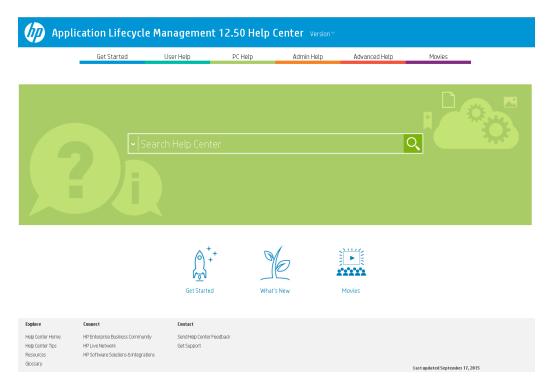
All the ALM modules have common elements. For example, click the **Defects** sidebar button. Each of the ALM modules contains the following key elements: ALM common toolbar. This toolbar is accessible from all modules and contains the following buttons:

Button	Description
< >	Navigates to your previous/next view in ALM.
© ~	Provides commands that you can run from each of the ALM modules.
Help	Enables you to open the HP ALM online help and additional online resources. It also enables you to display version information for each ALM client component.
<domain, project, user></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 $\ensuremath{\text{Defects}}$ sidebar button. The

Defects module is displayed. Click ? . The help topic opens in a separate window.

b. To view the Application Lifecycle Management Help Center home page, click the masthead or click Help Center Home under Explore in the footer. The ALM Help Center home page opens.



The ALM Help consists of guides and references, available online, in PDF format, or both.

- c. Select **Get Started > Content & PDFs** to show the help, movies, and other resources.
- d. Click the Close (x) button.

The Mercury Tours Sample Web Site

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

To explore Mercury Tours:

1. Open the Mercury Tours application.

Open a separate instance of your Web browser, and go to the following URL: http://newtours.demoaut.com/

The Mercury Tours home page opens.



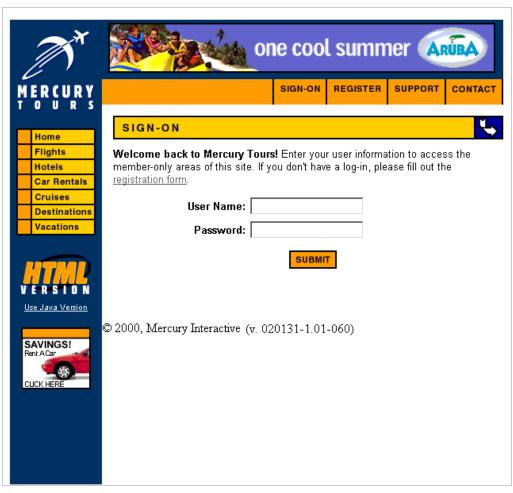
2. Register with Mercury Tours.

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.
Destinations Vacations	Contact Information
Vacations	First Name:
	Last Name:
VERSION	Phone:
<u>Use Java Version</u>	Email:
	Mailing Information
SAVINGS! Rent 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.



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

M	one cool summer ARUBA
	SIGN-OFF ITINERARY PROFILE SUPPORT CONTACT
Home Flights Hotels Car Rentals	FLIGHT FINDER Use our Flight Finder to search for the lowest fare on participating airlines. Once you've booked your flight, don't forget to visit the Mercury Tours Hotel Finder to reserve lodging in your destination city.
Cruises Destinations Vacations	Flight Details Type: Round Trip One Way Passengers: T Departing From: Acapulco View Calendar
Use Java Version SAVINGS! Rent ACar CUCK HERE	On: May 20 View Calendar Arriving In: Zurich Returning: May 21 View Calendar Preferences Service Class: © Economy class © Business class © First class Airline: No Preference
	CONTINUE

4. Reserve a flight.

Follow the on-screen instructions to reserve a flight.

5. End your Mercury Tours session. Click **Sign-off**.

Chapter 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.

Note: This lesson is not available for HP ALM Essentials Edition, HP Quality Center Community Edition, and HP Quality Center Express Edition.

In this lesson, you will learn about:

•	Defining Releases and Cycles	
•	Viewing Releases and Cycles	27

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 11.

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.
 - 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 month 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.

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.

Progress Quality			
Total days in release: Remaining days in release: Total test instances for release: Remaining test instances to run: Required execution rate (test instances/day): Actual execution rate (test instances/day):		62 61 0 0.00 0.00	N/A
100% 80% 60% 40% 20%	Coverage Progress		
Cycle 1 - New Features	Cycle Assigned requirements	Exec	Cycle 2 - Full

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.

Chapter 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	. 30
•	Viewing Requirements	33
•	Converting Requirements to Tests	.35

Defining Requirements

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

Note: If you are using HP ALM Essentials Edition, HP Quality Center Community Edition, or HP Quality Center Express 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 11.

- 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	
🗙 🔩 🛃 💼	
• Name:	• Requirement Type: 🔘 Undefin 🗐 💌
Details	Details
Rich Text Attachments	Author: alex_alm V Creation Date:
	Creation Time: Direct Cover
	Modified: Old Type (obs
	Priority: V Product: V
	Description Comments
	B I ⊻ A 💩 🗮 🗄 🖽 🗇 🕫 👘 🏀 🔍 🖾
	Submit Close Help

- b. In the 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.

Note: If you are using HP ALM Essentials Edition, HP Quality Center Community Edition, or HP Quality Center Express 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 Name box, type Cruise Search.
 - d. In the Requirement Type box, select Functional.

Note: If you are using HP ALM Essentials Edition, HP Quality Center Community Edition, or HP Quality Center Express 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.
- 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 Name box, type Cruise Booking.
 - d. In the Requirement Type box, select Functional.

Note: If you are using HP ALM Essentials Edition, HP Quality Center Community Edition, or HP Quality Center Express Edition, ignore this step.

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

Priority: 4-Very High

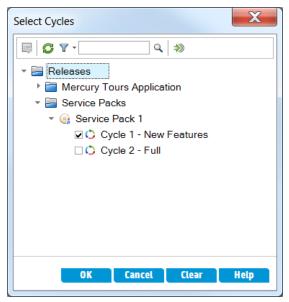
Product: Mercury Tours Web Site

- 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.

7. Assign the requirements to a cycle.

Note: If you are using HP ALM Essentials Edition, HP Quality Center Community Edition, or HP Quality Center Express 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, 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 requirement and its sub-requirements to the cycle.
- 8. Assign additional requirements to a cycle.

Note: If you are using HP ALM Essentials Edition, HP Quality Center Community Edition, or HP Quality Center Express 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 requirement and its sub-requirements to the cycle.

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 **Zoom** and choose **Zoom In**. The requirements tree displays only the child requirements of **Cruise Reservation**.

Requirem	ents Edit View	/ersions Favorites	Analysis	
📑 🔞 🗙	🖄 🎍 🔁 🛛 - [R 0 @ # ∞ -	▶ 🍳 🏫 - 🦊	r 🗐
No Filter D	efined			
Zoomed in	to:			
0 🛚 单 🏲	Name	Direct Co	over Author	Req ID
	🕯 🌳 Cruise Search	⊽ Not Cov	ered alex_alm	366
	🗅 🍚 Cruise Booking	Not Cov	ered alex alm	367

- c. To reverse the zoom-in action and display the entire requirements tree, click **Zoom** 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.

- 5. Define a filter to view requirements created on a specific date.
 - a. Click the **Filter** button. The Filter dialog box opens.

Filter requirements	x
7 🔁 🖺	
No Filter Defined	
Requirement Type:	
Hide Risk-Based Quality Management fields	
Filter Cross Filter View Order Group	
Field Name / Filter Condition Author Creation Date	
Creation Time	
Direct Cover Status	
Modified	
Name	
Old Type (obsolete)	
Priority	
Product	
RBQM custom failure probabili	
RBQM custom Functional Com	
RBQM custom Risk	~
<u>O</u> K <u>C</u> ancel <u>H</u> elp	

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.

Selec	t Filte	er Co	nditi	on				×
Cond	dition	1	0/21/2	2013				Clear
•] (Octo	ber,	201	3	F	[Today] [Yesterday]	And And
Sun	Mon	Tue	Wed	Thu	Fri	Sat	[PreviousWee [PreviousMon]	
29	30	1	2	3	4	5	[Previousivion]) Not ≡
6	7	8	9	10	11	12	[Tomorrow]	>
13	14	15	16	17	18	19	[ThisWeek]	<
20	21)	22	23		25	26	[ThisMonth]	>=
27	28	29	30	31	1	2		<= 🔻
3	4	5	6	7	8	9		
							OK Concol	Holp
							OK Cancel	Help

- 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.

Requirement	nts Edit View Ver	sions Favorites Analysis		
🗙 🕸 🎍	🖸 🛛 - 🕅 🛛 🚣	ֿ 🗛 🖌 🕨 🕨		
Filter: Creat	ion Date[10/20/2013]			
0 8 🗛 🏲	Req ID	Name	Direct Cover	Author
a <u>367</u>	1	우 Cruise Booking	⊽ Not Covered	alex_alm
a <u>366</u>	<u>}</u>	우 Cruise Search	Vot Covered	alex_alm
365	<u>i</u>	Cruise Reservation	⊽ Not Covered	alex_alm

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 a 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.

	Automatic Conversion Method		
Application Lifecycle	Convert lowest child requirements to design steps.	Req1 - 2 Req2 - 2 Req3	
Management Convert To Test	O Convert lowest child requirements to tests.	Req1 Req2	
	Convert all requirements to subjects.	Req1	
	◯ Generate single test.		
	Add Test to Test Set	le Req1	
	Keep current Requirements filter		

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

4. Choose an automatic conversion method.

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

tep 2 of 3: Manual Change Conversion					
Ø	✓ Auto Complete Children Image: Image of the second se	Legend			
Application Lifecycle Management Convert To Test	 ➤ Cruise Reservation Q Cruise Booking Q Cruise Search 				
	Cancel	Back Next > Help			

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

	Destination Su	bject Path			
hp	Subject:		~		
Application Lifecycle Management Convert To Test					
-				Finish	

6. Choose the destination subject path.

- a. In the **Subject** box, click the down arrow button. A dialog box displaying the test plan tree opens.
- b. In the test plan tree, select the **Cruises** subject.

✓ ➡ Subject					
▶ 🛅 Cruises					
Flight Reservation					
► Itinerary					
Mercury Tours Site					
▶ 🛅 Modeling					
Payment Methods					
Profiling					
OK Cancel Clear					

- c. Click **OK** to close the Select Destination Subject dialog box. The **Subject** box now indicates this test plan.
- 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 the 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

Chapter 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	.41
•	Designing Test Steps	42
•	Defining Test Parameters	.44
•	Defining Test Configurations	47
•	Creating and Viewing Coverage	. 49
	Creating Coverage	. 50
	Analyzing Coverage	52
•	Copying Test Steps	55
•	Generating Automated Test Scripts	.57

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 11.

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 Test Folder dialog box opens.
 - b. In the **Test Folder Name** box, type Payment Methods. Click **OK**. The new folder is added to the test plan tree.
 - c. 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.
 - Select the Payment Methods folder and click the New Test button. The New Test dialog box opens.

👃 New Test							
🗙 😤 🥵 🏥 📭 Use Default Values 💷 Set Default Values							
• Test Name:	• Type: 🗈 MANUAL	~					
Details	Details						
	Level: V Priority: V Creation Date: V Creation Date: V Status: Design V Version Numb Description Comments						
	B I ⊻ A ⊉ ≣ ≟ ⊡ ⊡ ▷୩ № (♥ Ⅲ № ℚ ℚ ⊠ QK Close Help						

- b. In the Test Name box, type a name for the test: Credit Cards.
- c. In the 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

- 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 Methods folder.

Name					
*	P	Subject			
		🔏 Unattached			
	۱.	🚞 Cruises			
	►	Flight Reservation			
	►	🛅 Itinerary			
	۱.	Mercury Tours Site			
	۱.	🚞 Modeling			
	►	🚞 Profiling			
	-	Payment Methods			
		Credit Cards			

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					
	s 🔍 🛗 🤣 🕵 🛗				
Step Name: Step 1					
Details	Details				
Attachments	Description:				
	B I ⊻ A ∰ ≣ ≣ ⊡ ⊡ ▷୩ ୩⊲ ⋽ (? Ⅲ 4 ⊂ ⊂ ⊂ ⊂ ⊂				
6					
C C	Expected Result:				
	B I ∐ A ∰ ≣ ≣ ⊡ ⊡ ▷୩ ୩୦ ⋽ (⊂ Ⅲ ♣ ♀ ♀ ♥ .				
	OK Cancel	Help			
		map			

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. Close the Design Step Details dialog box.

Click OK.

6. Add the remaining test steps.

For each of the following test steps, click the **New Step** button to open the Design Step Details dialog box, type the required information, and click **OK** to close the Design Step Details dialog box:

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

The Design Steps tab displays the design steps.

Details Design Steps Parameters Test Configurations Attachments Req Coverage Linked Defects

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6	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.	 Click the Flights button. Enter flight details and preference. Click Continue. 	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 details	Enter first name, last name, and meal preference.	Passenger details are entered
	Step 5: Enter credit card details.	 Enter credit card type. Enter credit card number. Enter expiration date. 	Credit card details are entered.
	Step 6: Enter addresses.	Enter billing and delivery addresses.	Addresses are entered.
	Step 7: Complete the purchase.	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 42, 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 Test Parameter Details dialog box opens.

📴 Test Parameter Details	
Parameter Name:	
Details	Details
	Mapping Statu Order: 1
1	
	Default Value Description
	B I ∐ A ∰ \≣ \≣ I I (I ▷¶ ¶⊲ າ ♥ (♥ Ⅲ ♣ ♥ ♀, ♀, ⊠
	OK Cancel Help

b. Type the following:

Parameter Name: Credit card type.

Default Value: American Express, Visa, or MasterCard.

- c. Click **OK** to close the Test Parameter Details dialog box. The parameter is added to the Parameters tab.
- 3. Add an additional parameter.
 - a. Click the New Parameter button. The Test Parameter Details dialog box opens.
 - b. Type the following:

Parameter Name: Credit card number.

Default Value:1111-2222-3333-4444.

- c. Click **OK** to close the Test Parameter Details 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.

Parameters								
🍪 New Parameter 🍸 🕇 🛄 📄 🏠 🦊								
Sort By: 0	Order[Ascending]							
Used Parameter Default Value Description								
	Credit card type	American Expre						
	Credit card num	1111-2222-333						
Descrip	tion Default V	alue		¥				
BI	u <u>a</u> ⊉ ≣ ≣	• • • •	् 🖉 🏢 🖓 🔍	•				
America	an Express, Visa,	or MasterCard						
	• • •							
	<u>OK</u> Cancel <u>H</u> elp							

- 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.
- f. The parameters are added to your design step.

Det	ails • Design Steps •	Parameters Test Configurations Attachments Req Co	verage Linked Defects Dependencies				
2	»						
ĺ	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.	 Click the Flights button. Enter flight details and preference. Click Continue. 	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 details	Enter first name, last name, and meal preference.	Passenger details are entered				
	Step 5: Enter credit card details.	1.Enter credit card type. << <credit card="" type="">>> 2.Enter credit card number. <<<credit card="" number.="">>> 3.Enter expiration date.</credit></credit>	Credit card details are entered.				
	Step 6: Enter addresses.	Enter billing and delivery addresses.	Addresses are entered.				
	Step 7: Complete the purchase.	Click Secure Purchase.	Purchase completed.				
	Step 8: Log out.	Click the Log Out button.	User logs out of Mercury Tours.				

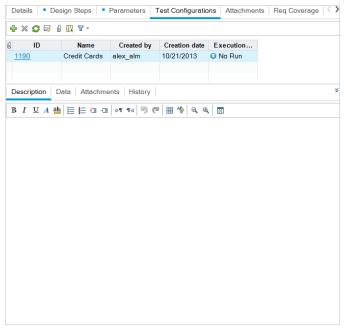
Defining Test Configurations

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 UFT 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.



By default, ALM created the Credit Cards test configuration.

- 2. Rename the test configuration name to American Express.
 - a. Under Name, click Credit Cards. 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: 2222-3333-4444-5555. Click **OK**.
 - c. Under Actual Value, click the second cell. Click the arrow and click in the box. Type:

American Express. Click OK.

Description Data Attachments History						
📖 🥋 Copy Default Values 🧌 Update Selected Parameters 👻						
Used	Parameter Name	Default Value	Actual Value	Source Test		
~	Credit card number.	1111-2222-3333-4444.	2222-3333-4444-555	Credit Cards		
\checkmark	Credit card type	American Express, Visa,	American Express	Credit Cards		

- 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**.

2 2 3 4 1 0	Des	sign Steps	Parameters A	Attachments	 Test Configurations 	Req Coveri 🔇 🕽
🔶 🗙 🤹	3 💷 0	III 🛛 -				
G Na	ime	Created by	Creation date	Execution		
Americ	an Ex	alex_alm	10/21/2013	🖸 No Run		
Visa		alex_alm	10/21/2013	🖸 No Run		
Master	rCard	alex_alm	10/21/2013	🖸 No Run		
Descrip	tion D	ata Attachme	nts History			\$
		ata Attachme fault Values <		d Parameters		\$
	Copy De				- Actual Value	Source Test
R 🛷	Copy De Para	fault Values 🖓	Update Selecte	Value		Source Test

6. Version Control: Check in the test configurations.

Check in the test and its test configurations. In the test plan tree, rightclick the **Credit Cards** 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:

٠	Creating Coverage	.50
٠	Analyzing Coverage	52

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 Name box, type Credit Cards.
 - e. In the **Requirement Type** box, select **Functional**.

Note: If you are using HP ALM Essentials Edition, HP Quality Center Community Edition, or HP Quality Center Express 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.

4. Display the Test Plan Tree pane.

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

📸 🗙 🕸 🍦 💭 🖓 - 🔣	6 🔍 7 🔤 🕶 🏲 🧟	د الب r h − 🖓 −	Requirement is checked	irement is checked out by alex_alm		
lo Filter Defined	Details Rich Text	Attachments Li	equirement Tracea	iirement Tracea Test Coverage Bu: <		
Name Requirements	🛐 Select 🐐 Status F	ilter: All	- 🖸 🖓 -	» Test Plan Tree		
Business Models Business Models Mercury Tours Applic Online Travel Boo Online Travel Info Profile Manageme Reservation Mane Booking System Application Securi Application Usabili Application Client Application Perfor Orrise Reservatio	Coverage Type	Entity Name	Coverage Statu	IS ← III → S G ← Cruises → Cruises → Flight Re → Itinerary → Modeling → Modeling → Profiling → Profiling	ned asservation Tours Site 9 t Methods	
Payments Points (Crads Assemble order Contract processing				Test Configuration	is	
Contract processing				Name	Test Name	
				American Express Visa MasterCard	s Credit Cards Credit Cards 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.

🛎 🐮 🗙	🕸 🖕 🔁 🛛 - III,	0 🔍 🔻 🖂	- 🏲 🔍	<u>↑</u>	• -		1 Req	uirement is checked out	by alex_alm
o Filter D	efined	Details Rich	h Text At	tachm	ents Li	nked	Defects Requ	uirement Tracea	Test Coverage
lame		📆 Select 🔒	Status Filte	er: A	1	~	6 7 - »	Test Plan Tree	
	equirements					~			₩ - <i>4</i> 0
	Business Models	Coverage			y Name		verage Status	🗢 🖻 📲 🖸 🗸	Υ * <i>-></i> »
-	Mercury Tours Applic	Test	1	Dre Cre	<u>dit Car</u>	No	Run	Subject	
►	Online Travel Boo							Junattached	1
•	Online Travel Info							Cruises	
•	Profile Manageme							Flight Rese	ervation
•	Reservation Mana							Itinerary	
•	Booking System							Mercury To	urs Site
+	Application Securi							Modeling	
	Application Usabili							 Payment M 	lethods
) }	Application Client							Credit C	
	Cruise Reservatio							Profiling	arao
,	Payments								
•	Payments Credit Cards	<					>	Test Configurations	
▶ 🖻	Assemble order	Coverage Cha	art Test Co	onfigu	ration St.		*	🗢 🛛 🖓 🗛 -	
•	Contract processing	1.0						No Filter Defined	
								Name	Test Name
		Name	Descripti	on	Statu	5		American Express	Credit Cards
		American Ex	-	-				Visa	Credit Cards
		Visa	Test config	gur (3 No Rur	ı		MasterCard	Credit Cards
		MasterCard	Test config	gur (3 No Rur	1 I			

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

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 Cards 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 > Check In. 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:

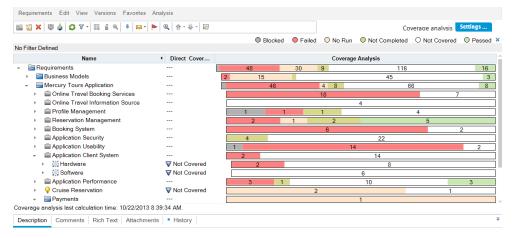
1. Make sure that the Requirements module is displayed.

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 requirem 230 - Application Client System and its children according to the current filter. Click a group in the graph to display its list of required	
2 Failed	
14 Not Cover	red
Copy to Clipboard	Show Test Coverage ≯

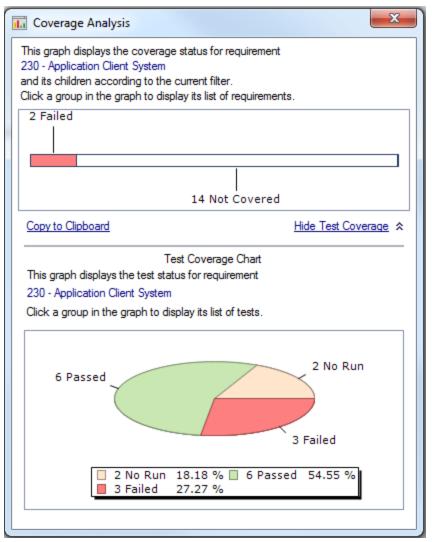
5. Display the child requirements with a "Failed" status.

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 re- 230 - Application Client System and its children according to the current filter. Click a group in the graph to display its list of m	
K Failed Requirements:	Go To
237 Size 238 Resolution	
Copy to Clipboard	<u>Show Test Coverage</u> ≯

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 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.

🦸 🐔 🗙 🕒 🖺 🖉 🕹	ቜ- % ♀ Щ⊒ ₿ ☆↓	
Step Name	Description	Expected Result
Page Title	Verify the Web page title shown in the title of the browser window.	 Page should have title. The title should be descriptive Different title on each page should be used.
Page Text	Check the text paragraphs on the page.	Text paragraphs should be left aligned. Recurring text should appear in
Forms	Check the forms on the page: - Input fields - Lists	 The input fields should be left aligned. The set of input fields should be
Navigation Bars	Verify the navigation bars on the page.	 All items in the left-side navigation bar should be left aligned. All items in the top navigation bar should be center aligned.
Links	Check the links on the page: - text links - graphics links	 All links should be underlined. Link labels should be descriptive.
Company Logo	Verify the company logo.	 Company logo should be presented on each page. Company logo should be in a consistent position on all page
Graphics	Check page graphics: - graphic buttons - banners - advertisements - other images	 All graphic objects should have correct horizontal and vertical alignment. Recurring graphics should
Versioning	Verify the version information of the page.	Each page should contain the following versioning information Company name Date of last update Site version
Screen Area Definitions Compatibility	Verify the page on different screen area definitions: • 640 x 480 pixels	The page should be shown correctly for , each of these screen area definitions.
Page Length	Verify the length of the page and accessibility of the page contents according to their importance.	 The most important informatio should be located at the top pa of the page, so it can be accessed immediately, without

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, UFT).

Consider these issues when deciding whether to automate a test.

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

In this exercise, you will generate a UFT test script for the Address Options test.

Note: For prerequisites to working with a UFT test, see "Before You Begin" on page 8.

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 choose **Edit > 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 UFT 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 UFT, click the Launch Unified Functional Testing button.

Chapter 5: Running Tests

Throughout the application lifecycle management process, you can run automated and manual 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.

After you define test sets, you can begin to execute your tests. Some tests can be run automatically and some can be run manually.

When you run a test automatically, ALM opens the selected testing tool, which runs the test, and imports the test results to ALM.

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.

If you are using **ALM Edition** with the Lab Management extension enabled, you can use server-side execution to reserve testing resources for automated tests. Server-side execution occurs on remote testing hosts, can be scheduled or immediate, and does not require user intervention.

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 test execution, you can use ALM to view and analyze the results of your tests.

In this lesson, you will learn about:

Test Set Types	60
Defining Test Sets	61
Defining a Functional Test Set	61
Defining a Default Test Set	64
Adding Tests to a Test Set	69
Adding Tests to a Functional Test Set	69
Adding Tests to a Default Test Set	
Defining a Build Verification Suite	73
Setting Schedules and Conditions for Test Runs	74
Running Tests	
Running Tests in a Functional Test Set	
Running a Functional Test Set in the Test Lab module	81
Scheduling a Functional Test Set in the Timeslots Module	
Running Tests in a Default Test Set Manually	
Running with Sprinter	
Running with Manual Runner	
Running Tests in a Default Test Set Automatically	
Viewing and Analyzing Test Results	

Viewing Test Results in the Test Runs Module	
• Viewing Functional Test Set Results in the Test Set Runs Tab	91
Viewing Test Results in the Test Runs Tab	
• Viewing Test Results in the Test Instance Properties Dialog Box	
Viewing Test Coverage	95
Viewing Coverage Progress	

Test Set Types

After you design tests in the Test Plan module, you create a test sets tree in the Test Lab module. 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, you add instances of your selected tests to the test set. Each test instance contains a defined test configuration.

ALM provides the following types of test sets:

- Functional test sets include automatic tests that check the application under test functions as expected. Tests in a Functional test set are scheduled in a timeslot to run on a server, without requiring user supervision. Available for: ALM Edition with the Lab Management Extension enabled.
- **Default** test sets can include automatic and manual tests, and are used to check that the application under test functions as expected. Tests in a Default test set are controlled from the user's machine and require the supervision of the tester.
- **Performance** test sets include performance tests which check that the application under test can withstand load and demand. Tests in a Performance test set are scheduled in a timeslot to run on a server, without requiring user supervision. **Available for**: ALM Edition and Performance Center Edition only.

Note: For the purposes of this tutorial, we will only use Functional and Default test sets. The usage of Performance tests is covered in *HP ALM Performance Center Quick Start*.

To decide which types of test sets to create, consider the goals you defined at the beginning of the application lifecycle management process.

When creating and combining different groups of test sets, consider issues such as the current state of the application and the addition or modification of new features. Following are examples of general categories of test sets you can create:

Test Set	Description
Sanity	Checks entire application at a basic level—focusing on breadth, rather than depth—to verify that the application is functional and stable. This set includes fundamental tests that contain positive checks, validating that the application is functioning properly. For example, in the Mercury Tours application, you could test whether the application opens and enables you to log in.

Test Set	Description
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.
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.

Defining Test Sets

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. Depending on whether you are an ALM Edition user, you can either define a Functional test set or a Default test set.

Note:

- If you are using ALM Edition with the Lab Management extension enabled, define a Functional test set. See "Defining a Functional Test Set" below.
- If you are not using ALM Edition with Lab Management, define a Default test set. See "Defining a Default Test Set" on page 64.

Defining a Functional Test Set

Functional test sets contain automatic tests. Tests in a Functional test set run using automated serverside execution.

To define a Functional test set:

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

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

- 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 and repeat the previous step to create two subfolders, named Cycle 1 - New Features, and Cycle 2 - Full.

4. Assign the test set folders to a cycle.

- 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" on page 25).
- 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.

🔚 Root
Unattached
BPT tests (Flight)
Mercury Tours Web Site
🕨 🚞 Modeling
🕨 🚞 Release 10.5
Service Pack 1
🕨 🐻 Cycle 1 - New Features
▶ 🛅 Cycle 2 - Full

- 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	
× * 💀 📾	
Name:	Type: 🖾 Default
Details	Details
Attachments	Baseline: V Close Date: V Modified: Open Date: V Status: V Target Cycle: Test Set Fold Cycle 1 - New Feat Imen
	B I ⊻ A № ∏ ≟ ⊂ ⊂ ▷୩ ୩⊲ ♥ ♥ Ⅲ № Q, Q, ⊠ <u>OK</u> Close <u>H</u> elp

c. Enter the following:

Name: Mercury Tours Site

Description: This test set includes automatic tests that run on remote testing hosts and verify the functionality of the Mercury Tours site.

- d. Select Functional in the Type field.
- e. Click **OK**. The **Mercury Tours Site** test set is added to the test sets tree in the left pane.

- 6. Define the Mercury Tours Site test set details.
 - a. Click the test set in the test sets tree. The **Execution Grid** tab is displayed. Click on the **Details** tab.

Details Execution	on Grid Requested Hosts	Execution Flow Au	tomation Attachments <>					
•Name:	Mercury Tours Site	Baseline:	~					
Close Date:	~	Modified:	10/22/2013 1:27:43 PM					
Open Date:	10/22/2013 🗸	Status:	Open 🗸					
Target Cycle:	Cycle 1 - New Features	Test Set Folder:	Cycle 1 - New Features					
Test Set ID:	312	Туре:	🕾 Functional					
Description								
BIUAab	≣ ≣ ⊡ ⊡ № ¶4 9 @	' ⊞ 4% Q, Q, ⊠						
B I U A the limit is a constructed in the limit of the Mercury Tours site.								

b. Select 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.

a. Click the **Automation** tab.

Details	Execution Grid	Requested Hosts	Execution Flow	Automation	Attachments	Linked Defects	History
On Auto	mated Test Failure						
Reru	n test						
Maxi	imum test reruns:		0				
Clea	nup test before reru	n:	\sim				
Setti	ngs per test						
Notificat	ion						
Send	email in the event o	f any test with status	"Failed"				
	To						
в	I U A ab		>¶¶⊲ 🖱 🥙	III 🕹 🔍	⊕ _		
	on Summary						
Send	summary of results	after test set executi	on				
	То						

- b. In the On Automatic Test Failure section, perform the following:
 - Select the **Rerun test** check box.
 - Set Maximum test reruns to 1.
- 8. Instruct ALM to send an email to specific users if certain events occur.

Under Notification, perform the following:

- a. Select the check box to send an email notification if any test in the test set fails.
- b. To: Enter your email address.
- c. Message: Type the following:

This test failed. Please review the test results and submit a defect.

Defining a Default Test Set

Default test sets contain automatic and manual tests. You start and control tests in a Default test set using your local machine.

Note: In this exercise, you define a Default test set. If you are using ALM Edition with Lab Management enabled, you already defined a Functional test set. You can proceed to "Adding Tests to a Test Set" on page 69.

To define a Default test set:

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

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

- 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 and repeat the previous step to create two subfolders, named Cycle 1 - New Features, and Cycle 2 - Full.

4. Assign the test set folders to a cycle.

Note: If you are using HP ALM Essentials Edition, HP Quality Center Community Edition, or HP Quality Center Express Edition, fields and commands related to cycles and releases are not available. Proceed to the next step.

- 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" on page 25).
- 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.
 - Root
 Unattached
 BPT tests (Flight)
 Mercury Tours Web Site
 Modeling
 Release 10.5
 Service Pack 1
 Cycle 1 New Features
 Cycle 2 Full
- 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	
Name:	Type: / Default
Details	Details
	Baseline: Close Date:
	Modified: Open Date:
	Status: V Target Cycle:
	Test Set Fold Cycle 1 - New Feat
l	Description
	B I ⊻ A 🎍 🗮 🖽 🖅 🕼 🖉 🕬 🕅 🖗 🗮 🍄 🔍 🍳 🍳
	<u>O</u> K Close <u>H</u> elp

c. Enter the following:

Name: Mercury Tours Site

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

- d. Select **Default** in the **Type** field.
- e. Click OK. The Mercury Tours Site test set is added to the test sets tree in the left pane.
- 6. Define the Mercury Tours Site test set details.

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

Details	Details Execution Grid Execution Flow Attachments Automation Linked Defects						
•Name:		Mercury Tours Site		Baseline:	~		
Close Date:					Modified:	10/22/2013 12:05:26	
Open Date:		10/22/2013		~	Status:	Open 🗸	
Target Cycle:		Cycle 1 - New Features		res	Test Set Folder:	Cycle 1 - New Features	
Test Se	est Set ID: 212			Type:	/ Default		
Descript	ion						
BIU	A ab		I (I >¶ ¶4	9	@ ⊞ 40 Q Q 🛛		
B I U A the limit of the Mercury Tours site. In a limit of the Mercury Tours site.							

b. Select 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.

On Automated Test Failure					
Rerun test					
Maximum test reruns:		0			
Cleanup test before rerur	n:	\sim			
On final failure:	Do nothing	~			
Maximum test set reruns:		0 🔶			
Continues a custores	1				
Settings per test					
Notification					
Send email in the event of:					
Any test in the Automa	atic Runner finishe	s with status "F	ailed"		
	(network problem)	a hardwara fail	(respected)		
Environmental failure	(network problem	s, naruware iain	ure, etc.)		
 Environmental failure All tests in the Automatic 					
All tests in the Automa	atic Runner that we	ere run have fini	shed		
All tests in the Automa	atic Runner that we	ere run have fini	shed	®. 🛛	
All tests in the Automa	atic Runner that we	ere run have fini	shed	Q. 🛛	
All tests in the Automa	atic Runner that we	ere run have fini	shed	Q	
All tests in the Automa	atic Runner that we	ere run have fini	shed	€ 8	
☐ All tests in the Automa To B I ⊻ A ⊉ ≣	atic Runner that we	ere run have fini	shed	Q	
All tests in the Automa	atic Runner that we	ere run have fini গ পাথ ¹⁹ ়ি (শ	shed	€	

- 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 an email to specific users if certain events occur.

Under Notification, perform the following:

- a. **Send email in the event of**: Select the first check box to send email notification if any test in the test set fails.
- b. To: Enter your email address.
- c. 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 tests to the **Mercury Tours Site** test set.

Note:

- If you are using ALM Edition with Lab Management enabled, add a test to your Functional test set. See "Adding Tests to a Functional Test Set" below.
- If you are not using ALM Edition with Lab Management, add a test to your Default test set. See "Adding Tests to a Default Test Set" on the next page.

Adding Tests to a Functional Test Set

In this exercise, you add an automatic test to the Mercury Tours Site test set.

To add automatic tests to a Functional 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**.
 - b. Click the Execution Grid tab if it is not yet displayed.
- 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 Edit View Tests Favo	orites Anal	ysis			
🖆 🖄 🗙 🕼 - 💋 V - 😫 🗳	🔝 Select Tests 🖻 Run 🚡 Run Test Set 💙				Test Plan Tree Requirement: < 🗙
No Filter Defined	Details		Grid Requested I		 ➡ ♣ ♀ ♀ ▼ ★ ≫ ➡ Subject ➡ Unattached ➡ Cruises ➡ Flight Reservation ➡ Itinerary ➡ Mercury Tours Site ➡ Modeling ➡ Payment Methods ➡ 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 **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.
- 5. Close the right pane.

Click the **Close** button.

Adding Tests to a Default Test Set

Note: In this exercise, you add tests to a Default test set. If you are using ALM Edition with Lab Management, you already added tests to a Functional test set. Proceed to "Defining a Build Verification Suite" on page 73.

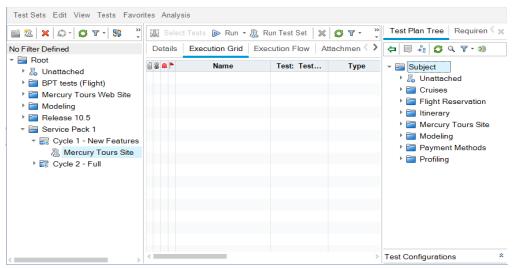
To add manual tests to a Default test set:

- 1. Display the **Execution Grid** tab.
 - a. If the Test Lab module is not displayed, on the ALM sidebar, under Testing, select Test Lab.
 - b. Click the **Execution Grid** tab if it is not yet displayed.
- 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.

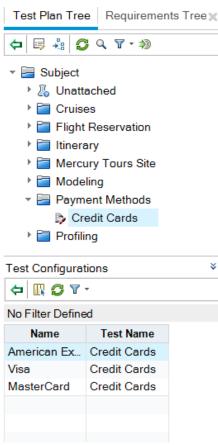
3. Display the right pane if it is not already displayed.

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



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.



- 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 Parameter Values dialog box opens.
 - d. Click **Close**. 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.

G 🛚 单 🏲	Name	Test: Test	Туре	Status
	[1]American Express	🐎 Credit Car	MANUAL	🖸 No Run
	[1]MasterCard	🐎 Credit Car	MANUAL	🖸 No Run
	[1]Visa	🕞 Credit Car	MANUAL	🖸 No Run
	[1]Passenger Name	Passenger	MANUAL	🖸 No Run
	[1]Billing And Delivery	Billing And	MANUAL	🖸 No Run
	[1]Credit Card Expiratio	🐎 Credit Car	MANUAL	🖸 No Run
	[1]Credit Card Number	🐎 Credit Car	MANUAL	🖸 No Run
	[1]Credit Card Owner	🐎 Credit Car	MANUAL	🖸 No Run
	[1]Number Of Passeng	🖫 Number O	QUICKTEST	😉 No Run
				3

Defining a Build Verification Suite

Note: The Build Verification module is available only if you are using ALM Edition with the Lab Management extension enabled. If you are not using ALM Edition with Lab Management, proceed to "Setting Schedules and Conditions for Test Runs" on the next page.

The Build Verification module enables you to define a group of Functional test sets bundled together with a single Performance test. This group of test sets is called a build verification suite. When run together, the build verification suite checks the overall status of your build.

You can create a small suite to run immediately after a build in the middle of the day, create a suite with a few Functional test sets to run once every hour, or create a large suite to run for several hours every night.

Build verification suites are a key component in HP's Continuous Delivery solution. They facilitate an automated, end-to-end deployment and testing framework that makes application development more efficient, reliable, and quick.

In this exercise, you will create a build verification suite that includes Functional test sets.

To define a build verification suite:

1. Display the **Build Verification** module.

On the ALM sidebar, under Testing, select Build Verification.

- 2. Add a folder to the Build Verification Suites tree.
 - a. In the Build Verification Suites tree in the left pane, select the root **Build Verification Suites** folder.
 - b. Click the **New Folder** button. The New Build Verification Suite Folder dialog box opens.
 - c. In the Folder Name box, type Mercury Tours Build Verification and click OK.
- 3. Add a build verification suite to the Mercury Tours Build Verification set folder.

- a. In the build verification suites tree, select Mercury Tours Build Verification.
- b. Click the **New Build Verification Suite** button. The New Build Verification Suite dialog box opens.

😥 New Build Verification	Suite
🗙 🖑 🖡 🛱	
Build Verification Suite Na	ime:
Details	Details
	Created by: Creation date:
	Modified: Modified By:
L L	Description
	B I ∐ A ∰ \≣ \≣ @ @ ■ \¶ ¶⊲ ♥ @ \ ■ \\$ ♀ ♥
	<u> QK </u>

c. Type the following:

Name: Mercury Tours Verification - Hourly

Description: This build verification suite includes test sets that run on an hourly basis to verify the stability of the Mercury Tours site functionality.

- d. Click **OK**. The **Mercury Tours Verification Hourly** build verification suite is added to the test sets tree in the left pane.
- 4. Open the Functional Test Sets tab.

In the build verification suites tree, select **Mercury Tours Verification - Hourly**. Select **Functional Test Sets** from the tabs in the right pane.

5. Add a Functional test set to the build verification suite.

Click the **Select Test Sets** button. The right pane displays the Test Sets Tree tab. The Test Sets Tree tab enables you to select test sets from the test set tree to add to the build verification suite.

Add the Mercury Tours Site test set to the build verification suite.

- a. Under the Service Pack 1 folder, expand the Cycle 1 New Features folder.
- b. Drag the **Mercury Tours Site** test set from the test sets tree to the Functional Test Sets tab to add it to the build verification suite.

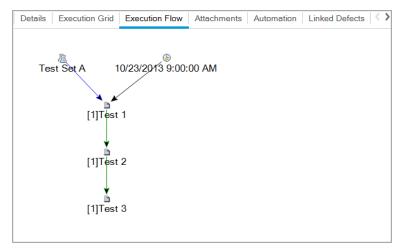
You can now schedule a timeslot to run this build verification suite.

Setting Schedules and Conditions for 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 is to be executed only if the previous 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 ^(G) icon is added to the diagram.

In this exercise, you will create a new Default 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 in the Execution Flow tab:

1. Make sure the Test Lab module is displayed.

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

- 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:

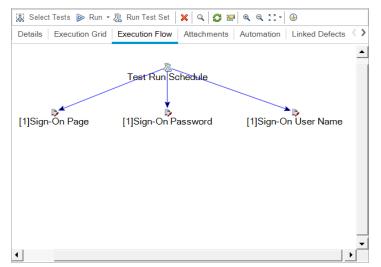
Name: Test Run Schedule

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.
 - c. 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 Parameter Values

dialog box opens.

d. Click Close. 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 Nam	ie>			X
Execution Conditions	Time Dependency				
₽ / ×					
Test has no Execution Co	nditions				
			<u>0</u> K	<u>C</u> ancel	<u>H</u> elp
				<u>-</u>	

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

New Execution Condition						
Test <[1]Sign-On Page> runs only if						
Test v is Finished v						
Comments						
BIUA ∰ ≣ ≣ ⊡ ⊡ ▷¶ ¶⊲ 🖄 🥙 🖽 🐥						
<u>OK</u> ancel						

- c. In the Test dropdown list, 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.

Execution Conditions Time Dependency
₽ / X
Test Runs Only If
test 🔈 [1] Sign-On Page is Passed
OK Cancel Help

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-On User Name>								
Execution Conditions	s Time Dependency							
⊙Run At Any Time	⊙ Run At Any Time							
ORun At Specified Ti	ime							
Date 10/23/	2013 🗸							
Time 01:26:	53 PM							
	OK Cancel Help							

- 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.

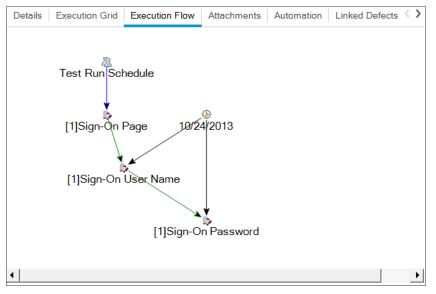
Details	Execution Grid	Execution Flow	Attachments	Automation	Linked Defects	History
	[1]Sign-On		dule Sign-On Pass n-On User Na		10/24/2013	

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

Add the same execution condition as described in Step 4 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 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

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. Depending on whether you are an ALM Edition user, you can either define a Functional test set or a Default test set.

Note:

- If you are using ALM Edition with the Lab Management extension enabled, run a test in your Functional test set. See "Running Tests in a Functional Test Set" below
- If you are not using ALM Edition with Lab Management, run a test in your Default test set. See "Running Tests in a Default Test Set Manually" on page 83 and "Running Tests in a Default Test Set Automatically" on page 89.

Running Tests in a Functional Test Set

When you run tests from a Functional test set, ALM uses Lab Management to execute the tests on remote testing hosts equipped with the testing tools. Lab Management updates ALM with the results of your tests. You can run all tests in a Functional test set or run specific tests. You can use the Execution Grid tab to run a test set immediately. You can also use the Timeslots module to reserve resources for a test to run in the future.

You can run build verification suites in the same way as test sets. You use the Build Verification module to run a build verification suite immediately, and you use the Timeslots module to reserve resources for a build verification suite to run in the future.

In these exercises, you will learn about the following:

- "Running a Functional Test Set in the Test Lab module" below
- "Scheduling a Functional Test Set in the Timeslots Module" on the next page

Running a Functional Test Set in the Test Lab module

You can run tests from a Functional test set immediately using the Execution Grid.

In this exercise, you will run the Mercury Tours Site test set in the Test Lab module.

To run a Functional test set in the Test Lab module:

1. Make sure the Test Lab module is displayed.

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

2. Select the Mercury Tours Site test set.

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.

3. Open the Run Functional Test Set dialog box.

Click the **Run Test Set** button. The Run Functional Test Set dialog box opens.

Run Functional Test Set M	ercury Tours Site
Select timeslot: New OReserved	
New Timeslot - Properties:	
Duration:	00:30:00 👰 🗹 Automatically Extend Timeslot
Requested resources:	<u>1 host(s)</u>
AUT Env. Configuration:	[none]
	Calculate Availability
Availability results:	
ᢙ Timeslot can be reader of the second s	eserved.

4. Run the test set.

Click the **Run** button. ALM uses Lab Management to execute your test on a testing host with the required testing tool.

5. View the progress of the run.

ALM opens the Execution Report page, which displays the current state and results of the tests you executed. You can refresh the page, stop tests, and view an Event Log for the entire run.

Ø) Application Lifecycle Management							
						Stop All	Log Every 15 sec	• ORefresh ? Help
	Test Se Executed State: O	ution Report t: Mercury Tours Site by: alec_alm Run Id. 1001 Running **** (Functional Tests) b: 2013-11-03 09:50:01						
	Execu	tion Details						
	Containir Test Ins							- Not Completed - Passed - No Run - Failed - Blocked - N/A
	Stop S Type	elected Run Screen	Run Status	Run State	Run Details	Exec Time	Host	Run ID
	type	restriame				Exectime	Prost	Runio
	Jk.	Number Of Passengers	🕒 No Run	No Run				
	Run Deta	ils:						

6. Close the Execution Report.

After the test run is complete, close the Execution Report page.

Scheduling a Functional Test Set in the Timeslots Module

You can reserve resources for the execution of a Functional test set using the Timeslots module.

In this exercise, you schedule the Mercury Tours Site test set in the Timeslots module.

To schedule a Functional test set in the Timeslots module:

- Make sure the Timeslots module is displayed.
 On the ALM sidebar, under Testing, select Timeslots.
- 2. Create a new Timeslot.

On the Timeslots toolbar, click the **New Timeslot** button. The Timeslot Reservation dialog box opens.

- 3. Schedule your Functional test set.
 - a. In the Run field, select Functional Test Set.
 - b. In the Start field, select Automatically.
 - c. In the Name field, type Mercury Tours Nightly.
 - d. Click the [none] link in Select a test set, and select the Mercury Tours Site test set.
 - e. Use the Start Time and End Time fields to schedule the test set to run from 20:00 to 22:00.
 - f. A host is automatically added to the Requested Hosts grid.

) Timeslot Reservation		
Run: Functional Test Set 🗸 Start:	Automatically V Name: Mercury Tours Nightly	
Test Set: Mercury Tours S AUT Env. Configuration: [none]	<u>de</u>	Duration: 2 → hrs 0 → mins ∞ Start Time: 11/04/2013 → 20:00 → ∞ End Time: 11/04/2013 → 22:00 → ∞ ✓ Automatically Extend Timeslot ✓ ✓
👼 Add Automatch Host 👼 Add Specific	Host 🛃 Edit 💥 🕼 🗐 Calculate Availability	•
Requested Hosts	Monday, November 04, 2013	
Host Type Properties		0 22:00 23:00 0:00 1:0
Automatch Quick 1, Any		
	Start Times 🗙 Insufficient Resources 👷 License/Project Lim	nit 🕜 Unknown 🗾 Unavailable Resource
Timeslot Status Description		
Timeslot can be reserved.		
		Submit <u>C</u> ancel <u>H</u> elp

4. Submit the timeslot.

Click Submit.

Running Tests in a Default Test Set 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.

Note: In these exercises, you run Default test sets. If you are using ALM Edition with Lab Management, you already ran a Functional test set. To continue in the tutorial, proceed to "Viewing and Analyzing Test Results" on page 90.

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

You run manual 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 the next page
- "Running with Manual Runner" on page 87

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:

- Sprinter functionality is not available with HP Quality Center Community Edition or Performance Center Edition.
- For information on installing Sprinter, see "Before You Begin" on page 8.

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.
 - b. Click the **Execution Grid** tab.
 - c. Click the Run arrow and select Run with Sprinter. HP Sprinter opens.

Sprinter	Plan Run	2 V V V
Run Setup Quer Mode	Plan Run Visa General Settings General Settings Test instance: Visa Steps (6) Test name: Credit Cards Run Summary Steps (6) Submitted Defects (0) Test set: RootService Pack 1/Cycle 1 - New Features/Mercury Tours S Owner: alex_alm • Run name: Run_10-17_1-17-45 User Actions (0) Storyboard_ Storyboard	HPALM Settings Help
Tests: 1 Active Tests: 1	Domain:DEFAULT, Project: ALM	Demo, User: alex_alm 🖓

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.

Root Unattached BPT tests (Flight) Mercury Tours Web Site Modeling Release 10.5 Service Pack 1 Cycle 1 - New Features Cycle 2 - Full Cycle 2 - Full Test Run Schedule X		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 [1]Master Card [1]Number Of Passen	Test: Test Name Passenger Name Credit Card Number Credit Card Expiration Credit Card Owner Billing And Delivery A Credit Cards Credit Cards Credit Cards Number Of Passengers	Status No Run No Run No Run No Run Not Completed Passed No Run No Run	Re ale ale ale ale ale ale ale ale ale
•	۲ 📃	m			Þ

- 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 🔻	
est: Credit Cards	? 🕨
୬ 국 😣 국 🚽 ∥ 국 🔒 국 🖉 💻 🔯 🏭 🕼 🕼 🖉 🔍	
I. Step 1: Log in to Mercury Tours	🧾 💿 🤄
1. Enter URL 2. Log in	
Expected Result: User is logged in to Mercury Tours	≡
2. Step 2: Select a flight destination	
3. Step 3: Enter departure and return flight	
 4. Step 4: Enter passenger details 	
5. Step 5: Enter credit card details	
 6. Step 6: Enter addresses 	
0/8	Duration: 00:04:3

Stens V

- 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.
- Pass all steps of the Visa instance.
 Click the Passed Selected Step arrow and select Pass All.
- Continue on to the MasterCard instance.
 Click Next Test. Sprinter advances to the next instance in the test list.
- Pass all steps of the MasterCard instance.
 Click the Passed Selected Step arrow and select Pass All.
- 11. Fail the last step on the MasterCard instance.

Select Step 8 and click the Fail Selected Step button.

- 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.

hp Sprinter		Plan Run	<u>∼</u> • ×
Run Setup ? ? () Copen ~ Ell ~ Fevorites	Master Card	Pint Email	IP ALM Settings Help
Name Status American Express Image: Card Master Card Image: Card	General Settings Steps (6) Parameters (2) Run Summary Steps (6)	Test instance: Master Card Test name: Credit Cards Status: S Failed Run name: Run_10-17_2-28-55 alex_alm	
Power Mode	Submitted Defects (0) Defect Reminders (0) User Actions (0) <u>Storyboard</u>	Start time: 10/17/2010 4:45 09 PM End time: 10/17/2010 4:54 04 PM Duration: 00:08:56 Image: Actions Submitted Defects 0 0	omments
		Image: Steps 8 Image: S	·
3 Tests D Active Tests		, Domain:DEFAULT, Project: ALM_Dem	o, User: alex_alm 💊

- 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.

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: Te	est Set Mercury Tours Site	, Test [1]American Express			×
🖻 Begin Run 📃 E	End Run 🗙 Cancel Run	🔋 🏪 🔹 🛈 OS Info			?
Run Details					
Run Name:	Run_11-3_15-25-4	Status:	Not Completed		Í
Test Instance:	[1]American Express	Test Set:Name:	Mercury Tours	Site	
•Tester:	alex_alm 🛛 🗸	Baseline:			
Build Verification		Build Verification			
Change Detectio		Change Status:			
Configuration ID:	1195	Configuration: Na	American Expre	ISS	
Comments					
				Add Cor	nment
P J II 4 ah		™ 🖻 🤁 🖽 🐇 🍳	e 🛛		
D I O A 🔤	≣ ≣ ख ख ≥¶ 1				
		··· / < • •			
	<u> </u> = <u> </u> = <u> </u> = <u> </u>	··· » < m • •			
1	E	··· » < m • ~			
Test Details	E	··· / / (
Test DetailsName: Credit Cards				est Details	
Test Details				est Details	

4. Start the test run.

2 4	<i>R</i> - <i>R</i> -	<p> 🛛 🕶 🏪 🔻</p>	¥t 🗗 🔤	~	?
Ste	p Name	Status	Exec Date	Exec Time	í
Step :	Log into M	🕒 No Run	11/3/2013	3:26:44 PM	
Step 2	: Select a f	🖸 No Run	11/3/2013	3:26:44 PM	
Step 3	Enter de	🔁 No Run	11/3/2013	3:26:44 PM	
Step 4	Enter pas	🔁 No Run	11/3/2013	3:26:44 PM	
Step 5	Enter cre	🔁 No Run	11/3/2013	3:26:44 PM	
Step 6	Enter ad	🔁 No Run	11/3/2013	3:26:44 PM	
Step 7	: Complet	🔁 No Run	11/3/2013	3:26:44 PM	
Step 8	Log out.	🖸 No Run	11/3/2013	3:26:44 PM	
Descrip B I		≣ E ∎ œ	⊳¶¶⊲ [™])(" ⊞^\$ Q.Q	
B <i>I</i> 1. Enter 2. Log ir	<u> </u>	≣ ≣ ⊒ a	1 1 -	1 1	
B <i>I</i> 1. Enter 2. Log ir Expected	<u>U</u> A ab URL. 1.	1	Act	tual:	
B I 1. Enter 2. Log ir Expected B I	URL.). URL .). URL .).	E E a a	Act	1 1	¶1 ~33

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

- 5. Perform the first step.
 - a. In the Actual box, type: The Mercury Tours site opens.
 - b. Click the **Pass Selected** button. Step 2 is displayed.
- 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 the title bar.

10. Pass all steps of the Visa instance.

Click the Passed Selected arrow and select Pass All.

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 the 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.

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.

6 🛚 🗭 🏲	Name	Test: Test Name	Туре	Status	Responsible
	[1]Number Of Passengers	勁 Number Of P	QUICKTEST_TE	🔁 No Run	alex_alm
	[1]Credit Card Number	🕞 Credit Card N	MANUAL	😢 No Run	alex_alm
	[1]Credit Card Expiration Date	🕞 Credit Card E	MANUAL	🔁 No Run	alex_alm
	[1]Credit Card Owner	🕞 Credit Card O	MANUAL	😒 No Run	alex_alm
	[1]Passenger Name	🕞 Passenger N	MANUAL	🔁 No Run	alex_alm
	[1]Billing And Delivery Address	🕞 Billing And D	MANUAL	😒 No Run	alex_alm
	[1]American Express	🕞 Credit Cards	MANUAL	🔇 Passed	alex_alm
	[<u>1]Visa</u>	🕞 Credit Cards	MANUAL	🔇 Passed	alex_alm
	[1]mastercard	🕞 Credit Cards	MANUAL	😧 Failed	alex_alm

- 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.

Step Name	Status	Steps Details	
Step : Log into Mercury Tours	🗙 Failed	Description:	
Step 2: Select a flight	🗙 Failed	1. Enter URL. 2. Log in.	
Step 3: Enter departure	🗙 Failed	2. 20g m.	
Step 4: Enter passenger details.	🗙 Failed		
Step 5: Enter credit card details	🗙 Failed	Expected:	
Step 6: Enter addresses.	🗙 Failed	User is logged into Mercury Tours.	
Step 7: Complete the purchase.	🗙 Failed		
Step 8: Log out.	🗙 Failed		

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

Running Tests in a Default Test Set Automatically

When you run an automated test from a Default test set, 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 UFT test.

Note: For prerequisites to running a UFT test, see "Before You Begin" on page 8.

To run a test automatically:

1. Make sure the Test Lab module is displayed.

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

- 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.

Automatic Runner <root\mercury< p=""></root\mercury<>	Tours Web Site\Fun	ctionality And UI\Mercury Tou	rs Func
Run Settings			
🕨 Run All 💽 Run 🔳 Stop 🔳 St	op All		0
Run All Tests Locally			
✓ Enable Log			
Test Name	Run on Host	Status	
勁 [1]Number Of Passengers			

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 UFT.

In UFT, choose File > Exit.

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 in the Test Runs Module" below
- "Viewing Test Results in the Test Instance Properties Dialog Box" on page 93
- "Viewing Test Coverage" on page 95
- "Viewing Coverage Progress" on page 97

You can also use ALM reports and graphs to further analyze your test results. For more information, see "Analyzing ALM Data" on page 116.

Viewing Test Results in the Test Runs Module

You can view results for a test in the Test Runs module. You can use the grid to compare the results of recent test runs with previous test runs.

In the below exercise, you will learn how to view test run information in the Test Runs module.

Viewing Functional Test Set Results in the Test Set Runs Tab

If you are using ALM Edition with Lab Management enabled, you can view the results of your Functional test set runs in the Test Set Runs tab.

To view test set results in the Test Set Runs tab:

1. Make sure the Test Runs module is displayed.

```
On the ALM sidebar, under Testing, select Test Runs.
```

ort B	r Exec Date[De	scendina]:Exec Time[De	scendinal						Lee
8 P	Run ID	Run Name	Test: Test Name	Configuration:	Status	State	Duration	Exec Date	Exec Time
	293	➢ Run_8-15_16	Returning Date	Returning Date	Passed		184	8/15/2012	5:05:37 PM
	294	⊳ Run_8-15_16	View Calendar	View Calendar	😮 Failed		35	8/15/2012	5:04:40 PM
	<u>292</u>	▶ Run_8-15_16	Number Of Pass	Number Of Pass	Passed		34	8/15/2012	5:00:48 PM
	<u>291</u>	> Run_8-15_16	Departing Date	Departing Date	Passed		80	8/15/2012	5:00:19 PM
8	<u>290</u>	⊳ Run_8-15_16	Flight Reservation	Flight Reservation	😮 Failed		113	8/15/2012	4:57:54 PM
	<u>288</u>	⊳ Run_8-15_16	Departing And Ar	Departing And Ar	📀 Passed		92	8/15/2012	4:55:28 PM
	<u>289</u>	▶ Run_8-15_16	Flight Reservation	Flight Reservation	Not Completed		10	8/15/2012	4:55:27 PM
om	ments Repor	rt Attachments His	tory						
									Add Comm

2. View detailed test results from the Test Set Run Details dialog box.

Click the **Test Set Runs** tab. Select the **Mercury Tours Site** test set run in the grid and click the **Test Set Run Details** button. The Test Set Run Details dialog box opens, containing details about the test set run.

3. Close the Test Set Run Details dialog box.

Click the **Close** button.

4. View test run information in the Execution Report page.

Select the **Mercury Tours Site** test run and click the **Show Report** button. The **Execution Report** page opens. The Execution Report page displays information about the overall test set run and detailed information about each test instance run.

Viewing Test Results in the Test Runs Tab

In this exercise, you view the results of individual test instance runs.

To view test results in the Test Runs tab:

1. Make sure the Test Runs module is displayed.

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

iort E	v: Exec Date/De	scending];Exec Time[De	scendinal						Lee
8	Run ID	Run Name	Test: Test Name	Configuration:	Status	State	Duration	Exec Date	Exec Time
	293	⊳ Run 8-15 16	Returning Date	Returning Date	Passed		184	8/15/2012	5:05:37 PM
	294	> Run_8-15_16	View Calendar	View Calendar	S Failed		35	8/15/2012	5:04:40 PM
	292	> Run_8-15_16	Number Of Pass	Number Of Pass	Passed		34	8/15/2012	5:00:48 PM
	291	> Run_8-15_16	Departing Date	Departing Date	🔮 Passed		80	8/15/2012	5:00:19 PM
8	290	⊳ Run_8-15_16	Flight Reservation	Flight Reservation	😮 Failed		113	8/15/2012	4:57:54 PM
	288	⊳ Run_8-15_16	Departing And Ar	Departing And Ar	🔇 Passed		92	8/15/2012	4:55:28 PM
	<u>289</u>	▶ Run_8-15_16	Flight Reservation	Flight Reservation	Not Completed	_	10	8/15/2012	4:55:27 PM
Corr	ments Repo	t Attachments His	tory						
									Add Comm

2. View detailed test results from the Test Run Details dialog box.

Make sure the **Test Runs** tab is displayed. Select the **American Express** test run and click the **Test Run Details** button. The Test Run Details dialog box opens.

- 3. View other test run information in the Test Run Details dialog box.
 - a. Click Report to display results and test step details of the run.
 - b. Click Linked Defects to list the defects linked to the run.
 - c. Click **History** to list the changes made to the run.
- 4. Close the Test Set Run Details dialog box.

Click the **Close** button.

Viewing Test Results in the Test Instance Properties Dialog Box

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.

To view test results in the Test Instance Properties dialog box:

1. Make sure the Test Lab module is displayed.

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

- 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.

Click the **Test Instance Details** button. The Test Instance Details dialog box opens.

5. View test run information.

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

Jest Instance Details									<u> </u>
	~§ 😡	a 🔠 Þ							
Name: [1]American Express			Cycle	Cycle 1 - Ne	w Fea	tures Type:	MANUAL		
Details	×	9 🖸 🔽 - 🛛	∏ ⊠ • @ I⊳	Continue Manu	ual Ru	ın			
Runs Recution Settings								Leger	nd
Attachments	Sort B	y: Exec Date[Des	cending];Exec Time[Descending]					
Linked Defects	6 8 P	Run ID	Run Name	Stat	JS	Duration	Exec Date	Exec Time	
Weistory	UUI								
		<u>383</u>	🖹 Run_11-12_	1 🔇 Passed		25	11/12/2013	1:25:11 PM	١
·									
	Com	ments Report							¥
	St	ep Name	Status	Exec Date	*	Steps Details			
	Ste	ep 1 - Enter URL	✓ Passed	11/12/2013		Description: Log into Mercury tours			*
		ep 2 -Select a fligh		11/12/2013		Log into mercury tours			
		ep 3: Enter depart ep 4: Enter passer		11/12/2013	-				
		ep 5: Enter credit o	-	11/12/2013	-	Expected: User is logged in to Me	roup (Tours		
	4		*		•	oser is logged in to me	reary rours.		Ŧ
					_				
						_	01/ 0		
						•	<u>O</u> K <u>C</u> ai	ncel <u>H</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 52).

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

Note: This exercise is not available for HP ALM Essentials Edition.

To view test coverage:

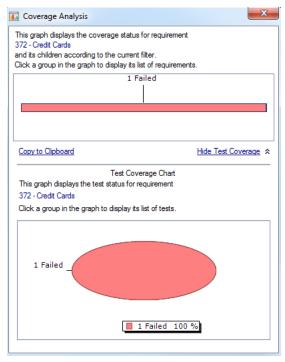
- 1. Display the Coverage Analysis view in the Requirements module.
 - a. On the ALM sidebar, under Requirements, select Requirements.
 - b. Choose View > Coverage Analysis. The Coverage Analysis view is displayed.
- 2. Filter the coverage analysis by cycle.
 - a. On the upper-right side of the window, 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 that covers the requirement failed.

Requirements Edit View Favorites	Analysis
📓 🐮 🗙 🕻 😋 🔽 - 🛛 🔍 🖉	♣ ➡ ▲ ↑ * Execution analysis by cycle(s): Cycle 1 - New Features Settings
No Filter Defined	
Name 4	Coverage Analysis
- Requirements	102
▶ 🚞 Business Models	21
Mercury Tours Application	65
Online Travel Booking	18
Image: Contine Travel Informati	
Profile Management	3
Reservation Managem	10
Booking System	6
Application Security	4
Application Usability	15
Application Client Syst	2
Application Performan	7
🚽 🥅 Payments	1
💡 Credit Cards	Failed
Assemble order	5
Contract processing	11

Coverage analysis last calculation time: 11/12/2013 14:04:03.

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.

🔁 Select 🔒 S	Status Filter: Faile	d 🗸 🖸	🕽 🝸 📲 🔣 Full Coverage	
Filter: Coverage Stat	tus["Failed"]			
Coverage Type	Entity Name	Coverage Status	Coverage Mode	
Test	💺 <u>Credit Cards</u>	📀 <u>Failed</u>	All Configurations	
Test Configuration	Status			
Test Configuration) Status			
_	Status			
-	Description	Status		
Tx 🖸 Name	Description			
Name American Express	Description	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 27).

In this exercise, you will view the graphs and statistics that now reflect the results of tests you ran in previous exercises.

Note: This exercise is not available for HP ALM Essentials Edition.

To view coverage progress:

¥

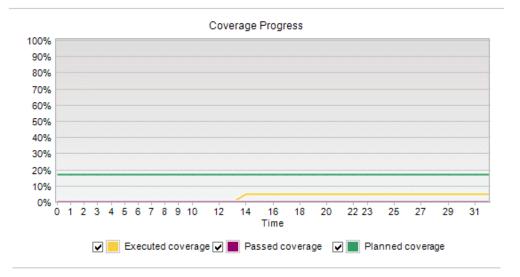
1. Display the Releases module.

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.

Details Attachments Progress Quality			
Total days in cycle:	32	Di	avs
Remaining days in cycle:	17		6%
Total test instances for cycle:	9	Elapsed	Remaining
Remaining test instances to run:	6	Test Inst:	ance Runs
Required execution rate (test instances/day):	0.28		3%
Actual execution rate (test instances/day):	0.20	Completed	Remaining



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.

Chapter 6: Adding and Tracking Defects

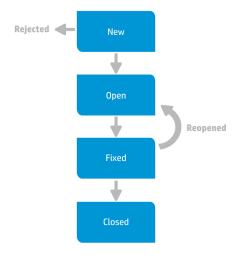
Locating and repairing defects is an essential phase in application development. Defects can be detected and submitted by users in all stages of the application lifecycle management process. Using ALM, you can submit defects detected in the application and track them until they have been repaired and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

In this lesson, you will learn about:

How to Track Defects	
Adding New Defects	
Matching Defects	
Updating Defects	
Linking Defects to Tests	
Creating Favorite Views	

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 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 11.

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			
🗙 💩 - 🥙 💀 🏥 🕵 • Summary:	Use Default Values 🔲 Set Default Valu	es	
 Details Attachments 	Details • Category: • Detected on 10/24/2013 Actual Fix Ti Description: B I I I I I I I	Severity: Assigned To:	alex_alm
		Subm	it 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.

Note: If you are using HP ALM Essentials Edition, HP Quality Center Community Edition, or HP Quality Center Express 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.
 - c. Type the URL address of the Mercury Tours page:

http://newtours.demoaut.com/

- 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 the Defect.
 - 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 the defect you added in "Adding New Defects" on page 100.
- 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 f	or: Missing inf	formation on	Proximity %:	25 💭 Search 🔣 🖓 🦻 🗐 🗙
6 🛚 单 🏲	Defect ID	Summary	Description	Comments
8	<u>33</u>	Missing infor	The defect w	
Item 1 of	f 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.

Note: If you are using HP ALM Essentials Edition, HP Quality Center Community Edition, or HP Quality Center Express 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 100. Click the **Defect Details** button. The Defect Details dialog box opens.

Defect Details							x		
	🗗 - 🛓 🖂 - 🖓								
Defect ID: 83	Defect ID: 83 Summary: Missing information on Flight Confirmation page.								
Details Details									
S Linked Entities	Category:	Defect	\sim	Detected By:	alex_alm	$\mathbf{\Sigma}$	Î		
	Detected on Dat	10/24/2013	\sim	 Severity: 	2-Medium	~			
	Actual Fix Time:			Assigned To:		~			
	Browser:		\sim	Closed in Versio		~			
-	Closing Date:		~	Detected in Cycl	Cycle 1 - New	Fea 🔲 🗸	~		
	Description:			Comments:		Add Comn	ient		
	BIUAD	≣ E ⊡ ⊡ ∎4	9 °	B I U A ab	≣≣∎ œ∣⊧	¶¶0 🦻 🤁	۱ » ۲		
	The defect was def Confirmation page. meal preferences a	Passenger details ar	nd						
					<u>O</u> K <u>C</u> an	cel <u>H</u> elj			

3. Change the severity level of the defect.

In the Severity box, select 5-Urgent.

Note: If you are using HP ALM Essentials Edition, HP Quality Center Community Edition, or HP Quality Center Express Edition, proceed to Step 5.

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

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 106.

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.

Note: If you are using HP ALM Essentials Edition, HP Quality Center Community Edition, or HP Quality Center Express Edition, ignore this step.

- a. In the Defects Grid, select defect 35.
- 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, 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	X
Update Field: Value:	Actual Fix Time
	<u>U</u> pdate 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.
- e. Click the arrow adjacent to the Value box. The users list opens.

	🔍 🗌 Vie	w by Group)	
🔒 Name		Fu	ll name	
🔓 alex_alm				
🔓 alice_alm				
🔓 ba1				
🔓 cecil_alm				
🔓 deveng1				
🔓 james_alm				
🔓 kelly_alm				
🔓 mary_alm				
🔓 michael_alm				
🔓 paul_alm				
🔓 peter_alm				
	OK	Cancel	Clear	

- 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.

Note: If you are using HP ALM Essentials Edition, HP Quality Center Community Edition, or HP Quality Center Express 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.

Defects To Link								
No Filter Defined								
Defect ID Detected By Assigned To Status Summary								
	1	- l'an alas		- 1	Fixed	The line of flin		
• -	1	alice_alm	james_			The list of flig		
8 单	2	alice_alm	james_		Reopen	The list of ava		
8 单	3	alice_alm	james_		Open	The list of flig		
8	<u>4</u>	alice_alm	james_		Closed	Nothing happ		
æ	<u>5</u>	alice_alm	james_	alm	Open	The list of flig	~	
Summa Descrip	,	of flights is given	even wh	en past o Comm		-	omment	
BI	<u>U</u> A 🔤 🧮	E @ @ M ·	¶⊲	BI	<u>U</u> A 🕹 🗎	<u>}</u> = • ∎ • ¶⊲	9 °	
Test Set: Mercury Tours Functionality Test: [1]Departing Date Run: Run_9-2_10-26-57								
						Link <u>C</u>	ancel	

b. Select the defect you added in "Adding New Defects" on page 100 and click the Link button. Your defect is added to the Linked Defects grid.

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. In the Defects Grid, click the defect ID of the defect you added in "Adding New Defects" on page 100. 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 🔁 🖺			
	No Filter Defined			
	Filter Cross Filter	Vie	ew Order Group	
	Field Name		Filter Condition	-
	Actual Fix Time			
	Assigned To			
	Browser			
	Category			
	Closed in Version			
	Closing Date			
	Defect ID			
	Detected By			
	Detected in Cycle			
	Detected in Release			
	Detected in Version			
	Detected on Date			
	Estimated Fix Time			
	Language			~
			<u> </u>	
l				<u> </u>

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			X
Condition:			Cle	ar
	And Or	•		
🔒 Name	Full name	^	(
[CurrentUser]) Not	=
🔒 alex_alm			>	
alice_alm			<	
🍰 ba1			>=	
🔓 cecil_alm			<=	
Le		v		
	<u>o</u> k	<u>C</u> ancel	<u>H</u> el	lp 🗌
L				

- 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**.

Condition:	Not Closed	Clear

- 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			X
* Name			
📸 🗙			
Private			
Public			
	<u>0</u> K	<u>C</u> ancel	<u>H</u> elp

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

Fa	avorites Analysis		
☆	Add to Favorites		
ø	Organize Favorites		
E] Private	Þ	🚖 My detected defects (status 'Not Closed').
E	Public	►	
슚	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
📑 🗙
✓
My detected defects (status 'Not Closed').
▶ 🚍 Public
Use drag and drop to move favorites and folders.
Close <u>H</u> elp

- 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.
 - Private
 - My detected defects (status 'Not Closed').
 - Public

QA Defects

- 😭 QA Bug Verification
- ☆ QA Team Member My Fixed and Rejected defects
- 😭 R&D Team Member Defects Assigned to Me
- 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.

Chapter 7: Alerting on Changes

You can instruct 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	. 112
•	Creating Follow Up Alerts	114

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 "Creating and Viewing Coverage" on page 49) and defects with other ALM entities (see "Linking Defects to Tests" on page 106). 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 change of Direct Cover Status	Tests	Test designers
and risk-based quality management fields)	Requirements	Requirement authors
Defect status changed to Fixed	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 View Reservations requirement.
 - a. Click the **Details** tab.
 - b. Click the down arrow adjacent to the **Priority** box and select **5-Urgent**.

Note: 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.

Note: 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.

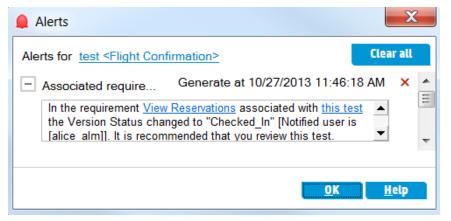
Tip: If you cannot find the test in the test coverage grid, click the **Set Filter/Sort** arrow and choose **Clear Filter/Sort** to clear the filter that is applied to the grid.

b. Click the Refresh All button.

68	•	Na	me		
		-	P	Su	bject
			⊬	7	Unattached
			⊩		Cruises
			•		Flight Reservation
				•	🛅 Book Flight
				-	Flight Confirmation
8	<u> </u>				Flight Confirmation
6					Flight Confirmation Navigation
6	•				Flight Confirmation Page
					Print Confirmation
				•	🔁 Flight Cost
6				•	🛅 Flight Finder
				•	Elect Flight
U					Flight Reservation
	•				Plight_Reservation
					Flight_Reservation_Stress
			⊬		Itinerary
			Þ		Mercury Tours Site
			⊧		Modeling
			►		Payment Methods

The **Flight Confirmation** test has an alert flag , 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.

Note: 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	X
Follow up by: Description:	10/27/2013	
	<u>OK</u> <u>C</u> ancel C <u>l</u> ear	<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.

🌇 New Defect 🗙 💋 🝸 🗸 眠 🕨 🔻 🔤 🗸 🖓 🕶 🔍 🗐 🕡							
No Filter Defined							
0 8	8	n Pe	Actual Fix	Assigned To	Browser	Category	Closed in
0 8	D			many alm		Defect	
				mary_alm			
00				mary_alm		Defect	
8				peter_alm		Defect	
8	8		3	peter_alm		Defect	
8	8	h i		mary_alm		Defect	
8	B					Defect	
8	8					Defect	
8						Defect	
0 0				alice alm			
00							
e	9						
8		ie.		mary alm		Defect	

Chapter 8: Analyzing ALM Data

ALM reports and graphs help you assess your application lifecycle management process. You can generate reports and graphs at any time during the process.

Project reports enable you to design and generate versatile reports containing information from the ALM project.

You can create graphs or project reports 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 and reports 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	117
Generating Graphs	121
Generating Entity Graphs in the Analysis View Module	
Generating Business View Graphs in the Analysis View Module	
Generating Predefined Graphs	132
Sharing Graphs	
Generating Business View Excel Reports	
Generating Dashboard Pages	

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 11.

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 who 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.
 - c. Click **OK**. A new project report is added to the folder you created. Notice that the icon represents a project report.

The Configuration tab is selected.				
Details Configuration View				
🖄 🗶 🏠 🦊 🖳 Preview 🐺 Generate	e 💆 Download As Zip 🕴	🖺 Template Creator		
Document	- Document Output Optio Output Format : - Document Templates - Document Template : Style Template : History Template : - Document Additional O	HTML V Document Template Style Template History Template	 ✓ ≝ ✓ ≝ ✓ ≝ 	E
	Auto-Update Table Embed Text and In Select a Baseline :	of Contents nage Attachments	V	

- 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 Rep	ort Sectio	n	X
Type Tests			~
Name Tests			
	OK	Cancel	Help
	<u>0</u> N	<u>c</u> ancer	Tech

- 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
Type Defects
Relationship
Linked Defects 🗸
Name
Linked Defects
OK Cancel Help
Current Treep

- 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		
🖆 💥 🏠 🤯 🔯 🖓 Preview 🗃 Generate	e 붗 Download As Zip l 🛍 Template Creator	
 ▲ Model Preview ▲ Generate → Document → Tests └─ Linked Defects 	Download As Zip Template Creator Document Output Options Output Format : HTML HTML Document Templates Document Template : Document Template Vie Template : Style Template History Template : History Template Vie Document Additional Options : Document Additional Options : Embed Text and Image Attachments Select a Baseline : Vie Template : Vie Template	E
		Ŧ

- 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 Template Field Values				
- Choose A Field				
Field Names	Field Value			
Project Title1 summary Author	Project			
	·			
	<u>OK</u> ancel <u>H</u> elp			

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				
쒑 🗶 🏠 🖟 🕹				
 → Document → Tests → Linked Defects 	- Report Section Details Name : Tests Eritty : Tests Relationship Type : None - Template Details @ Project Template : Custom Template : @ No Template (This section is for relationship purposes only) - Filter ??			
	- Graph Selection			

- 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.
 - 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 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.

You can create two types of graphs, entity graphs or business view graphs. Entity graphs display data directly from the various modules. Business view graphs are based on project entities, and ensure that only information that is relevant to a business consumer is contained in the graph.

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

This section includes:

Generating Entity Graphs in the Analysis View Module	
• Generating Business View Graphs in the Analysis View Module	
Generating Predefined Graphs	
Sharing Graphs	

Generating Entity 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 an entity graph that summarizes the defects by status and priority level.

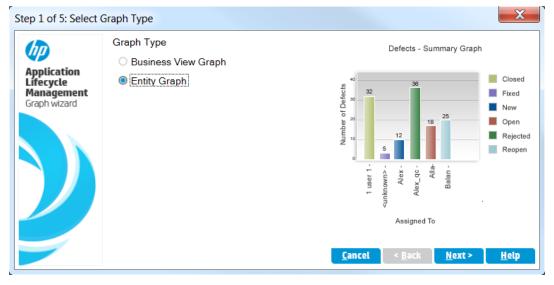
To generate an entity graph in the Analysis View module:

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 to the Select Graph Type page.



- 3. Select the graph type. Select **Entity Graph**.
- 4. Select the entity type.

a. Click Next. The Select Entity Type page opens.

	Entity:	Defeate Summer Cranh	
	Defects 🗸	Defects - Summary Graph	
Application Lifecycle	Graph Type	40 36 Clos	ed
Manágement	Summary Graph	32 Fixe	d
iraph wizard	O Progress Graph	25	1
	Trend Graph	32 30 0 0 0 0 18 12 10 12	n
	O Age Graph	E 10 12 Reje	
	Description	o	por
\mathcal{D}	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 x-axis, the type of data displayed along the y-axis, and the defect information by which	1 user 1 - 4 unknown> - Alex_de - Alex - de - Allan - Balan -	
	data is grouped.	<u>Cancel < Back N</u> ext > <u>H</u> el	P

- b. Under Entity, select Defects.
- c. Under Graph Type, make sure Summary Graph is selected.
- 5. Select the projects to include.

Note: If you are using HP ALM Essentials Edition, HP Quality Center Community Edition, or HP Quality Center Express Edition, ignore this step.

a. Click Next. The Select Projects page opens.

Step 3 of 5: Select I	Projects				X
Application Lifecycle Management	Project Selection Use Current Project Use Selected Projects 		Defects - Summary Graph	Closed	
Graph wizard	Domain	Project		32 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	New
	DEFAULT	ALM_Demo		° 20 25 	Open
				6	Rejected Reopen
				1 user 1 - <unknown> - Alex - Alex - Alla- Balan -</unknown>	
				Assigned To	
				<u>C</u> ancel < <u>B</u> ack <u>N</u> ext >	<u>H</u> elp

- 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.
- 6. Define a filter to view defects with high to urgent priority.

a. Click Next. The Select Filter page opens.

Step 4 of 5: Select	Filter		X
	Filter Selection Do not use a filter		Defects - Summary Graph
Application Lifecycle Management Graph wizard	O Define a new filter	Filter	Assigned To
			<u>C</u> ancel < <u>B</u> ack <u>N</u> ext > <u>H</u> elp

- b. Under Filter Selection, select Define a new filter. Click the Filter button. The Filter defects dialog box opens.
- c. Click the down arrow 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. The condition appears as follows:

Condition: >= 3-High Clear

- f. Click **OK** to close the Select Filter Condition dialog box.
- 7. Define a filter to view defects that are not closed.
 - a. Click the down arrow 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. The condition appears as follows:

Condition:	Not Closed	Clear
Condition.	NULCIUSEU	

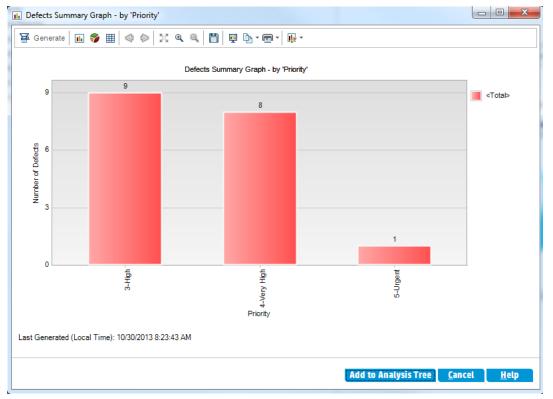
- d. Click **OK** to close the Select Filter Condition dialog box.
- e. Click **OK** to close the Filter defects dialog box.
- 8. Set the graph attributes.

a. Click Next. The Select Graph Attributes page opens.

Step 5 of 5: Select	Graph Attributes	X
(p)	Group By field: <none></none>	Defects - Summary Graph
Application Lifecycle	X-axis field:	40 Closed
Management Graph wizard	Assigned To	8 32 Fixed ■ Fixed ■ New
		store and the second s
		1 user 1- <unknown> - Alex - Allex - Balan -</unknown>
		Assigned To <u>C</u> ancel < <u>B</u> ack Finish <u>H</u> elp

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

Is New Graph	
Graph Name:	
Defects Summary Graph - by 'Priority'	
Select Folder	New Folder
Private	
▶ 🛅 Public	
S	ave <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.
- 11. 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.

📊 Drill D	own Results					
My_analy	sis_items Chart Drill-Do	own. X-Axis: 3-High, C	àroup-By: <total>, Nu</total>	umber of items: 9		∰ - II
6 🛚 🗭 🏲	Defect ID	Actual Fix Time	Assigned To	Browser	Category	Closed in
8 单	1		james_alm	Internet Explorer	Defect	
8 单	<u>3</u>		james_alm		Defect	
8	Z		peter_alm		Defect	_
 <	٩		many alm		Defect	×
Test: [1] Run: Ru Step: St Descrip 1. Selec 2. For th Check e	: Mercury Tours Fur Departing Date In_9-2_10-26-57 ep 1: Past Departin	g Date on. elect any past date possibilities:	E Commen	ts:		Add Comment

- b. Close the Drill Down Results dialog box.
- 12. 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 Business View Graphs in the Analysis View Module

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

To generate a business view 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**.

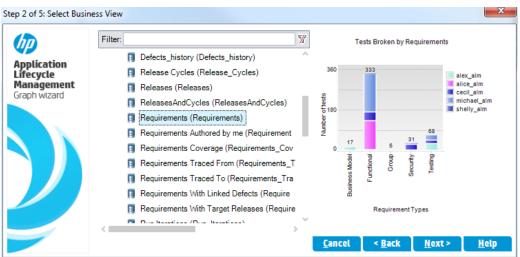
2. Open the graph wizard.

Click the **New Item** button and select **Graph Wizard**. The graph wizard opens to the Select Graph Type page.



- Select the graph type.
 Select Business View Graph.
- 4. Select the business view.

a. Click Next. The Select Business View page opens.



- b. Select Requirements.
- 5. Select the projects to include.

Note: If you are using HP ALM Essentials Edition, HP Quality Center Community Edition, or HP Quality Center Express Edition, ignore this step.

a. Click Next. The Select Projects page opens.

Application Lifecycle Management	Project Selection Use Current F Use Selected	-	Select	360	т	ests Br	oken b	y Requ	iremer	alex_alm
Graph wizard	Domain DEFAULT	Project Demo		Number of tests	17 Index Model	Functional	Group o	31 Aturnoeg	Testing	ceci_alm michael_alm shelly_alm
				<u>C</u> an	cel		<u>B</u> ack		<u>N</u> ext	t> <u>H</u> elp

- 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.
- 6. Define a filter to view requirements with high to urgent priority.

a. Click Next. The Select Filter page opens.

D	77 🖻 📋			1	Tests Br	oken b	y Requ	uirement	s
plication	No filter was defined.								
ecycle	Field Name 🛛	Criteria	^	360	333				alex_alm
ph wizard	Parent Reg ID			ø					alice_alm
pri wizaru	Parent Reg Name			Number of tests					michael_alm shelly_alm
	Priority		ther o						
	Product						31	68	
	Reg ID			0 17		6			
\mathcal{D}	Req Name			Business Model	Functional	Group	Security -	Testing	
	Req Order ID			ess	Func	0	Se	Ļ.	
	Req Path			Busir					
	Req Type ID				R	quirem	ient Typ	pes	
	Reg Type Name		v						

- b. Click the down arrow in the Criteria column adjacent to the **Priority** field. The Select Filter Condition dialog box opens.
- c. In the right pane, select the logical expression >=.
- d. In the left pane, select **3-High**. The condition appears as follows:

Condition:	>= 3-High	Clear
	2	

- e. Click **OK** to close the Select Filter Condition dialog box.
- 7. Define a filter to view defects that are not closed.
 - a. Click the down arrow in the Criteria column adjacent to the **Reviewed** field. The Select Filter Condition dialog box opens.
 - b. In the left pane, select Not Reviewed. The condition appears as follows:

Condition:	Not ='Reviewed'	Clear
------------	-----------------	-------

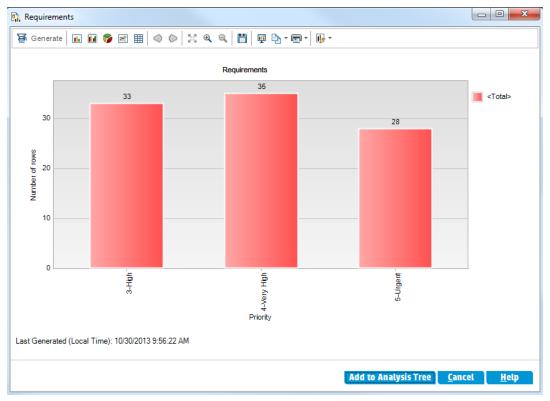
- c. Click **OK** to close the Select Filter Condition dialog box.
- 8. Set the graph attributes.

a. Click Next. The Select Graph Attributes page opens.

hp	X-Axis : Reg ID	~		т	ests Br	oken b	y Requ	irement	s
pplication ifecycle	Y-Axis :	•	360		333				alex_alm
lanagement	Count	~							alice_alm
raph wizard	Grouped By:		Number of tests						<pre>cecil_alm michael_alm shelly_alm</pre>
	<none></none>	~	ther o						siteny_ann
			un Z	17			31	68	
			0	_	ė	6	ž	ġ	
				s Mod	Functional	Group	Security -	Testing	
				Business Model -	P.		07		
					Re	quirem	entTyp	oes	
			<u>C</u> an	cel	<	<u>B</u> ack		Finis	h <u>H</u> elj

- b. Under **X-axis**, select **Priority** and under Y-axis, select **Count** to view the number of requirements by priority.
- c. Under **Grouped By**, make sure that it is set to **<None>**.
- 9. Generate the Graph.

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



The graph shows a summary of requirements with **High** to **Urgent** priority that have not been reviewed.

- 10. Save the graph in the Analysis View module.
 - a. Click Add to Analysis Tree. The New Business View Graph dialog box opens.

🛐 New Business V	liew Graph	
Business View Gra	ph Name:	
Requirements		
Select Folder		New Folder
Private		
🕨 🚞 Public		
	Save	<u>C</u> ancel

- b. Expand the **Private** folder, and select **My_Analysis_Items**.
- c. Click **Save**. The Requirements graph is saved in the analysis tree, and displayed in the View tab.
- 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.

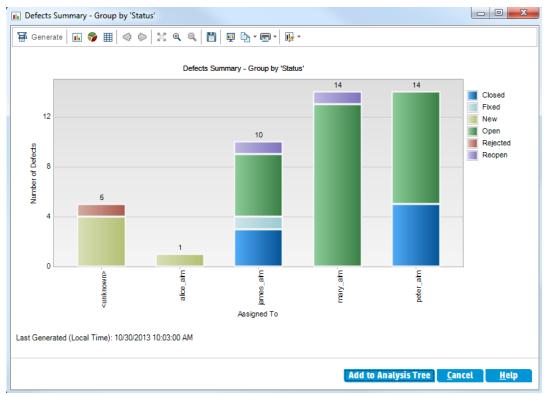
On the ALM sidebar, select **Defects**.

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 Entity Graphs in the Analysis View Module exercise.

To share a graph:

1. Display the Analysis View module.

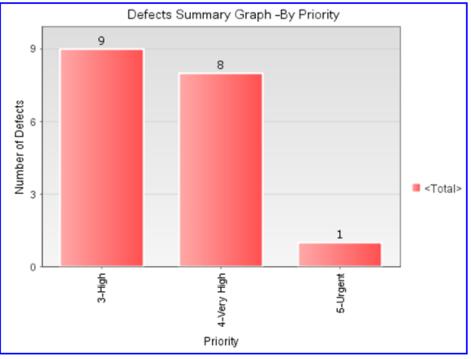
On the ALM sidebar, under Dashboard, select Analysis View.

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

Share Analysis Item	<u> </u>
You can share analysis items by copying an analysis item URL, and pasting the link in a website or email. Clicking the URL opens the analysis item directly in a web browser, without having to download the application client.	e
Copy Analysis Item URL (Authentication Required)	
Sharing the Analysis Item Address enables users to view a read-only version of the analysis item directly in their browser window. To view the analysis item, users are requested to enter their name and password.	
C Copy Analysis Item Public URL	
Sharing the Analysis Item Public Address enables others to view a read-only version of the analysis item directly in their browser window. No authentication is required to view the analysis item.	(
Reset Analysis Item Public URL	
Select this option to block access to the read-only version of the analysis item using the previously copied URL.	
<u>OK</u> ancel <u>H</u> elp	

- 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.



Last Generated: 10/30/13 1:06:57 PM Go to graph in Application Lifecycle Management

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

Generating Business View Excel Reports

You can create Excel reports based on business views. A business view is a data layer that exists on top of the database and which reflects only those project entity fields that represent information that is useful from a business perspective. Business views can be based on single entities, such an Baselines or Defects, while others can represent more complex relationships between entities, such as Defects With Linked Requirements. The reports are created and configured in Microsoft Excel, and uploaded to the Analysis View module.

In this exercise, you will use Microsoft Excel to generate a business view Excel report that summarizes the defects by status and priority level.

Note: The HP ALM Business Views Microsoft Excel Add-in supports only Microsoft Excel 2010 (32-bit) and Microsoft Excel 2013 (32-bit). If you are using a different version of Microsoft Excel, proceed to "Generating Dashboard Pages" on page 139.

To generate a business view Excel report 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. Create a new business view Excel report.
 - a. In the **Private** folder, select the **My_Analysis_Items** folder.
 - b. Click the **New Item** button and select **New Business View Excel Report**. The New Business View Excel Report dialog box opens.
 - c. In the **Business View Excel Report Name** box, type High Priority Open Defects.
 - d. Click **OK**. A new business view Excel report is added to the folder you created. Notice that the R icon represents a business view Excel report.

The Configuration tab is selected.

Details Configuration	View
Generate 🎇 New	Excel 🎍 Install Addin 🛪
-Excel File	
File name :	≜

- i) Excel report cannot be generated until an excel file is uploaded.
- 3. Open Excel.
 - a. Click Install Addin. The HP ALM Business Views Microsoft Excel Add-in is installed in Excel.
 - b. Click **New Excel**. Microsoft Excel opens with the HP ALM tab in the ribbon.
 - c. In the **HP ALM** tab, click **Login**. The ALM login window opens. Log in exactly as you logged in to ALM at the beginning of the tutorial.
- 4. Generate the business view report in Excel.

a. Click Add. The Add Worksheet dialog box opens.

dd Worksheet								
Select one or more business views for the report worksheets:								
Filter:								
▼ ☐ Business Views								
Baselines (Baselines)								
Components (Components)								
Defects (Defects)								
Defects Assigned to me (Defects_Assigned_to_me)								
Defects With Linked Defects (Defects_With_Linked_Defects)								
🔋 Defects With Linked Requirements (Defects_With_Linked_Req								
Defects With Linked Tests (Defects_With_Linked_Tests)								
🔋 Defects With No Linked_Req (Defects_With_No_Linked_Req)								
Defects_history (Defects_history)								
🔋 Release Cycles (Release_Cycles)								
🚦 Releases (Releases)								
🔋 ReleasesAndCycles (ReleasesAndCycles)								
Requirements (Requirements)								
Description:								
<u>OK</u> ancel <u>H</u> elp								

- b. Select Defects.
- c. Click **OK**. A new business view Excel worksheet is added and the Worksheet Configuration pane is opened.

Fields	et Config Filter	Sorting	Adva	nced	
select fiel	ds to be i	ncluded in th	ie curre	ent wo	rksheet:
Defects F	ields:				Selected fields:
				>	Defect ID Summary Description Priority Severity Status Estimated Fix Time Actual Fix Time Assigned To Comments Detected By Detected in Version Detected in Version Detected in Release Name Detected in Release ID Detected in Cycle ID Detected in Cycle ID Detected on Date Has Change Closed in Version Closing Date Planned Closing Version Target Release ID Target Cycle ID Subject Name Subject ID Project Reproducible? Extended Reference TestSet Reference Modified
				< «	

- 5. Configure the business view report.
 - a. In the Filter tab, select Priority in the Field Name column.
 - b. In the associated **Criteria** column, click the arrow. The Select Filter Condition dialog box opens.
 - c. Click 4-Very High, Or, and 5-Urgent.
 - d. Click OK.
 - e. Select Status in the Field Name column.

- f. In the associated **Criteria** column, click the arrow. The Select Filter Condition dialog box opens.
- g. Click Not, Closed, And, Not, and Rejected.
- h. Click **OK**. The business view Excel report shows only those defects whose priority is **Very High** or **Urgent** and whose status is not **Closed** and not **Rejected**.
- 6. Save the new report in ALM.
 - Click Save and select Save to ALM. The Save Business View Excel Report dialog box opens.

R Save Business View Excel Report	
Business View Excel Report Name:	
Book4	
Select Folder	New Folder
▶ 🛅 Private	
▶ 🛅 Public	
	Save <u>C</u> ancel <u>H</u> elp

- b. In the Select Folder box, browse to the **My_Analysis_Items** folder and select the High Priority Open Defects report. The Business View Excel Report Name box is automatically valued with High Priority Open Defects.
- c. Click Save.
- d. Click Yes in the Replace Confirm message. The report is saved to ALM.
- 7. Generate the report in ALM.
 - a. Return to the Analysis View module in ALM.
 - b. Click **Refresh**. The High Priority Open Defects report is selected with the Configuration tab open.
 - c. Click Generate. The Download Excel File dialog box opens.
 - d. Browse to the location on your client machine where you want to save the Excel report, enter High Priority Open Defects in the **File name** field, and click **Save**.

The report opens in Excel with the latest data included.

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.

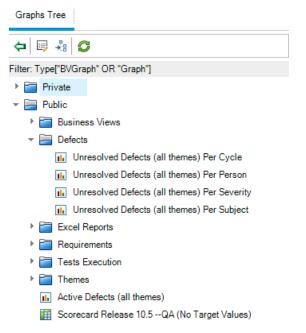
In this exercise, you will create a dashboard page for the defect graphs in the public folder.

To generate a dashboard page:

1. Display the Dashboard View module.

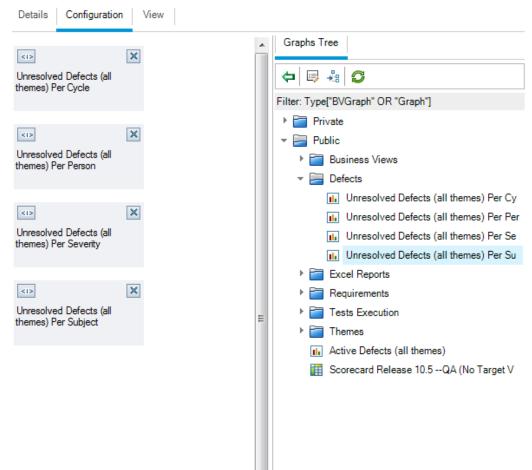
On the ALM sidebar, under Dashboard, select Dashboard View.

- 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.

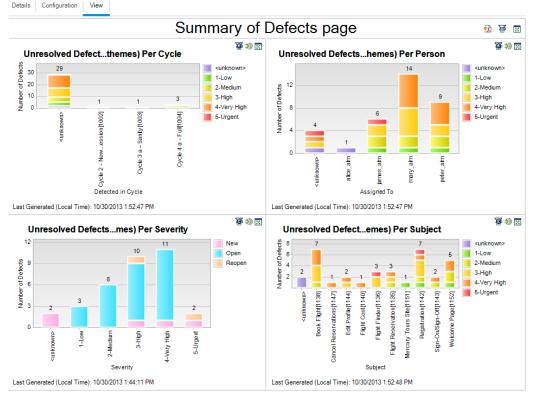


4. Rearrange the dashboard page.

- 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.

<d td="" x<=""><td><1></td><td>×</td><td>Graphs Tree</td></d>	<1>	×	Graphs Tree
Inresolved Defects (all themes) Per Cycle	Unresolved Defects (all themes) Per Person		4 🗏 🔅
			Filter: Type["BVGraph" OR "Graph"]
			▶ 🛅 Private
<d td="" x<=""><td><1></td><td>×</td><td>🔻 🚞 Public</td></d>	<1>	×	🔻 🚞 Public
Inresolved Defects (all themes) Per everity	Unresolved Defects (all themes) Per Subject		▶
-	-		🔻 🔚 Defects
			IIs Unresolved Defects (all themes) Per Cycle
			III Unresolved Defects (all themes) Per Person
			IIs Unresolved Defects (all themes) Per Severity
			III Unresolved Defects (all themes) Per Subject
			Excel Reports
			Requirements
			Tests Execution
			Themes
			Active Defects (all themes)
			Scorecard Release 10.5 QA (No Target Values)

- 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.

Chapter 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.

Note: This lesson is not available for HP ALM Essentials Edition, HP Quality Center Community Edition, and HP Quality Center Express Edition.

In this lesson, you will learn about:

•	Creating Libraries	.145
•	Creating Baselines	146
•	Comparing Baselines	147

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 11.

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.
 - a. Click the Create Library button. The New Library dialog box opens on the Content page.

•Name:	
Details Requirements Resources Components Tests	
Content	
Requirements	
<u>O</u> K Close <u>H</u>	lp

- 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	×
🛗 Save Log	
Verification results:	
Baseline expected content : Tests : 12 Requirements : 140	
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.

Details
• Name: Baseline 1 Baseline ID: 1001 Created By: sa Creation Date: 10/30/2013 1:00:
The Baseline is being created. View log Description
BIUAШ ≣≣⊑⊡⊡ ⊳¶¶⊲ ≝, ♥ ♥ ■ ♥ ♥ ♥ ■

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 the 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.
 - 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 in "Creating Baselines" on page 146. 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.

Compare Baselines Tool					
Requirements	문 한 3월				
🔄 Test Folders	Baseline:Baseline1 (Library:Library1)	В	Baseline:Baseline		
			A A 💷		
	No changes	A	Added:0 Modifie	d:1 Absent:0 Moved:0	D
	Entities		E	ntities	Changes
	Image: Mercury Tours Application		Image: Nercury Im	Tours Application	
				Clos	se <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.

Requirements	- 🔁 🕂 🕮			
Test Folders	Baseline:Baseline1 (Library:Library1)	Baseline:Baseline2 (Library:Library1)		
		A 🔬 📑		
	No changes	Added:0 Modified:1 Absent:0 Moved:0		
	Entities	Entities Change		
	→	- O Mercury Tours Application		
	 Application Client System 	▶		
	 Application Performance 	♦		
	 Application Security 	Application Security		
	→	→		
	 Orrect Error Messages 	▶		
	▶ (④) Keyboard Support	Image: New York N	Modified	
	Spelling And Language Correctness	►		
	▶ (Task Simplicity	▶		
	▶ (ⓐ) Web Page Structure And Layout Consiste	▶ 💿 Web Page Structur		
	▶	Booking System		
	Online Travel Booking Services	▶		
	♦ Online Travel Information Source	▶		
	Profile Management	Profile Management		
	▶	♦		

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

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

- 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.

Compare Entities - Requirements							
Compare Keyboard Support in "Baseline1" to Keyboard Support in "Baseline2"							
View: Show all							
🔯 Details	Show full	path					
Attachments	Changes	Keyboard Support in "Baseline1"	Keyboard Support in				
🔯 Requirement Traceability		🍃 Welcome Page	🛼 Welcome Page				
🕆 Test Coverage		HTML Page Layout	📴 HTML Page Layout				
		🖹 Tab Order	🖹 Tab Order				
		E Forms	E Forms				
	Added		HTML Page Source				
	[
	Configurati	on Coverage	¥				
	Changes	Keyboard Support in "Baseline1"	Keyboard Support in				
		Welcome Page	Welcome Page				
		HTML Page Layout	HTML Page Layout				
		Tab Order	Tab Order				
		Forms	Forms				
	Added		HTML Page Source				
			<u>C</u> lose <u>H</u> elp				

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

d. Click Close.

Chapter 10: Customizing Projects

In the previous lessons, you learned how to use 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	
Adding a New Project User	
Assigning a User to a User Group	
Defining a User-Defined Field	
Creating a Project List	
Creating Business Views	

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 11.

- 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.

a. On the ALM masthead, click is and select **Customize**. The Project Customization window opens.

Application Lifecycle	e Management -	Project Customization	Domain: DEFAULT, Project:	Demo User: alex_alm 🕜 Return
 Liser Properties Project Users Groups and Permissions Module Access Project Entities Requirement Types Inseksed Quality Management 	User Properties	ange Password alex_alm	Ful Name: Phone Number: Desctivation Date:	
Project Lists Automail Automail Automail Workflow Project Planning and Tracking Project Planning and Tracking Project Report Templates	e Description:			<u>.</u>
 Business Process Test Business Views Sprinter 				

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.
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 Detected in Build user-defined field to the New Defect dialog box. You can then associate it with a selection list containing the values for this field.
Requirement Types	Enables you to customize the definitions for requirement types. ALM Editions : This option is not available for HP ALM Essentials Edition, HP Quality Center Community Edition, and HP Quality Center Express Edition.

Option	Description
Risk-Based Quality Management	Enables you to customize settings for risk-based quality management. ALM Editions : This option is not available for HP ALM Essentials Edition, HP Quality Center Community Edition, and HP Quality Center Express Edition.
Project Lists	Enables you to add customized lists to a project. A list contains values that the user can enter in system or user-defined fields. For example, for the Detected in Build field, you can create a selection list containing the values Build1 , Build2 , and Build3 .
Automail	Enables you to set up automatic mail notification rules to inform users via email each time changes are made to specified defects.
Alert Rules	Enables you to activate alert rules for your project. This instructs 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.
Project Planning and Tracking	Enables you to create and customize the project planning and tracking (PPT) KPIs. ALM Editions : The Project Planning and Tracking link in Project Customization is not available for HP ALM Essentials Edition, HP Quality Center Community Edition, HP Quality Center Express Edition, and HP Quality Center Enterprise Edition.
Project Report Templates	Enables you to create and customize report templates that project users can assign to template based reports.
Business Process Testing	Enables you to configure Business Process Testing and Business Process Testing Enterprise Edition.
Business Views	Enables you to create business views that can be used as a basis for creating reports in the Analysis View module.
Sprinter	Enables you to configure settings for working with HP Sprinter for manual testing in ALM. ALM Editions : The Sprinter link in Project Customization is not available for HP ALM Essentials Edition, HP Quality Center Community 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 152.

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.

Proj	Project Users							
R	🖺 Save 🖨 Add User 🛪 🗙 Remove User							
8	Name	Ful	Details Mem	bership				
8	alex_alm							
8	alice_alm							
2	cecil_alm		User Name:	alex_alm	Full Name:			
2	james_alm		E th		Phone Number:			
2	kelly_alm		E-mail:		Phone Number:			
8	mary_alm		Status:	Active	Deactivation			
8	michael_alm			_	Date:			
8	paul_alm							
2	peter_alm							
8	robert_alm							
2	shelly_alm		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 down 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:			
	<u>0</u> K	<u>C</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					
P	🖹 Save 🛛 🖶 Add User 👻 🗶 Remove User					
2	Name	Full	Details Memb	ership		
2	alex_alm					
2	alice_alm					 1
2	james_alm		User Name:	cecil_alm	Full Name:	
2	kelly_alm		E-mail:		Phone Number:	
2	mary_alm		Enliqu.		Frione Number.	
2	michael_alm		Status:	🔒 Active	Deactivation Date:	
2	paul_alm				Date.	
2	peter_alm					
2	robert_alm					
2	shelly_alm					
2	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:

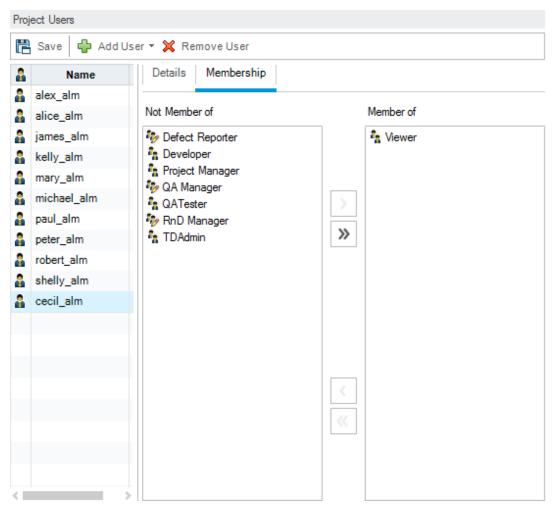
1. Make sure that the Project Users page is displayed.

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

Proj	Project Users				
P	🖹 Save 🛛 🖨 Add User 👻 Remove User				
2	Name Full	Details Memb	ership		
2	alex_alm				
2	alice_alm				
2	james_alm	User Name:	cecil_alm	Full Name:	
2	kelly_alm	E-mail:		Phone Number:	
2	mary_alm	E-mail:		Fhone Number:	
8	michael_alm	Status:	Active	Deactivation	
8	paul_alm		_	Date:	
2	peter_alm				
8	robert_alm				
8	shelly_alm				
2	cecil_alm	Description:			
					*

- 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 to which cecil_alm belongs and does not belong are displayed.



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 152.

2. Open the Project Entities page.

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

Project Entities			
🖺 Save 🖶 New Field - 💥 Delete Field			
▶ 👰 Baselines	Settings		
▶ 🦕 Business Component			
Business Process Model Activities			
Business Process Model Folders			
🕨 🛷 Business Process Model Paths			
Business Process Models			
► 🖒 Cycle			
Defect			
🕨 🐻 KPI			
▶ 🚇 Library			
🕨 🧼 Milestone			
🕨 🎯 Release			
▶ 🚞 Release Folder			
Requirement			
Resource			
Resource Folder			
🕨 📄 Run			
Scope Item			
▶ 🛴 Test			
Test Configuration			
Æ Test Instance			
▶ <p> Test Parameter</p>			
▶ л Test Set			
🕨 🍠 Test Step			

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.

Project Entities					
🖺 Save 🚽 New Field 🛪 🗙 Delete Field					١
 Baselines Business Component Business Process Model Activities Business Process Model Paths Business Process Models Cycle Defect System Fields BG_USER_06 Product Area Regression KPI Library Milestone 	Settings Name: Label: Type: Length: Sanitization type:	BG_USER_06 BG_USER_06 String 40 Text History Masked	Required Searchable	>	
► interest in the second seco	,				

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 152.

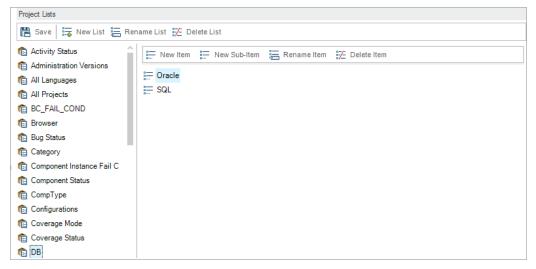
2. Open the Project Lists page.

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

	Project Lists			
	💾 Save 🔚 New List 🔚 Rena	ame List 🗱 Delete List		
	n All Projects	📰 New Item 📰 New Sub-Item 🔚 Rename Item 😥 Delete Item		
	EC_FAIL_COND			
	fin Browser	Requirement Authoring		
	💼 Bug Status	E Requirement Review		
	n Category	= Test Authoring		
	n Component Instance Fail C			
	n Component Status			
	n CompType			
	n Configurations			
	💼 Coverage Mode			
	💼 Coverage Status			
	HTML Edition Versions			
	💼 Java Edition Versions			
4	n Link Type			
1	n Model Prototype			
	n Operating System			
	n Parameter Types			
	n Plan Status			
	n Priority			
	n Product Area			
	RBQM Functional Complexi			
	RBQM Risk Levels			
	RBT Business Impact Level			
	n RBT Failure Probability Lev			
	RBT Testing Levels			
	Requirement Status			
	Requirement Type			
	Requirements			
	Resource Location			
	< >			

- 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.



- 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.

Project Entities				
💾 Save 🔮 New Field 🕆 💢 Delete Field				
 Baselines Business Component 	^ Settings			
Business Process Model Activities Email Business Process Model Folders	Name: Label:	BG_USER_06 Database		
Business Process Model Paths				
 A Business Process Models Cycle 	Type:	Lookup List		~
 Defect System Fields 	Length: Sanitization type:	255 None		~
▼ 🚍 User Fields		History	Required	
☞ Browser ☞ Category		Masked	Searchable	
G Database G Language	Lookup list			
Product Area	Activity Status		✓ New List	Goto List
 Regression KPI 	Verify value			
▶ ∰ Library	Allow Multiple Value	lues		
 Milestone Release 				
 P and the second second				
Requirement				

- 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.

New Defect		
🗙 🖓 - 🏷 尾 🗄 🗉	Use Default Values 🗐 Set Default Values	
Summary:		
Details	Details	
Attachments	Closing Date: 🗸 Database:	~
	Detected in Cycle:	~
	Detected in Versio 🗸 Estimated Fix Tim	
[Language: V Modified:	v
	Description:	
	ΒΙΨΑ∰ ≣ΞΞ⊄ Φητ≼ 🦻 🤁 ₩ 🖗 🔍 🖾	
	Submit Clos	se <u>H</u> elp

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**.

Creating Business Views

Business views are a semantic data layer that can be used as a basis for the various ALM reporting tools. Business views are based on project entities, and ensure that only information that is relevant to a business consumer is contained in the report.

In the following exercise you will create a business view for creating graph reports.

To create a business view:

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 152.

2. Open the Business Views page.

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

Business Vi	Ausiness Views				
💾 Save	🞁 Add View 💼 Duplica	ate View 🔀 Delete View 🛛 🍫 Validate All 🛛 🐗 Export Views 💠 Import Views			
👻 🖪 Vie	ews	Query Designer Details Query Messages			
	Baselines	View 🔻 😥 Add Entity 🖷 Add Related Entity 💥 Delete 🔯 Preview 🖌 Validate View Status Published 🗸	>>		
	Components		Ŧ		
2	Defects	Main			
A	Defects Assigned to m				
4	Defects With Linked De	Baseline (baseline) 🖾 Library (library) 🖾			
A	Defects With Linked Re				
4	Defects With Linked Te	Attachment (has_at Asynchronous statu			
4	Defects With No Linked	Auto complete type Attachment (has_at Baseline ID (id) Attachment ype			
4	Defects_history	Capture State (capt Created By (owner)			
4	Release Cycles	Created By (owner) Created from Baseli Creation Date (creat Created from Baseli Creat			
4	Releases	Created from Date (created from Date) Created from Domai			
2	ReleasesAndCycles	Is repository capture Created from Library Modified (vts) Created from Library			
2	Requirements	Modified (vts) Created from Library Name (name) Created From Librar			
A	Requirements Authore	Parent (Library) ID (Created from Projec			
2	Requirements Coverag	Version Stamp (ver Created or Synchroi			
4	Requirements Traced	Description (descrip			
2	Requirements Traced	Output Expression Label Alias Criteria Or Or			
A	Requirements With Lin	DQL Query Builder	-		
4	Requirements With Tar	Select baseline id. baseline name, baseline description, baseline owner, baseline creation date, library name As lib name, library id As lib id	-		
2	Run Iterations	From baseline Join library On baseline.lib_id = library.id			
A	Run Steps				
A	Runs	4			

- 3. Create a new business view.
 - a. Click Add View. The New View dialog box opens.
 - b. In the **Label** box, type Mercury Tour Defects. In the **Technical Name** box, type MT_Defects. Click **OK** to close the New View dialog box.
- 4. Add project entities to your business view.
 - a. Click **Add Entity** in the Query Designer tab. The Model tree opens in the right pane. The Model tree displays all project entities and fields in the current project.
 - b. Select the **Defect** entity and click the **Add** arrow to move it to the Main pane.
- 5. Define relationships between the project entities.
 - a. In the Main pane, select the **Defect** entity.
 - b. Click Add Related Entity. The Add Related Entity dialog box opens.
 - c. In **Target Entity**, click the arrow and select **Requirement**. The **Relation Name** field is automatically valued with **Linked Requirements**.

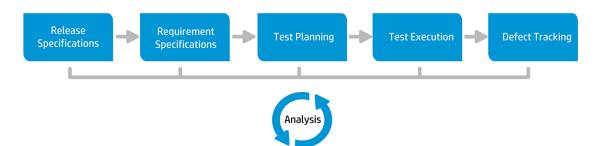
d. Click OK.

Business Views		
😤 Save 間 Add View 🕅	Duplicate View 🗶 Delete View 😼 Validate All 🌾 Export Views 🔅 Import Views	
Views & Baselines & Components & Defects & Defects Assign & Defects With Li	Query Designer Details Query Messages View	Model ×
A Defects With Li Defects With Li Defects With N Defects With N Defects With N Defects With N Defects Units N Defects Defects Defects Defects Releases Releases Releases Requirements Requirements	Defect (defect) Catual Fix Time Asagned To kyre Catada By towney Catada By towney	Filter: % Report To Report Project Templ Report User Template (report, u Report User Template (report, u Requirement (requirement) Requirement (requirement) Requirement History (requirement) Requirement Mist Value Baselin Requirement Mist Value Baselin Requirement Mist Value Versio Requirement Mist Value Baselin Requirement Mist Value Baselin Requirement Target Polesse (re Requirement Target Polesse (re Requirement Target Release (re Requirement Target Polesse (re Requirement Target Release (re Requirement Target Release (re Requirement Target Release (re Requirement Target Release (re Requirement Target Release (re Requirement Target Release (re) Requirement Target Release (re Requirement Target Release (re) Requirement Target Release (re Requirement Target Release (recourd)
🙏 Run Steps	Output Expression Label Alias Orteria Or Or	Resource Baseline (resource_b
🙏 Runs 🙏 Runs With Link		Resource Folder (resource_fold Resource Folder Baseline (reso
🙏 Test Configurati	DQL Query Builder	Resource History (resource_hist
🖧 Test Configurati 🍂 Test Design Ste	Select *	 Resource Multi Value (resource
A Test Instances	From defect Inner Join defect link On defect id = defect link first endpoint id	Resource Multi Value Baseline (
A Test Instances	nime Jon cence, jim Ki hoecula = deed, jim Kital, anaport, ja himer Jon reaument On requerement & effect jim kecond_endpoint_jd And defect jim kecond_endpoint_type = REQ'	Resource Multi Value Version C Becource Version Control (reso

- 6. Preview the new business view.
 - a. Click Validate. Any validation warning or error messages are shown in the bottom pane.
 - b. Click **Preview**. The Query Results are shown in the bottom pane.
 - c. Change the **Status** to Published.
 - d. Click Save.

Chapter 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 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.
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.

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