ALM

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Tutorial

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Tutorial

ALM

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Tutorial

Welcome to this Tutorial

Welcome to this Tutorial

Welcome to 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.

How This Tutorial is Organized

This tutorial contains the following lessons:

Chapter Description

"Introducing ALM" on page 9

"Specifying

Releases and Cycles" on

page 19

"Specifying

Requirements" on page 23

"Planning Tests" on page 32

"Running Tests" on page 50

"Adding and

Tracking Defects" on page 87

"Alerting on

Changes" on

page 99

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

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

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

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

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

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

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

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Tutorial

Welcome to this Tutorial

Chapter Description

"Analyzing ALM Data" on page 104

"Creating Libraries and Baselines" on page 128

"Customizing

Projects" on

page 135

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

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

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

Before You Begin

To work with this tutorial, consider the following specifications:

Specification Description

ALM Editions ALM is available in several editions which provide subsets of ALM functionality. For details, see ALM Editions.

This tutorial assumes that you are working in ALM Edition or Quality Center Enterprise Edition. To determine which edition you are using, contact your ALM site administrator.

ALM Demo Project

● The demo project is available from Marketplace After downloading the ALM Demo file, import it using Site Administration. For details on importing projects, see the Micro Focus Application Lifecycle Management Administrator Guide.

● 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 details, 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 details on version control, see the Micro Focus Application Lifecycle Management User Guide.

● 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, see the Micro Focus Application Lifecycle Management Administrator Guide. Running automated tests also assumes that you have a working UFT host set up for your project. For details, see Micro Focus Unified Functional Testing below.

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Welcome to this Tutorial Specification Description

Mercury Tours

Unified

Functional Testing

● 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/.

● To run the automated tests in this tutorial, Unified Functional Testing (UFT) must be installed.

● To integrate ALM with UFT, download and install the Micro Focus UFT add-in and the ALM Connectivity tool from the Application Lifecycle Management Tools page.

Sprinter ● To run manual tests in this tutorial, you can use Manual Runner, 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 Marketplace.

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Chapter 1: Introducing 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.

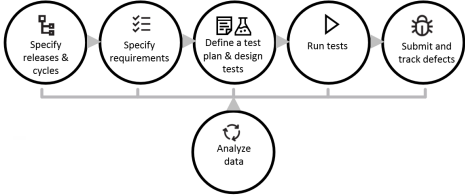
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Tutorial

Chapter 1: Introducing ALM

The ALM Process

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

Specify

releases and cycles

Specify

requirements

Design a test plan and design tests

Develop a release-cycle management plan to help you manage application releases and cycles efficiently.

Define requirements to meet your business and testing needs.

Based on the project requirements, you can build test plans and design tests.

Run tests Create a subset of the tests in your project designed to achieve specific test goals. Execute scheduled tests to diagnose and

resolve problems.

Submit and track defects

Submit defects and track their repair progress.

Analyze data 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 ALM URL.

To start ALM:

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Tutorial

Chapter 1: Introducing ALM

1. Verify tutorial prerequisites.

Before you begin the lessons in this tutorial, verify that you have the appropriate prerequisites. For details, see "Before You Begin" on page 7.

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 Application Lifecycle Management Options window opens.

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.

The ALM Login window opens.

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.

To explore the ALM window:

1. Explore the ALM modules.

Click the following sidebar buttons:

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Tutorial

Chapter 1: Introducing ALM

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.

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.

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.

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Tutorial

Chapter 1: Introducing ALM

Button Description

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 Micro Focus test

automation solution. For details, refer to the

Micro Focus 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.

Enables you to add defects, determine repair 

priorities, repair open defects, and analyze the

data.

2. Explore the common ALM elements.

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

Each of the ALM modules contains the following key elements:

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

Button Description

Navigates to your previous/next view in ALM.

Provides commands that you can run from each of the ALM 

modules.

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Chapter 1: Introducing ALM

Button Description

Enables you to open the ALM online help and additional online resources. It also enables you to display version information for each ALM client component. 

<domain, project, user>



Details of the current domain, project, and user.

Logs you out of your current project and returns you to the Application Lifecycle Management Login window.

● Module menu bar. Displays the menus from which you select commands in the current ALM module.

● Module toolbar. This is located below the menu bar. It contains buttons for frequently used commands in the current ALM module.

3. View ALM help topics.

a. To view the help topic of the Defects module window, click the Defects sidebar button. The Defects module is displayed. 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 display the available resources. d. Click the Close ( ) button.

The Mercury Tours Sample Web Site

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

To explore Mercury Tours:

1. Open the Mercury Tours application.

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

The Mercury Tours home page opens.

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Chapter 1: Introducing ALM

2. Register with Mercury Tours.

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Chapter 1: Introducing ALM

a. Click Register. The Register page opens.



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.

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Chapter 1: Introducing ALM

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



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

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Chapter 1: Introducing ALM

4. Reserve a flight.

Follow the on-screen instructions to reserve a flight.

5. End your Mercury Tours session.

Click Sign-off.

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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.

In this lesson, you will learn about:

• Defining Releases and Cycles 20 • Viewing Releases and Cycles 21

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Tutorial

Chapter 2: Specifying Releases and Cycles

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 details, see "Starting ALM" on page 10.

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.

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Chapter 2: Specifying Releases and Cycles

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.

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Chapter 2: Specifying Releases and Cycles

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.

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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 24 • Viewing Requirements 26 • Converting Requirements to Tests 29

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Chapter 3: Specifying Requirements

Defining Requirements

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

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 details, see "Starting ALM" on page 10.

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. 

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.

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

Priority: 4-Very High

Product: Mercury Tours Web Site

e. Click Submit.

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Tutorial

Chapter 3: Specifying Requirements

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.

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.

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

Priority: 4-Very High

Product: Mercury Tours Web Site

f. Click Submit.

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

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Chapter 3: Specifying Requirements

7. Assign the requirements to a cycle.

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.

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.. ALM (12.60) Page 26 of 151

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Chapter 3: Specifying Requirements

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.



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.

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Chapter 3: Specifying Requirements

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



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.



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.

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Chapter 3: Specifying Requirements

f. The Requirements Grid displays the requirements you added.

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.

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.

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

6. Choose the destination subject path.

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Chapter 3: Specifying Requirements

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.



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

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Tutorial

Chapter 3: Specifying Requirements

Cruise Search tests.



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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 33 • Designing Test Steps 34 • Defining Test Parameters 36 • Defining Test Configurations 39 • Creating and Viewing Coverage 41 • Copying Test Steps 47 • Generating Automated Test Scripts 48

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Chapter 4: Planning Tests

Developing a Test Plan Tree

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

In 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 details, see "Starting ALM" on page 10.

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.

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



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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.



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 Micro Focus 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. ALM (12.60) Page 34 of 151

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Chapter 4: Planning Tests



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.

Step 3: Enter departure and return flight.

1. Click the Flights button. 2. Enter flight details and preference.

3. Click Continue.

1. Select departure and return flights.

2. Click Continue.

Flight details and

preference are entered. The flights are selected.

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Step Name Description Expected Result

Step 4: Enter passenger details.

Step 5: Enter credit card details.

Enter first name, last name, and meal preference.

1. Enter credit card type. 2. Enter credit card number. 3. Enter expiration date.

Passenger details are entered.

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.

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.

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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 34, 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. 

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.

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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.



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.

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f. The parameters are added to your design step.



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.

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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.



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. ALM (12.60) Page 40 of 151

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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.



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.

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

In these exercises, you will learn about the following:

• Creating Coverage 42 • Analyzing Coverage 44

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.

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.

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4. Display the Test Plan Tree pane.

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

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Chapter 4: Planning Tests

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. ALM (12.60) Page 44 of 151

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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.



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

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



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.



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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.

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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 Micro Focus 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 use multiple data values for the same operation (data-driven tests).

Tests that are executed only once.

Tests that require

immediate execution.

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Chapter 4: Planning Tests

Do Automate Do Not Automate

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 7.

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.

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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 51 • Defining Test Sets 52 • Adding Tests to a Test Set 60 • Defining a Build Verification Suite 64 • Setting Schedules and Conditions for Test Runs 66 • Running Tests 71 • Viewing and Analyzing Test Results 79

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Chapter 5: Running Tests

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 the Performance Center Quick Start guide.

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.

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Chapter 5: Running Tests

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 55.

Defining a Functional Test Set

Functional test sets contain automatic tests. Tests in a Functional test set run using automated server-side 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.

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Tutorial

Chapter 5: Running Tests

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 19).

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



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

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

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

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

c. Enter the following:

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Chapter 5: Running Tests

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.



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. ALM (12.60) Page 54 of 151

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Chapter 5: Running Tests

a. Click the Automation tab.



b. In the On Automatic Test Failure section, perform the following:

o Select the Rerun test check box.

o 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 60.

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.

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Tutorial

Chapter 5: Running Tests

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 19).

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



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

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

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

b. Click the New Test Set button. The New Test Set dialog box opens. ALM (12.60) Page 56 of 151

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Chapter 5: Running Tests

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.

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Chapter 5: Running Tests

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.

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Chapter 5: Running Tests

7. Set rules for the automated tests in the test set in the event of a test failure. a. Click the Automation tab.

b. Perform the following:

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

o 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.

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Tutorial

Chapter 5: Running Tests

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.

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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 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 64.

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.

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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.

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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.

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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 page 66.

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 Micro Focus'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 ALM (12.60) Page 64 of 151

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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.

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. ALM (12.60) Page 65 of 151

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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 has finished running. When a test instance is time-dependent, a Time Dependency icon is added to the diagram.

In this exercise, you will create a new 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:

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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.

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

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.

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

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



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

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



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

Add the same execution condition as described in Step 4 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.



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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 73 and "Running Tests in a Default Test Set Automatically" on page 78.

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.

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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. 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.

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:

1. 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.

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g. Click the Calculate Availability button to check that the timeslot is valid. 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 79.

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 Sprinter, Micro Focus’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 75

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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: For information on installing Sprinter, see "Before You Begin" on page 7.

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. Micro Focus Sprinter opens. 2. Select the instances to run from the test set.

a. Click the Open 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.

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

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

4. Perform the first step.

a. Click the Actual Result button. In the Actual Result dialog box, type: The Mercury Tours site opens. Click OK.

b. Click the Passed Selected Step button.

5. Perform the second step.

a. Click the Actual Result button. In the Actual Result dialog box, type: Flight details and preference are entered. Click OK.

b. Click the Passed Selected Step button.

6. Pass the remaining steps.

Click the Passed Selected Step arrow and select Pass All.

7. Continue on to the Visa instance.

Click Next Test. Sprinter advances to the next instance in the test list. 8. Pass all steps of the Visa instance.

Click the Passed Selected Step arrow and select Pass All.

9. Continue on to the MasterCard instance.

Click Next Test. Sprinter advances to the next instance in the test list. 10. Pass all steps of the MasterCard instance.

Click the Passed Selected Step arrow and select Pass 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.

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.

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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.



4. Start the test run.

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.

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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.

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.

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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 7.

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.

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



4. Set the test run settings.

Select the Run All Tests Locally check box to run the test on your local computer. 5. Run the test.

Click the Run button. 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" on the next page ● "Viewing Test Results in the Test Instance Properties Dialog Box" on page 82 ● "Viewing Test Coverage" on page 83

● "Viewing Coverage Progress" on page 85

You can also use ALM reports and graphs to further analyze your test results. For details, see "Analyzing ALM Data" on page 104.

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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.

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.

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