

Test Management Tool

Lesson 00:

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Document History

Date	Course Version No.	Software Version No.	Developer / SME	Reviewer(s)	Approver	Change Record Remarks
August – 2016	1.0	HP ALM 11.0	Vaibhav Khandekar Prashant Naik Shilpa Bhosle	Vaibhav Khandekar Prashant Naik Riyaz Voyalpad	Mahima Sharma	New Material Creation



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Course Goals and Non Goals

- Course Goals

- At the end of this course participants gain an understanding of what is HP Application Life Cycle Management
- Introduction to HP ALM – Quality Center
- Evolution & architecture of HP ALM
- Overview of HP ALM Workflow
- Working with Management Tab & Requirement Specification
- Working with Test Plan Module
- Working with Test Lab Module
- Working with Defect Module
- Introduction to HP Analysis Feature
- HP ALM Integration with Automation Tool (UFT)

- Course Non Goals

- HP ALM Advanced Features



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Pre-requisites

- Fundamental knowledge of Software Testing
- Fundamental knowledge of Automation Testing
- Different types of Software Testing techniques
- Different types of Software Testing
- Defect Life Cycle & Management



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Intended Audience

- Test Engineers and Senior Test Engineers



Day Wise Schedule

- Day 1

- Lesson 1: Introduction to HP Application Lifecycle Management (ALM)
- Lesson 2: Management Tab & Requirements Specification

- Day 2

- Lesson 3: Test Plan Module
- Lesson 4: Test Lab Module
- Lesson 5: Defect Module

- Day 3

- Lesson 5: Defect Module (Cont.)
- Lesson 6: Introduction to HP ALM Analysis
- Lesson 7: HP ALM Connection with Automation Tool



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 - 1.1 An Overview of HP ALM
 - 1.2 Introduction to HP ALM (Quality Center)
 - 1.3 An Evolution of HP ALM
 - 1.4 Architecture of HP ALM
 - 1.5 HP ALM Editions
 - 1.6 Need for HP ALM
 - 1.7 Introduction to HP ALM Workflow
 - 1.8 HP ALM Workflow – Release Specifications
 - 1.9 HP ALM Workflow – Requirement Specifications
 - 1.10 HP ALM Workflow – Test Planning
 - 1.11 HP ALM Workflow – Test Execution
 - 1.12 HP ALM Workflow – Defect Tracking



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 - 1.18 Understanding HP ALM Project Structure
- Lesson 2: Management Tab & Requirements Specification
 - 2.1 An Overview of Release & Cycles
 - 2.2 Managing Release & Cycles
 - 2.3 Defining Release & Cycles
 - 2.4 An Overview of Requirements



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 - 2.13 Defining Filter to View Requirements
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References

- Student material:
 - Class Book (presentation slides with notes)
 - HP User Guide 11.0
- Web Reference
 - www.tutorialspoint.com
 - www.hp.com
 - www.guru99.com



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Next Step Courses (if applicable)

- None



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Other Parallel Technology Areas

- Microsoft Team Foundation Server
- Microsoft Test Manager



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Test Management Tool

Lesson 1: Introduction to HP
Application Lifecycle
Management (ALM)

Lesson Objectives

- To understand the following topics:
 - An Overview of HP ALM
 - Introduction to HP ALM (Quality Center)
 - An Evolution of HP ALM
 - Architecture of HP ALM
 - HP ALM Editions
 - Need for HP ALM
 - Introduction to HP ALM Workflow
 - HP ALM Workflow – Release Specifications
 - HP ALM Workflow – Requirement Specifications
 - HP ALM Workflow – Test Planning



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Lesson Objectives

- To understand the following topics:
 - HP ALM Workflow – Test Execution
 - HP ALM Workflow – Defect Tracking
 - HP ALM Workflow – Analysis
 - HP ALM – Other Features
 - HP ALM Quality Center - Login Screen
 - HP ALM Quality Center – Home Screen
 - HP ALM Quality Center – Common Toolbar
 - Understanding HP ALM Project Structure



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An Overview of HP ALM

- HP Application Lifecycle Management (ALM) is a web based tool that enables organizations to manage the application lifecycle right from project planning, requirement gathering till testing and deployment
- HP Application Lifecycle Management (ALM) empowers organizations to manage the core application lifecycle granting application teams the crucial visibility and collaboration needed for predictable, repeatable, and adaptable delivery of modern applications
- ALM simplifies and organizes application management by providing you systematic control over the process



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An Overview of HP ALM

HP Application Lifecycle Management (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.

Application lifecycle management is a complex process. Whether your organization is predominantly Agile or you are using both iterative and sequential methods, the aim of effective lifecycle management is greater predictability, heightened repeatability, improved quality, and a ready accommodation of change. Understanding project milestones, deliverables, and resource and budget requirements and keeping track of project health, standards and quality indicators, allow delivery managers to achieve these objectives.

ALM simplifies and organizes application management by providing you systematic control over the process. It helps you create a framework and foundation for your application lifecycle management workflow in a central repository.

ALM features a system for organizing and tracking application releases, enabling you to align your business priorities and quality expectations with your project requirements, tests, and defects. ALM helps you make more informed release decisions with real-time key performance indicators (KPIs).

An Overview of HP ALM (Cont.)

- It helps you create a framework and foundation for your application lifecycle management workflow in a central repository
- ALM features a system for organizing and tracking application releases, enabling you to align your business priorities and quality expectations with your project requirements, tests, and defects
- ALM helps you make more informed release decisions with real-time key performance indicators (KPIs)
- ALM offers integration with HP testing tools such as UFT and LoadRunner as well as third-party and custom testing tools, and requirement and configuration management tools
- ALM communicates with the testing tool of your choice, providing you with a complete solution to fully automated application testing



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Introduction to HP ALM (Quality Center)

- Quality Center was initially a test management tool developed by Mercury interactive
- It is now developed by HP in November, 2010 as an Application Life Cycle Management Tool or ALM that supports various phases of the software development life cycle
- It is an advanced version of Quality Center and generally considered as QC 11.0
- HP Quality Center, a test management tool is now popularly known as Application Life Cycle Management Tool(ALM) as it is no longer just a test management tool but it supports various phases of the software development life cycle
- HP ALM helps us to manage project milestones, deliverables, resources and keeping track of project health, standards that allows Product owners to gauge the current status of the product



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An Evolution of HP ALM

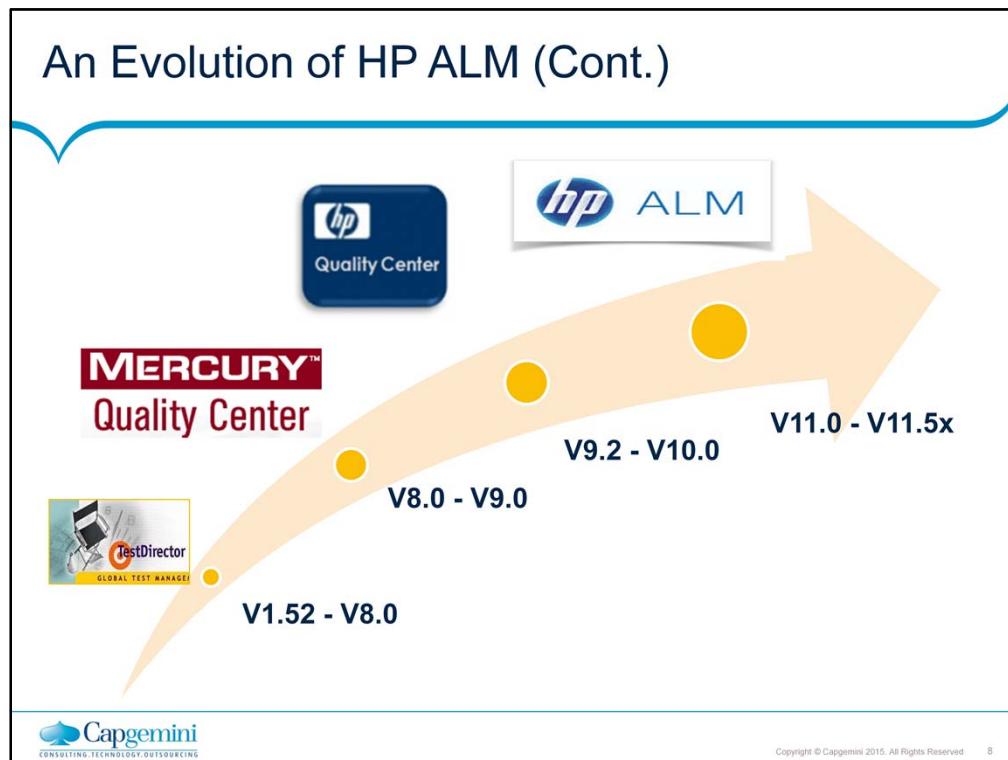
Sr. No	Commercial Name	Version Numbers	Owned By
1	Test Director	V1.52 - V8.0	Mercury Interactive
2	Quality Center	V8.0 - V9.0	Mercury Interactive
3	Quality Center	V9.2 - V10.0	HP
4	ALM	V11.0 - V11.5x	HP



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Evolution of HP ALM

1. Quality Center was earlier known as Test Director which was developed by Mercury Interactive.
2. In 2008, Version 8 was released, and the product was renamed as Quality Center.
3. Later, HP acquired Mercury Interactive and rebranded all mercury products as HP. So Mercury Quality Center became HP Quality Center
4. In 2011, Version 11 was released, and Quality center was rechristened as HP ALM.

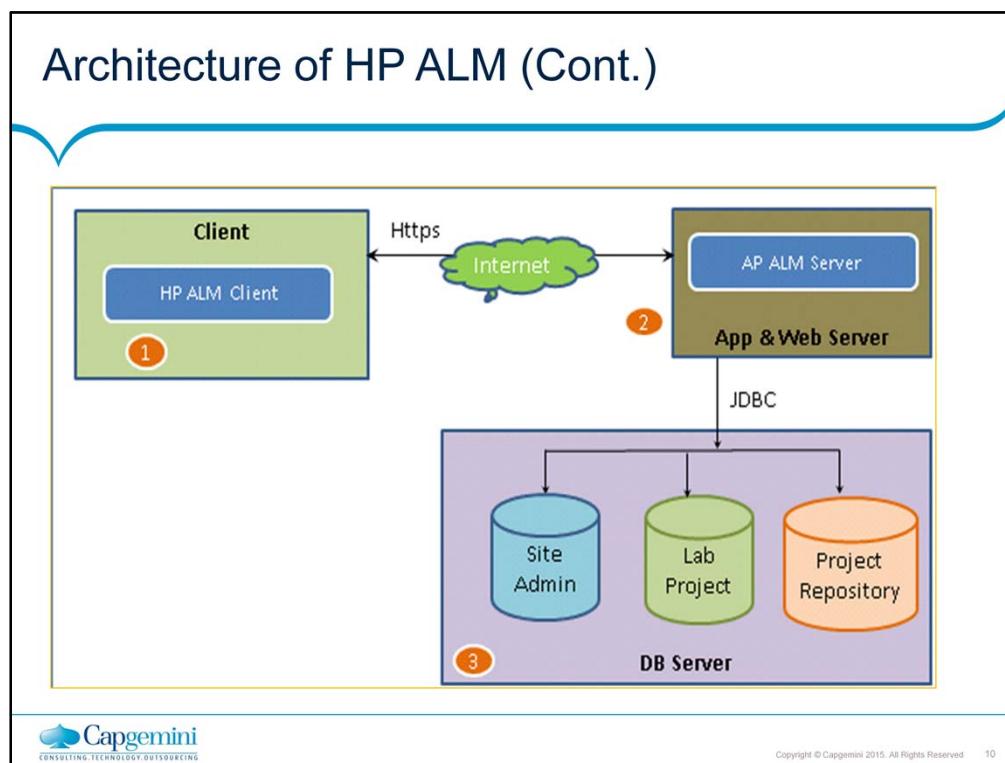


Architecture of HP ALM

- HP ALM, an enterprise-wide application that is based on Java 2 Enterprise Edition (J2EE) technology and uses MS SQL Server or Oracle as its back end
- There is also a load balancer to effectively cater user's requests
- Site Administration Database is hosted on a standalone Database server while other project related data are stored on a separate Database server
- ALM has 3 components – Client, Application Server and Database Server



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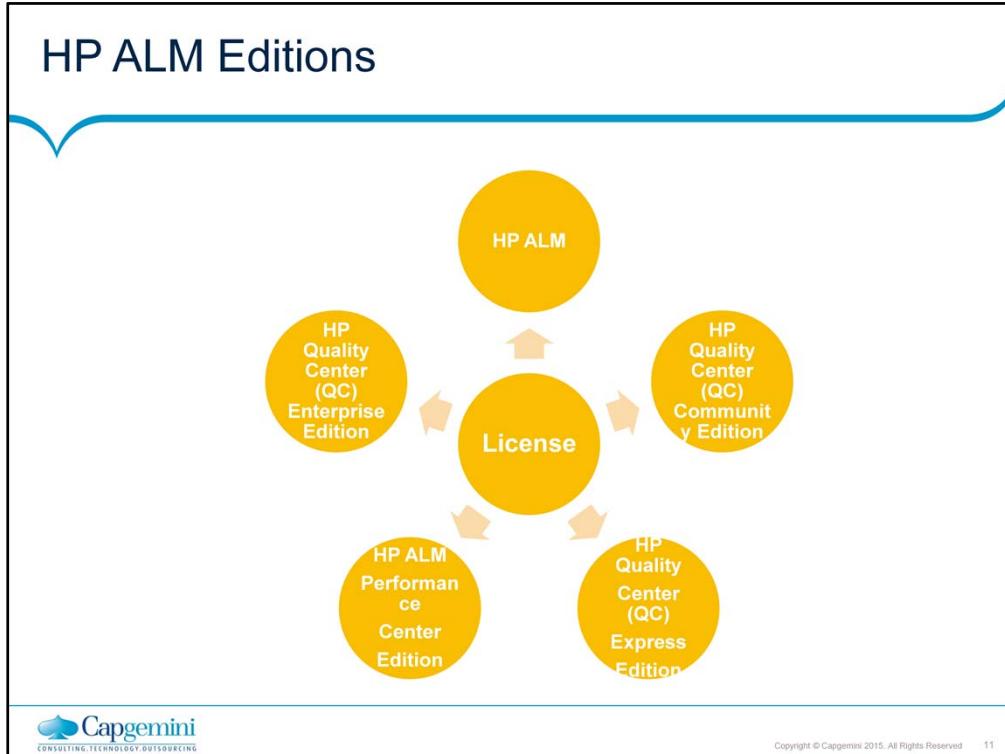
Architecture of HP ALM

- 1. HP ALM client :** The end user or tester accesses the tool using the URL of ALM. At this time the client components are downloaded on the client's system. ALM client components help the user to interact with the server using .NET and COM technologies over a secured connection (HTTPS).
- 2. ALM server/Application server :** Application server usually runs on a Windows or Linux platform which caters to the client requests. App server makes use of the Java Database Connectivity (JDBC) driver to communicate between the application server and database servers.
- 3. Database servers:** The Database layer stores three schemas.

Site Administration schema: It Stores information related to the domains, users, and site parameters.

Lab Project: This schema stores lab information related to functional and performance testing on remote hosts, Performance Center server data.

Project schema: Stores project information, such as work item/data created by the user under the project area. Each project has its own schema and they are created on the same database server as the Site Administration schema.



HP ALM Editions

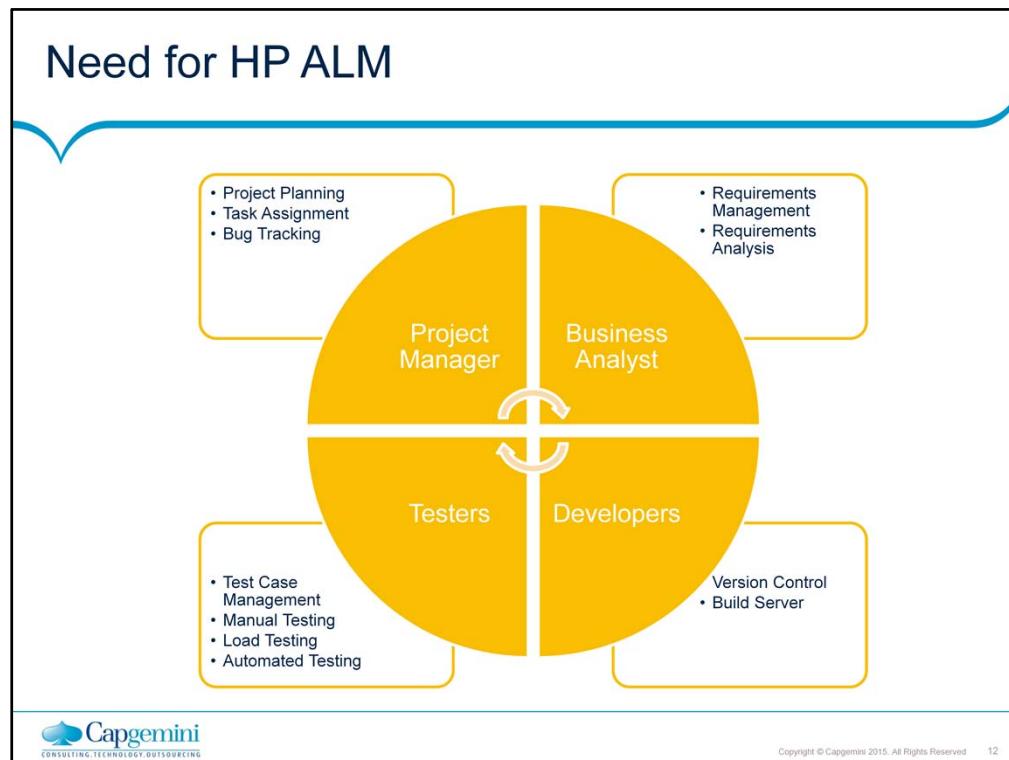
HP ALM - A unified platform for managing and automating processes, activities, and assets for building, testing, delivering, and maintaining applications. It includes modules for requirements, test, defect, and development management, and overall release and project planning. HP ALM helps organizations drive consistent processes, shared best-practices, and asset sharing across projects.

HP Quality Center (QC) Enterprise Edition - QC resides on the same unified platform as HP ALM. It is a unified quality management platform that efficiently scales from a single project to multiple, enterprise-wide projects and releases. QC enables you to manage application quality with consistent, repeatable processes regardless of your methodology of choice, from Waterfall to iterative methodologies such as Agile.

HP ALM Performance Center Edition - Functionality for the complete management, scheduling, running, and monitoring of performance test scripts. It resides on the same platform as HP ALM and integrates directly with HP ALM and HP LoadRunner.

HP Quality Center (QC) Express Edition - Provides a subset of HP ALM product functionality, and is designed to introduce new customers to HP ALM. It provides core functionality for test management and defect management.

HP Quality Center (QC) Community Edition - Provides a subset of HP ALM product functionality, and is designed to introduce new customers to HP ALM. It provides core functionality for test management and defect management.



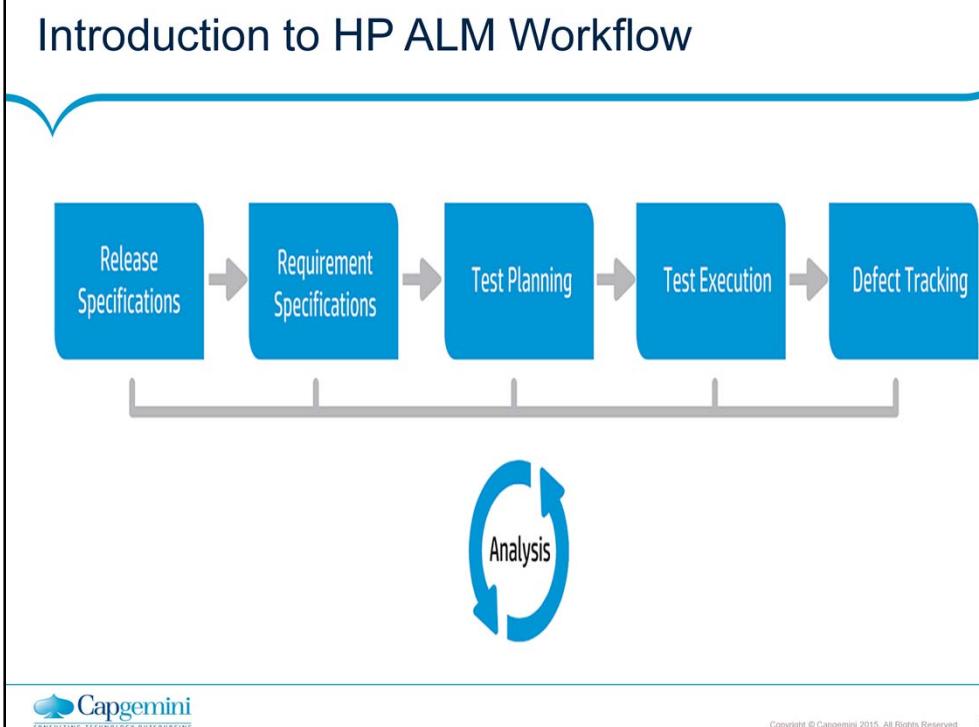
Need for HP ALM :

- It enables all the stakeholders to interact and coordinate, to achieve the project goals.
- It provides robust tracking & reporting and seamless integration of various project related tasks.
- It enables detailed project analysis and effective management.
- ALM can connect to our email systems and send emails about any changes (like Requirement change, Defect raising, etc.) to all desired team members.

The various stakeholders involved in a typical project are :

Developer
Tester
Business Analysts
Project Managers

These stakeholders perform diverse set of activities that need to be communicated to all concerned team members. If we do not maintain centralized repository to record, maintain and track all the artifacts related to the product, the project will unquestionably FAIL. We also need a mechanism to document and collaborate on all testing and development activities.



HP ALM Workflow – Release Specifications

- ALM features a system for organizing and tracking application releases, enabling you to align your business priorities and quality expectations with your project requirements, tests, and defects
- ALM helps you make more informed release decisions with real-time key performance indicators (KPIs)
 - Develop a release-cycle management plan to help you manage application releases and cycles more efficiently
 - You can track the progress of an application release against your plan to determine whether your release is on track



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HP ALM Workflow – Requirement Specifications

- ALM helps you define and maintain a repository of requirements
- Requirements help ensure that business and testing needs are covered
- Tests can then be automatically generated from these requirements to ensure the correct aspects of the application are being tested
 - 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



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HP ALM Workflow – Test Planning

- To meet the various goals of a project, you can organize the tests in your project into unique groups
- ALM provides a method for scheduling and executing tests, collecting test results, and analyzing the data
- Based on the project requirements, you can build test plans and design tests
- ALM provides a repository for both manual and automated tests



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HP ALM Workflow – 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



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HP ALM Workflow – Defect Tracking

- ALM features a system for tracking defects, enabling you to monitor defects from initial detection until resolution
- It also allows you to share defects across projects, reducing risk by helping developers find, prioritize, and resolve defects sooner
- A centralized defect repository also enables reporting of aggregated defect status and trends across projects
 - 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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HP ALM Workflow – Analysis

- The ability to track progress throughout the application lifecycle process is vital to predictability
- ALM provides tools for analyzing each phase of the process including specific instrumentation for Agile projects (for example, burn-up and burn-down charts)
- You can generate interactive graphs that demonstrate a wide variety of business performance perspectives, or define reports with any cross section of data
- You can also monitor multiple business metrics, by arranging multiple graphs alongside each other in a single view



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HP ALM – Other Features

- Asset Libraries

- ALM supports sharing and reuse of asset libraries across projects
- They also help to drive greater consistency and repeatability, by empowering asset reuse

- ALM Integrations

- ALM offers integration with HP tools (for example, Unified Functional Testing and LoadRunner) as well as third-party and custom testing tools, and requirement and configuration management tools
- The HP Project and Portfolio Management (PPM) Center software offers your executives and PMOs a dashboard view into your portfolio, demand, in-flight projects, and programs across the organization enabling smart portfolio investment decisions



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HP ALM – Other Features (Cont.)

- Performance Center Functionality
 - ALM includes functionality enabling you to manage all aspects of a large-scale performance testing project, including resource allocation and scheduling, from a centralized location accessible through the Web
- Lab Management Functionality
 - ALM includes functionality enabling you to manage resources which you can use to execute tests on remote hosts
 - ALM helps automate the deployment and testing process, improving reliability and convenience



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HP ALM Quality Center - Login Screen

- Step 1 : Open Web Browser
- Step 2 : Type the Quality Center URL



HP ALM Quality Center – Home Screen



- Analysis View: Enables you to create graphs, reports, and Excel reports
- Dashboard View: Enables you to create dashboard pages, in which you can view multiple graphs in a single display
- Releases: Enables you to define releases and cycles for the application management process
- Requirements: Enables you to manage requirements in a hierarchical tree-structure. Requirements can be linked to tests, or defects
- 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
- Defects: Enables you to add defects, determine fix priorities and fix open defects

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HP ALM Quality Center – Common Toolbar



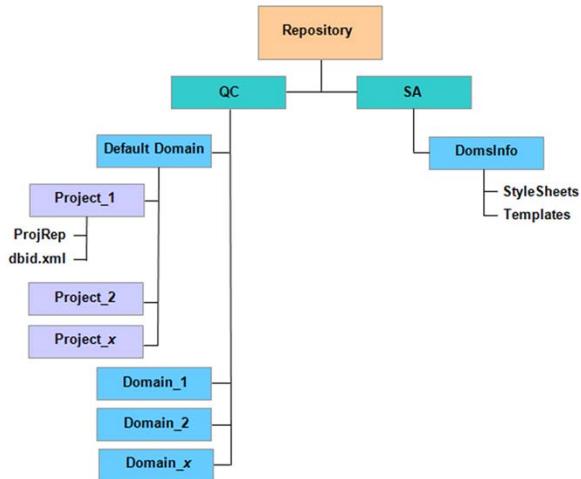
Domain: CCI, Project: WorkComp_Demo, User: npgm30r Logout

- **Back & Forward** - Navigates to your previous/next view in Quality Center
- **Tools** - Includes commands that you can run from each of the Quality Center modules
- **Help** - Enables you to open the HP Quality Center Documentation Library
- **Domain, Project, User** - Details of the current domain, project, and user
- **Logout** - Logs you out of your current project and returns you to the Login window



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Understanding HP ALM Project Structure



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Understanding HP ALM Project Structure :

When you install ALM, the installation program creates a project repository on the application server's file system. By default, the project repository is located under the application deployment directory, at C:\ProgramData\HP\ALM\repository on Windows machines, and at /var/opt/HP/ALM/repository on UNIX machines.

The project repository contains the sa and qc sub-folders. The sa directory stores global XML files, style sheets, templates, and reports to be used by all projects in the project repository.

The qc directory is a working area for a group of domains that are shared by multiple users. Each domain stores projects. When you create a new project, you can add it to the default domain or to a user-defined domain.

Under the qc directory, each project directory contains the following subdirectories:

ProjRep - A subdirectory that contains a repository of all project files, such as test scripts, reports, and attachments.

dbid.xml - An initialization file that stores project information required for restoring a connection to a project.

Under the sa directory, the DomsInfo subdirectory contains the following information:

StyleSheets - A subdirectory for storing global style sheets.

Templates - A subdirectory for storing database templates used when creating new projects.

Demo

- HP ALM Quality Center - Login Screen
- HP ALM Quality Center – Home Screen
- HP ALM Quality Center – Common Toolbar



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Summary

- In this lesson, you have learnt:
 - The overview of HP ALM
 - The introduction to HP ALM
 - The evolution & architecture of HP ALM
 - The different editions of HP ALM
 - The need of HP ALM in projects
 - Introduction to HP ALM Workflow
 - HP ALM Quality Center - Login Screen
 - HP ALM Quality Center – Home Screen
 - HP ALM Quality Center – Common Toolbar
 - Understanding HP ALM Project Structure
 - Introduction to HP ALM Quality Center - Login Screen, Home Screen, Common Toolbar
 - Introduction to HP ALM Project Structure



Review Question

- Question1: _____ simplifies and organizes application management by providing you systematic control over the process.

- Question 2: Integration of HP testing tools, custom testing tools with ALM is not possible due to compatibility issues faced by various versions of ALM.
 - True/ False

- Question 3: Test Director was earlier known as :



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Review Question

- Question 4: In which of the following HP ALM workflow phase we can generate graphs & dashboards?
- Test Planning
 - Test Execution
 - Defect Reporting
 - Analysis



Test Management Tool

Lesson 2: Management Tab &
Requirements Specification

Lesson Objectives

- To understand the following topics:
 - An Overview of Release & Cycles
 - Managing Release & Cycles
 - Defining Release & Cycles
 - An Overview of Requirements
 - Requirements Specification
 - Create Test Requirements Outline
 - Requirement Development Strategy
 - Requirement Management
 - Requirement Development



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Lesson Objectives

- To understand the following topics:
 - Requirement Monitoring & Documentation
 - Defining Requirements
 - View Requirements
 - Defining Filter to View Requirements
 - An Overview of Requirements Traceability
 - Introducing Traceability Matrix
 - Configure Requirement Traceability Matrix



Lesson Objectives

- To understand the following topics:
 - Requirement Workflow in Quality Center
 - Requirement Different Views - Tree View
 - Requirement Different Views – Details View
 - Requirement Different Views – Grid View
 - Requirement Different Views – Coverage Analysis View
 - Test Requirements Numeration
 - Attach Document to Requirements



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Understanding Management Tab

- Using Management tab users can organize and track releases and cycles
- Release is nothing but a significant change or changes that are going live at a given time
- Cycles are the different sets of testing efforts that are performed to facilitate the release
- Creating and managing releases and cycles is the first step that needs to be executed before proceeding to create any work item like requirement, tests, defects etc.
- ALM users can track the progress of the project in real time by analyzing the releases tree to ensure if it matches the release goals.
- It also enables users to get a quick snapshot of the quality of that release which displays the outstanding defect and defect opening rate



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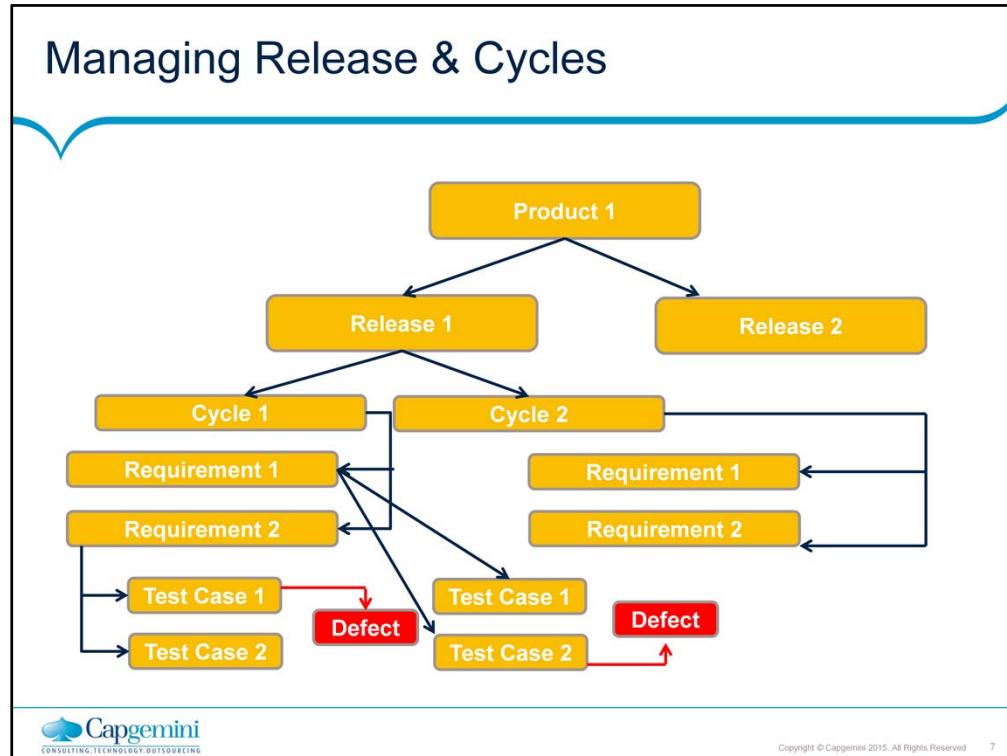
5

An Overview of Release & Cycles

- HP Application Lifecycle Management (ALM) enables you to organize and track your upcoming releases by defining 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 is a set of development and quality assurance efforts performed to achieve a common goal based on the release timeline
- Both releases and cycles have defined start and end dates



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Managing Release & Cycles

After defining releases and cycles, you define and review requirements and assign them to releases and cycles.

Requirements describe in detail your application needs, and are used as a basis for creating a test plan.

The tests you create during the test plan phase should cover these requirements.

After assigning requirements to releases and cycles, you create test set folders and assign them to cycles.

A test set is a group of test instances in an ALM project designed to achieve specific test goals.

After assigning test set folders to a cycle, you run the test sets under these test set folders.

If an application flaw is detected while running a test set, you can submit a defect. ALM automatically creates a link between the test run, associated release and cycle, and the new defect.

A defect can be submitted to an ALM project from any module at any stage of the application management process.

While reviewing and deciding which new defects need to be fixed, the defects can be assigned to the appropriate release and cycle.

Following test runs, you can review the test progress to determine how well it meets the release goals. You can also determine how many defects were resolved, and how many still remain open. The results can be analyzed at a release or cycle level. You can track the progress of the application management process in real time by analyzing the Releases tree and ensuring that it matches the release goals.

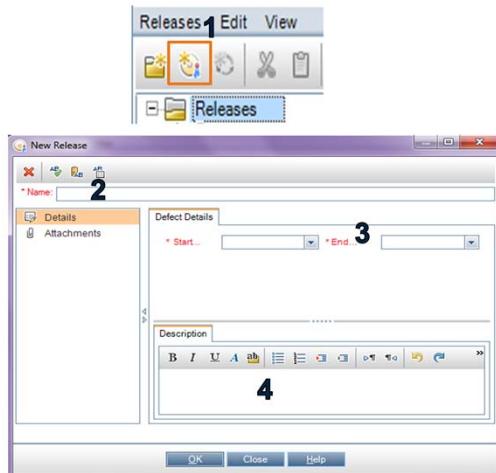
Defining Release & Cycles

The screenshot shows the HP Quality Center interface. On the left, there is a sidebar with various management options: Dashboard, Analysis View, Dashboard View, Management (selected), Releases (highlighted in orange), Libraries, Requirements (with a dropdown arrow), Requirements, Business Models, Testing (with a dropdown arrow), Test Resources, Test Plan, Test Lab, and Defects. In the center, there is a toolbar with icons for Back, Forward, Tools, Help, and other functions. Below the toolbar, a tree view shows a 'Releases' folder under 'Releases'. A 'New Release Folder' dialog box is open in the foreground, prompting for a 'Release Folder Name' (with 'Release 13.4' typed in). The dialog has 'OK' and 'Cancel' buttons. A large blue number '1' is placed over the sidebar near the 'Management' option. A large blue number '2' is placed over the toolbar icon area. A large blue number '3' is placed over the 'OK' button in the dialog box.

▪ Create a new Release folder

1. On the Quality Center sidebar, under Management, select Releases
2. In releases tree, select the root Releases folder. Click the New Release Folder button. The New Release Folder dialog box opens. In the Release Folder Name box, type Release name
3. Click OK.

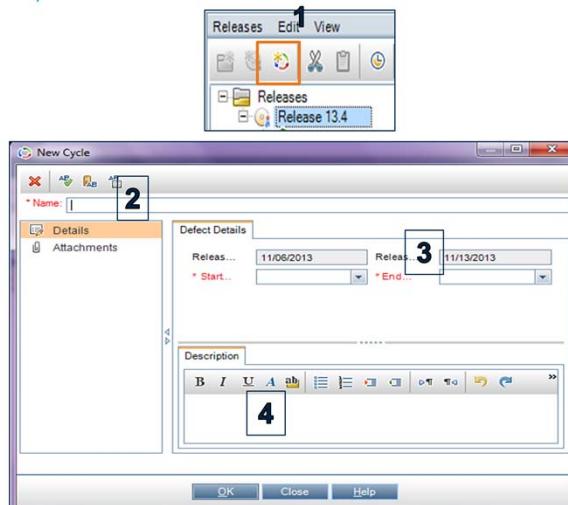
Defining Release & Cycles (Cont.)



Add a Release

1. In releases tree, select the Releases folder and Click the New Release button. The New Release dialog box opens
2. In the Name box, type Release name
3. Select Release Start and End Date
4. Type Release Description in box and Click OK. The release is added to the releases folder

Defining Release & Cycles (Cont.)



Add a Cycle

1. Select Release In the release tree and click New Cycle button. New Cycle dialog box opens
2. In the Name box, type Cycle name
3. Select Cycle Start and End Date
4. Type Cycle Description in box and Click OK. The Cycle is added to the release

Demo

- Defining Release & Cycles



An Overview of Requirements

- Defining the Requirements is one of the preliminary phases for software development lifecycle
- Requirements describe in detail what needs to be solved or achieved to meet the objectives of your application under development
- It refers to what has to be delivered to the clients at the end of that specific release
- The Requirements module enables you to define, manage and track requirements at all stages of the application lifecycle management



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Requirements Specification

- Requirements are recorded in the Requirements module by creating a requirements tree
- The requirements tree is a graphical representation of your requirements specification, displaying the hierarchical relationship between different requirements
- The tree includes different groups of requirements based either on requirement type or functional area
- For each requirement group, you create a list of detailed requirements in the requirements tree
- Each requirement in the tree is described in detail and can include any relevant links and attachments
- After creating a requirements tree, the requirements can be used as a basis for defining tests in your test plan tree



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Create Test Requirements Outline

- Using the business / functional requirements create an outline structure of the testing requirements of the project
- Start by breaking project into major topic areas (like Admin, UI, Database)
- Further split these major topics down into smaller sub requirements
- The smallest item in the outline represents a single test condition



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Requirement Development Strategy

- A requirements strategy may concern a system or a maintenance object and describes who does what, how, when and why on a general level
- On the other hand, a requirements plan is more detailed and describes only one situation, for example one release of a system
- In smaller systems the plan may apply to all releases for the coming year
- A good requirements strategy should typically cover three areas
 - Requirements Management
 - Requirements Development
 - Monitoring and documentation of requirements



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Requirement Development Strategy

The requirements strategy is at a general level and has to be adapted to the context, for example for a specific release. This may mean dropping some requirements gathering techniques that do not suit the individual project, or not doing risk analysis in situations when it's already made by central IT department for all IT systems. It is important to clearly justify deviations from the requirements strategy. Additionally, make sure to get approval by the appropriate person in the organization.

Requirement Management

- The requirements management section describes the tasks performed by the requirements manager
- It typically includes sections describing:
 - How planning of requirements is done
 - How to conduct risk analysis
 - How to handle versions of requirements and requirements documents
 - Traceability between requirements, test cases and bug reports
 - Prioritization and validation of requirements
 - Approval process for requirements
 - Change Management



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Requirement Development

- The requirements development section typically describes:
 - The organization's requirements management process
 - How to conduct business analysis and in which areas it should be done
 - Which requirements gathering techniques are available and when they are best used
 - How to develop and detail requirements at different levels



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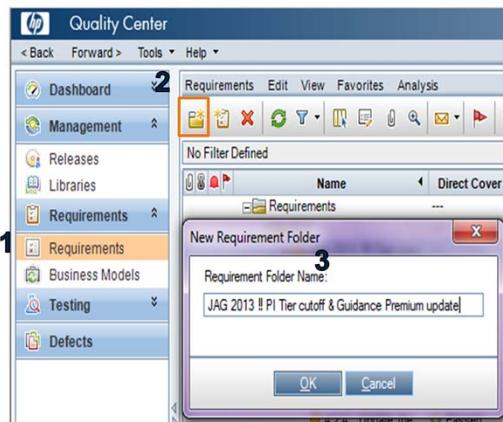
Requirement Monitoring & Documentation

- The monitoring and requirements documentation section describes:
 - How to document requirements
 - The document templates that exist and what tools are used
 - Any metrics that should be used



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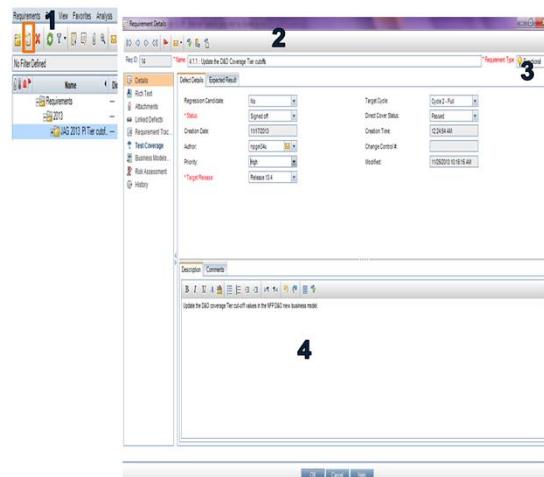
Defining Requirements



Create a new Requirement folder

1. On the Quality Center sidebar, under Requirements, select Requirements
2. In Requirements tree, select the root Requirement folder. Click the New Requirements Folder button. The New Requirement Folder dialog box opens. In the Requirement Folder Name box, type Requirement name
3. Click OK. The new Requirement folder is added to the Requirement tree.

Defining Requirements (Cont.)



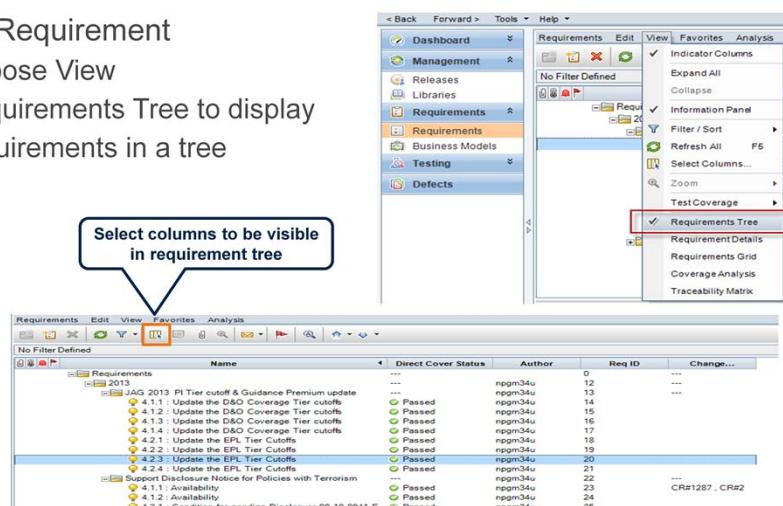
Add a Requirement

1. In Requirement tree, select the Requirement folder and Click the New Requirement button. The New Requirement dialog box opens
2. In the Name box, type requirement name
3. Select Requirement Type, Target Release and Cycle
4. Type Requirement Description in box and Click OK. The requirement is added to the folder.

View Requirements

- View Requirement
 1. Choose View
 2. Requirements Tree to display requirements in a tree

Select columns to be visible in requirement tree



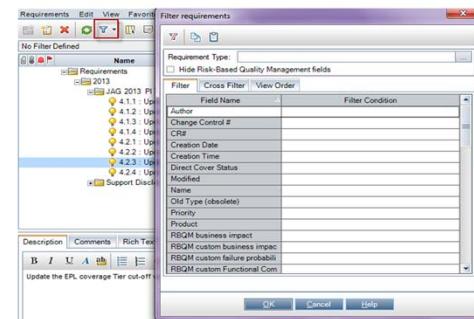
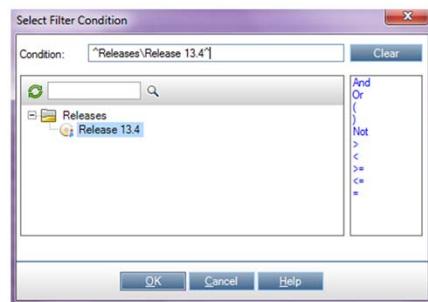
Name	Direct Cover Status	Author	Req ID	Change...
...	...	npqm34u	12	...
...	Passed	npqm34u	13	...
...	Passed	npqm34u	14	...
...	Passed	npqm34u	15	...
...	Passed	npqm34u	16	...
...	Passed	npqm34u	17	...
...	Passed	npqm34u	18	...
...	Passed	npqm34u	19	...
...	Passed	npqm34u	20	...
...	Passed	npqm34u	21	...
...	Passed	npqm34u	22	...
...	Passed	npqm34u	23	CR#1287 . CR#2
...	Passed	npqm34u	24	...
...	Passed	npqm34u	25	...

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Defining Filter to View Requirements

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



1. For selected field, click the Filter Condition box
2. Click the down arrow button. The Select Filter Condition dialog box opens.

An Overview of Requirements Traceability

- Requirements traceability defines a relationship between two or more requirements
- When analyzing the impact of a change proposed in a specific requirement, the traceability links indicate the other requirements that the change might affect
- You can add traceability links to and from a selected requirement
 - Trace from links indicate requirements that affect a selected requirement
 - Trace to links indicate requirements that are affected by a selected requirement
- When a requirement changes, HP Application Lifecycle Management (ALM) can alert the affected requirements.



Introducing Traceability Matrix

- The traceability matrix enables you to determine the extent of relationships between requirements and other requirements and between requirements and tests
- It helps you verify that all requirements are met and identify changes to the scope of your requirements when they occur
- The traceability matrix lists source requirements and their associated requirements and tests
- The total number of relationships is listed for each source requirement
- A low value may imply that the source requirement is not associated with enough requirements or tests
- A high value may imply that the source requirement is too complex and can perhaps be simplified
- A zero value indicates that no relationship exists

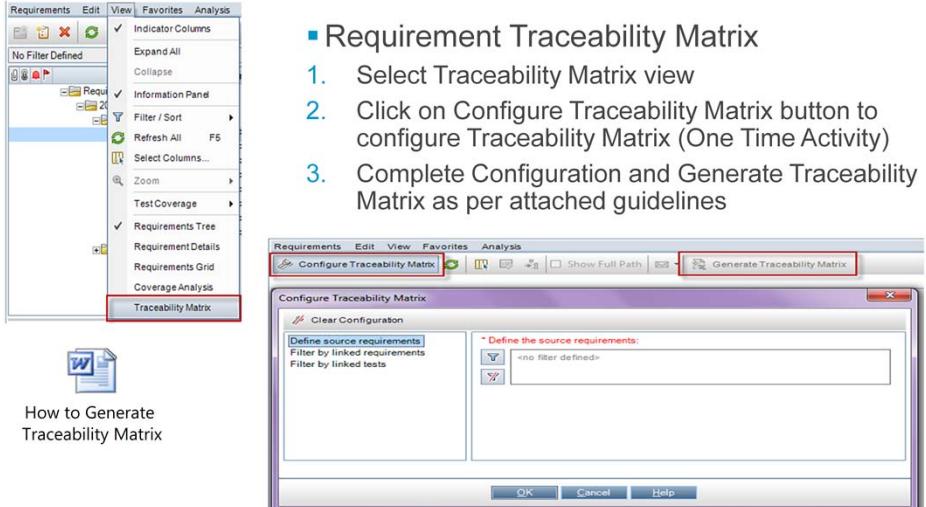


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Configure Requirement Traceability Matrix

■ Requirement Traceability Matrix

1. Select Traceability Matrix view
2. Click on Configure Traceability Matrix button to configure Traceability Matrix (One Time Activity)
3. Complete Configuration and Generate Traceability Matrix as per attached guidelines



How to Generate Traceability Matrix

Configure Traceability Matrix

Generate Traceability Matrix

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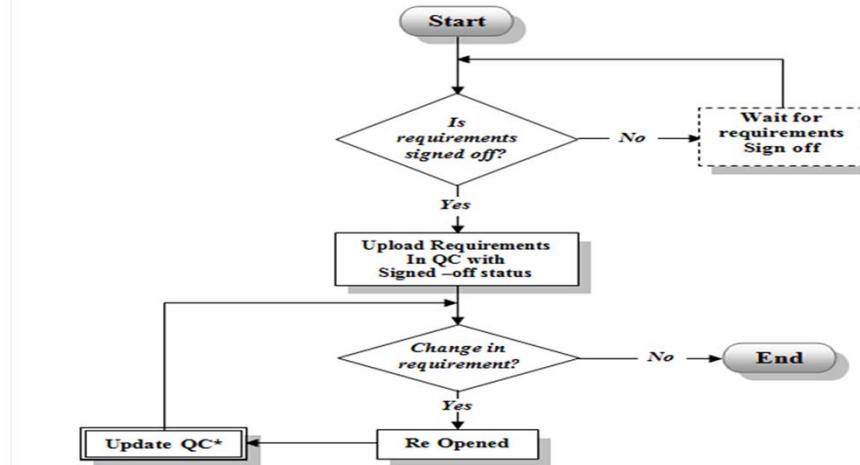
Demo

- Defining Requirements
- View Requirements
- Defining Filter to View Requirements
- Configure Requirement Traceability Matrix



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Requirement Workflow in Quality Center



Requirement Different Views - Tree View

- Requirements Tree View
 1. Choose View
 2. Select Requirements Tree to display requirements in a tree

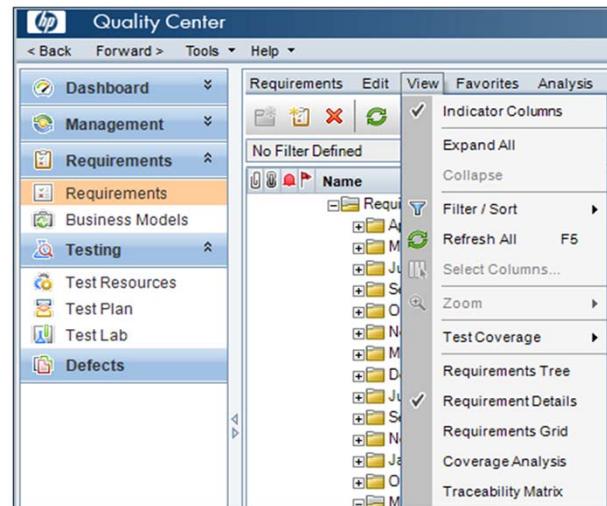
Select columns to be visible in requirement tree

Name	Direct Cover Status	Author	Req ID	Change...
...	...	npgm34u	12	...
...	...	npgm34u	13	...
...	...	npgm34u	14	...
...	...	npgm34u	15	...
...	...	npgm34u	16	...
...	...	npgm34u	17	...
...	...	npgm34u	18	...
...	...	npgm34u	19	...
...	...	npgm34u	20	...
...	...	npgm34u	21	...
...	...	npgm34u	22	...
...	...	npgm34u	23	CR#1287 , CR#2
...	...	npgm34u	24	...
...	...	npgm34u	25	...

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Requirement Different Views – Details View



- Requirements Details View

1. Choose View
2. Select Requirements Details to display requirements in a details view

Requirement Different Views – Details View (Cont.)

Select columns to be visible in requirement tree

Defect Details Rich Text Attachments Linked Defects Requirement Traceability Test Coverage Business Models Linkage Risk Analysis

*Name: FT-33100 *Requirement Type: Folder
Req ID: 664 Target Cycle:
*Status: Signed Off Creation Date: 12/01/2015
Creation Time: 1:36:59 AM Author:
Priority: Modified: 03/29/2016 3:44:11 AM
Target Release: FT-33100

Description Comments

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Requirement Different Views – Grid View

The screenshot shows the Test Management Tool interface. On the left is a sidebar with the following navigation items:

- Dashboard
- Management
- Requirements
 - Requirements (selected)
 - Business Models
- Testing
 - Test Resources
 - Test Plan
 - Test Lab
 - Defects (selected)

The main area displays a grid of requirements with the following columns:

Name	Type	Status	Priority	Owner
Project-29449	Requirement	Pending	High	John Doe
Project-29896	Requirement	In Progress	Medium	Jane Smith
1 Single Site and A...	Requirement	Completed	Low	John Doe
CAT Analysis label	Requirement	Pending	Medium	Jane Smith
PR-31356	Requirement	In Progress	High	John Doe
PT-116078	Requirement	Pending	Medium	Jane Smith
Evolution (PL System)	Requirement	In Progress	High	John Doe
Policy Locations co...	Requirement	Pending	Medium	Jane Smith
Defect 150 - Portfol...	Defect	Open	High	John Doe
Policy Agg (EUZ) c...	Requirement	Pending	Medium	Jane Smith

A context menu is open over the grid, with the following options:

- Grid Filters
- Indicator Columns
- Information Panel
- Filter / Sort
- Refresh All F5
- Select Columns...
- Requirements Tree
- Requirement Details
- Requirements Grid** (selected)
- Coverage Analysis
- Traceability Matrix

- Requirements Grid View

1. Choose View
2. Select Requirements Grid to display requirements in grid

Requirement Different Views – Grid View (Cont.)

Select columns to be visible in requirement tree

Name	Direct Cover Status	Author	Req ID
Project-29449	...	npgm33q	190
Project-29896	...	npgm33q	191
1 Single Site and Adjacency Analy...	Passed	npgm33q	213
CAT Analysis label wraps outside...	Passed	npgm33q	282
PR-31356	...	npgm33q	284
PT-116078	...	npgm33q	468
Evolution (PL System Aus/Can) S...	Passed	npgm45l	511
Policy Locations count displayed o...	No Run	npgm33q	526
Defect 150 - Portfolio - In Portfolio...	Passed	npgm33q	527
Policy Agg (EUZ) calculating Chu...	Passed	npgm33q	528
Single Site and Country Cent...	No Run	npgm33q	529
4.2.1_Requirements description...	Passed	npgm33q	304
Include policies missing exposure...	Failed	npgm33q	185
Problem with Country filtering on...	Failed	npgm33q	186
EUZ Reports do not contain the u...	Failed	npgm33q	187
CZO Reports do not contain the u...	Failed	npgm33q	188
4.1 Requirement description: CAT...	Passed	npgm33q	210
Verify the functionality of clear butt...	Passed	npgm33q	244

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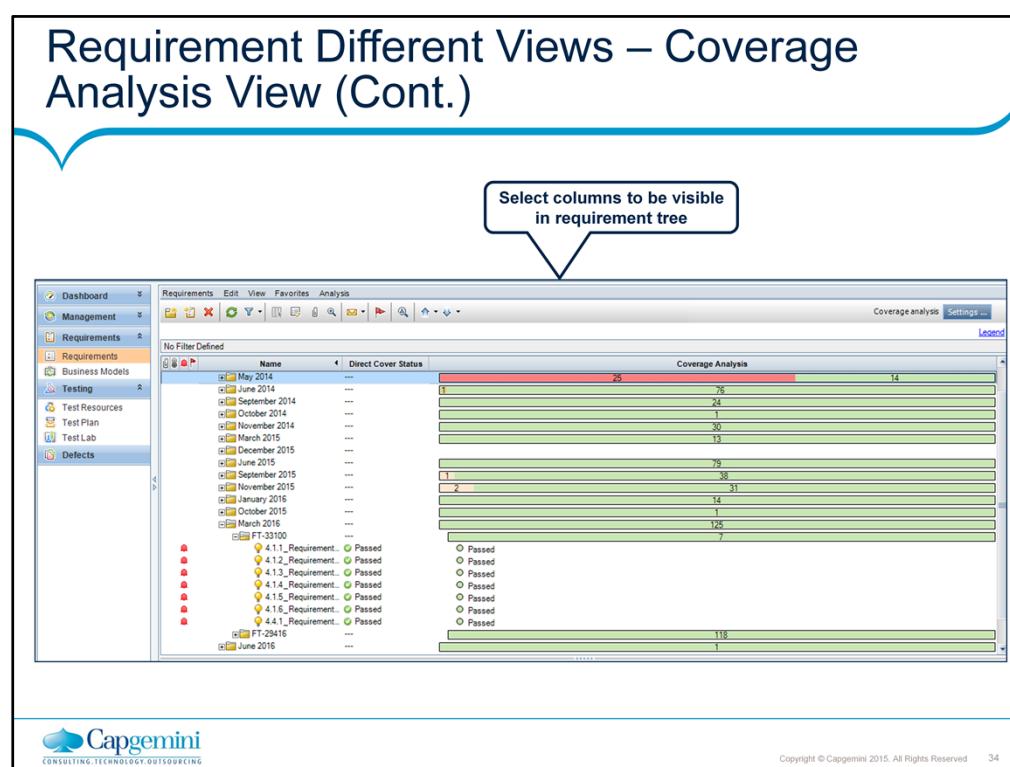
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Requirement Different Views – Coverage Analysis View

▪ Requirements Coverage Analysis View

1. Choose View
2. Select Coverage Analysis

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Demo

- Requirement Different Views - Tree View
- Requirement Different Views – Details View
- Requirement Different Views – Grid View
- Requirement Different Views – Coverage Analysis View



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Test Requirements Numeration

The screenshot shows a software interface for managing test requirements. On the left is a navigation sidebar with categories like Dashboard, Management, Requirements, Business Models, Testing, Test Resources, Test Plan, Test Lab, and Defects. The Requirements section is expanded, showing sub-categories for Requirements, Business Models, and Testing. Under Requirements, there are further sub-categories for April 2014 through March 2016, and a folder named FT-29416. A red box highlights a section of the interface where several requirements are listed in a table format:

Name	Direct Cover Status	Author	Req ID
4.1.1_Requirement...	Passed	npqm45l	712
4.1.2_Requirement...	Passed	npqm45l	713
4.1.3_Requirement...	Passed	npqm45l	714
4.1.4_Requirement...	Passed	npqm45l	715
4.1.5_Requirement...	Passed	npqm45l	716
4.1.6_Requirement...	Passed	npqm45l	717
4.4.1_Requirement...	Passed	npqm45l	726
FT-29416	...		565

On the right side of the interface, there is a list of steps or points:

- Test Requirements Numeration
- 1. Choose View
- 2. Requirements Tree Analysis to display requirements in a numeration

At the bottom of the interface, there is a Capgemini logo and copyright information: Copyright © Capgemini 2015. All Rights Reserved 36.

Attach Document to Requirements

HP ALM - Quality Center 11.00 - Provided by Chubb & Son
File Edit View Favorites Tools Help
Quality Center
Domain: E2E Project E2E_New User regID
Dashboard Requirements Test Resources Test Plan Test Lab Defects
Requirements
Business Models Testing Test Resources Test Plan Test Lab Defects
No Filter Defined

Name	Direct Cover Status	Author	Req ID
May 2014	—	regID3	52
July 2014	—	regID3	69
September 2014	—	regID3	109
October 2014	—	regID3	227
November 2014	—	regID3	230
December 2014	—	regID3	272
January 2015	—	regID3	283
February 2015	—	regID3	285
March 2015	—	regID3	446
April 2015	—	regID3	448
May 2015	—	regID3	515
June 2015	—	regID3	461
July 2015	—	regID3	564
August 2015	—	regID3	575
September 2015	—	regID3	713
October 2015	—	regID3	714
November 2015	—	regID3	715
December 2015	—	regID3	716
January 2016	—	regID3	717
February 2016	—	regID3	726
March 2016	—	regID3	861

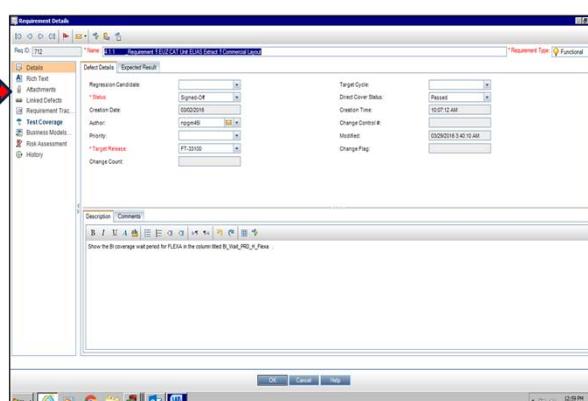
Description Comments Risk Test Attachments History Expected Result

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■ Attach documentation to the requirements

1. Choose View
2. Select Requirements tree to display requirements in a tree
3. Double Click on Any requirement to get details view

Attach Document to Requirements (Cont.)



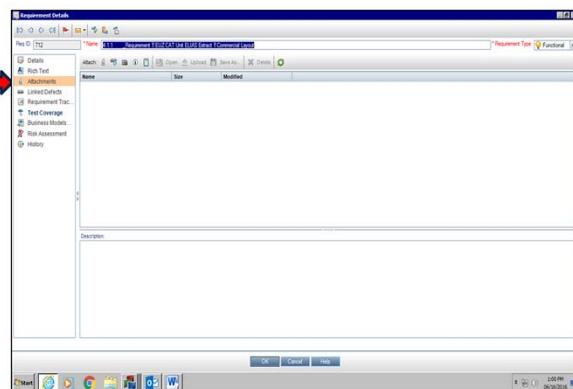
A screenshot of a software application window titled "Requirement Details". The window shows a list of tabs on the left: "Overview", "Defect Details", "Expected Result", "Attachments" (which is highlighted with a red arrow), "Linked Defects", "Requirement Trace", "Test Coverage", "Business Models", "Risk Assessment", and "History". On the right side, there are several input fields and dropdown menus. A large text area at the bottom contains the instruction: "Show the BI coverage w/ respect to PUSA in the column that B1_Mkt_PUSA_Files".

- Attach documentation to the requirements
- 4. Detail view is displayed
- 5. Click on Attachments

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Attach Document to Requirements (Cont.)



- Attach documentation to the requirements
- 6. Attach documentation to the requirements
- 7. Click on OK

Demo

- Test Requirements Numeration
- Attach Document to Requirements



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Summary

- In this lesson, you have learnt:
 - What is Release & what are Cycles?
 - Importance of managing release & cycles
 - How to define release and cycles?
 - Overview of Requirements
 - Requirements Specification
 - Creating test requirements outline
 - Requirement development strategy
 - How to define requirements?
 - How view requirements?
 - How to apply filter to view requirements?
 - Requirement Traceability
 - Introduction to Traceability Matrix



Summary



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Summary

- In this lesson, you have learnt:
 - Configure Requirement Traceability Matrix
 - Requirement Workflow in Quality Center
 - Viewing requirements in different views
 - Test Requirements Numeration
 - Attach Document to Requirements



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Review Question

- Question1: _____ is nothing but a significant change or changes that are going live at a given time
- Question 2: In HP ALM, each requirement in the tree is described in detail and can include any relevant links and attachments.
 - True/ False
- Question 3: This defines a relationship between two or more requirements:



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Review Question

- Question 4: Which of the following describes in detail what needs to be solved or achieved to meet the objectives of your application under development?
- Requirements
 - Release
 - Cycles
 - None of the above



Test Management Tool

Lesson 3: Test Plan Module

Lesson Objectives

- To understand the following topics:
 - Test Plan Specification
 - Process of Test Planning in HP ALM
 - Creating Test Case - Steps
 - Uploading Test Cases
 - Copying Test Cases
 - Linking Test Cases to Requirement
 - Folder Structure and Naming Convention
 - Test Plan – Tree View
 - Test Plan – Grid View
 - Call Test Case Feature



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Test Plan Specification

- A software application is too large & complex when it comes to testing it as a whole
- The **Test Plan** module enables you to divide your application according to the various functionalities
- HP ALM allows you to divide application into units, or subjects, by creating folders in a test plan tree
- This serves as a graphical representation of your test plan, displaying your tests according to the hierarchical relationship of their functions



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Test Plan Specification

Developing a clear and concise test plan is fundamental to successful application testing. A good test plan enables you to assess the quality of your application at any point in the application management process.

After defining requirements, development team kick starts their design and development process while testing team start designing tests that can be executed once the build is deployed. Success of any product depends on the testing processes and the quality of testing that is being carried out. A Good test plan results in a bug free product. ALM supports maintenance and execution of manual, automation and performance tests as ALM is seamlessly integrated with all HP products such as HP UFT and HP Load Runner.

Process of Test Planning in HP ALM

- After you define subjects in the tree, you decide which tests to create for each subject and add them to the tree
- We can specify following basic information about test at this point of time
 - Test Name
 - Test Status
 - Designer
 - Attach a file, URL, application snapshot or system information to illustrate a test
- The next step is to define the test steps, they contain detailed instructions on how to execute a test and evaluate the results
- 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



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Test Plan Specification

Developing a clear and concise test plan is fundamental to successful application testing. A good test plan enables you to assess the quality of your application at any point in the application management process.

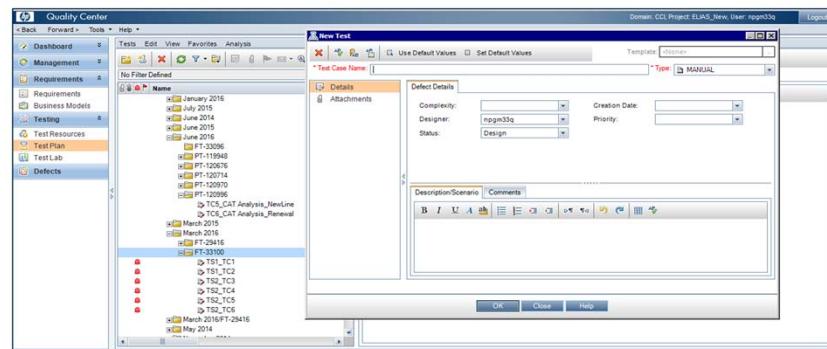
Process of Test Planning in HP ALM (Cont.)

- One can define the data by adding test parameter values for each test configuration
- A test parameter is a variable that can be assigned a value
- **Modifying Test Plan**
 - During the application management process, we may need to modify your test plan.
 - We can update the test plan tree at any time



Creating Test Case - Steps

- Click on Test Plan link from the ALM Home page
- Click 'New Folder' Icon
- Create a Manual Test by clicking on the 'New Test' Icon in 'Test Plan' Tab

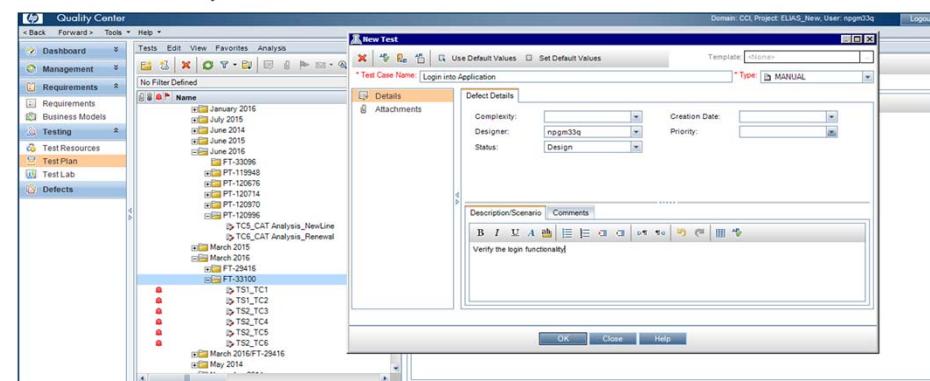


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6

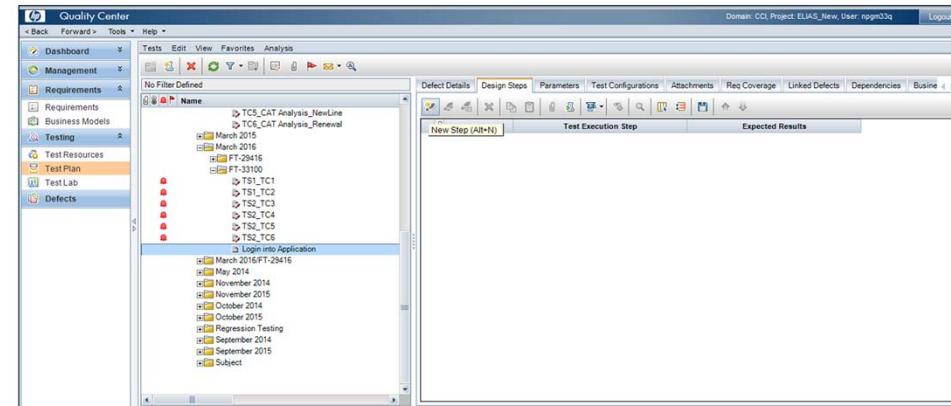
Creating Test Case – Steps (Cont.)

- Enter Test Case Name
- Select Test Case Type as Manual
- Enter Description of Test Case



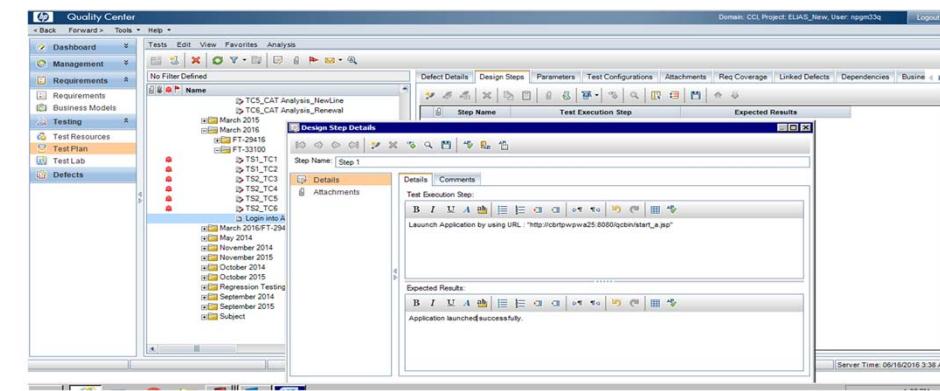
Creating Test Case – Steps (Cont.)

- Created Test Case will display under Test Plan
- Create Test Step under Test Case by clicking on New Step



Creating Test Case – Steps (Cont.)

- Add Steps into Created Test Case > Click on Add Step
- Write Test Execution Step and Expected Results
- Click on OK



Creating Test Case – Steps (Cont.)

- Created Test Step will display under Test Case

The screenshot shows the HP Quality Center interface. On the left, there's a navigation sidebar with options like Dashboard, Management, Requirements, Business Models, Testing, Test Resources, **Test Plan**, Test Lab, and Defects. The 'Test Plan' option is selected. The main area has tabs for Tests, Edit, View, Favorites, and Analysis. A search bar is at the top. Below it, there's a tree view of test cases and their steps. One node is expanded to show 'Step 1' and its details. The right side of the screen displays the 'Defect Details' tab for the selected step, showing the step name, execution step, and expected results.

Defect Details Tab Content:

Step Name	Test Execution Step	Expected Results
Step 1	Launch Application by using URL "http://cbrtppwpa25:9000/qcbin/start_a.asp"	Application launched successfully.

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Demo

- Create Test Cases



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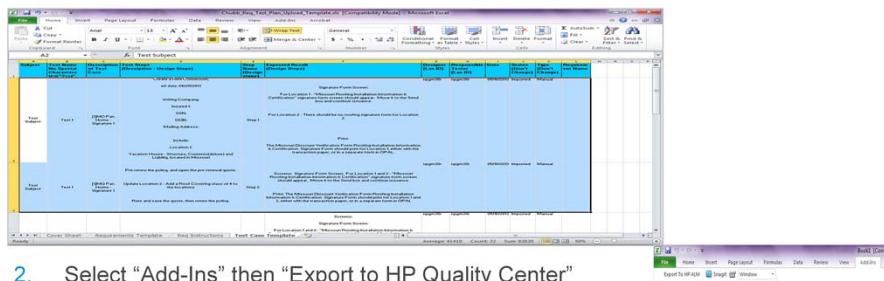
Uploading Test Cases

▪ Prerequisite

- Should have Installed “**HP Quality Center Microsoft Excel Add-in for Quality Center 11.00**”
- Test cases in Pre-defined test case template

▪ Export Test Cases

1. Open up your test case spreadsheet & highlight the rows you wish to upload into Quality Center



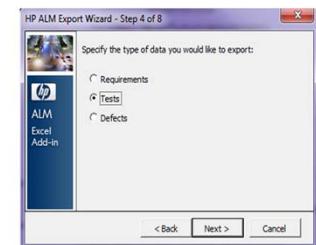
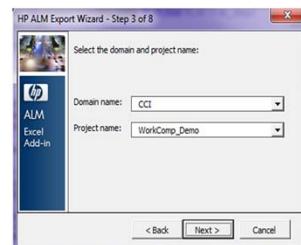
2. Select “Add-Ins” then “Export to HP Quality Center”



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Uploading Test Cases (Cont.)

3. You will see a pop-up window. Make sure that the server is pointing to correct URL, then click on 'Next'
4. Enter your User Name & Password
5. Select the domain & project name. Your respective team lead should give this to you. Click 'Next'
6. Select the type of data you would like to export: select 'Tests', then click 'Next'



Uploading Test Cases (Cont.)

7. Choose an existing map. If you don't have one initially, just type a new map name. Click 'Next' and 'map' the columns to Quality Center as follows
- I. Start with the 'Subject' column. Click on 'Subject' then click on the export-field button.
 - II. Map the Quality Center field 'Subject' to Microsoft Excel column. Enter 'A' since column 'A' on our spreadsheet is where the 'subject' data is located. Click 'OK'.



8. Repeat the mapping steps as per below table
 9. Click on 'Export' to push your data to Quality Center and then Click on 'Finish' to complete upload

Test Case Name	Excel column 'B'
Description/Scenario	Excel column 'C'
Test Execution Step (Design Steps)	Excel column 'D'
Step Name (Design Steps)	Excel column 'E'
Expected Results (Design Steps)	Excel column 'F'

Designer	Excel column 'G'
Creation Date	Excel column 'I'
Status	Excel column 'J'
Type	Excel column 'K'



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Demo

- Uploading Test Cases



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Copying Test Cases

- You can copy steps from another test in the same project or from a different project
- To copy a test step
 1. Select the steps that you want to copy by Positioning mouse pointer in the left gray sidebar
 2. Click on Copy button to copy selected steps

Defect Details	Design Steps	Parameters	Test Configurations	Attachments	Req Coverage	Linked Defects
	Step Name Step 1 Test Execution Step Create a control number in WPHICUW for NL policy using following details -User Type: CLD -Department: CLD -Effective date: 05/01/2013 -Expiration date: 05/01/2014		Expected Results Control number should be generated successfully.			

- To paste a test step
 1. Select the test case where you want to paste copied test steps
 2. Click on Paste Steps button to paste copied test steps

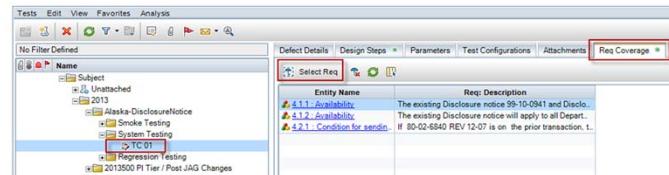
Defect Details	Design Steps	Parameters	Test Configurations	Attachments	Req Coverage	Linked Defects
	Step Name Step 1 Test Execution Step Create a control number in WPHICUW for NL policy using following details -User Type: CLD -Department: CLD -Effective date: 05/01/2013 -Expiration date: 05/01/2014		Expected Results Control number should be generated successfully.			



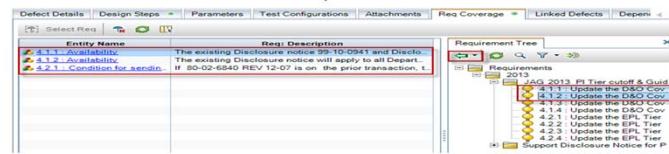
Linking Test Cases to Requirement

- Linking test cases with requirements is prerequisite to generate Traceability matrix , which also ensure 100% coverage. Below are steps to link test cases with requirements:

- Select test case that has to be linked, Go to 'Req Coverage' tab and click on 'Select Req' icon



- Select the requirements to link and click on the green arrow icon. Test case will then be linked to the selected requirement



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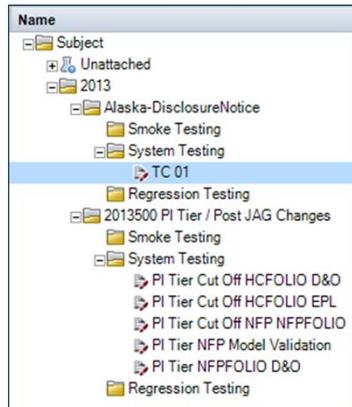
Demo

- Copying Test Cases
- Linking test cases to requirements



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Folder Structure and Naming Convention

**Folder structure:**

- o Year <2012, 2013 etc.>
 - Project/FT/PT Name
 - Smoke Testing (Folder)
 - Test Case 1 Name
 - Test Case 2 Name
 -
 - System Testing
 - Test Case 1 Name
 - Test Case 2 Name
 -
 - Regression Testing
 - Test Case 1 Name
 - Test Case 2 Name
 -

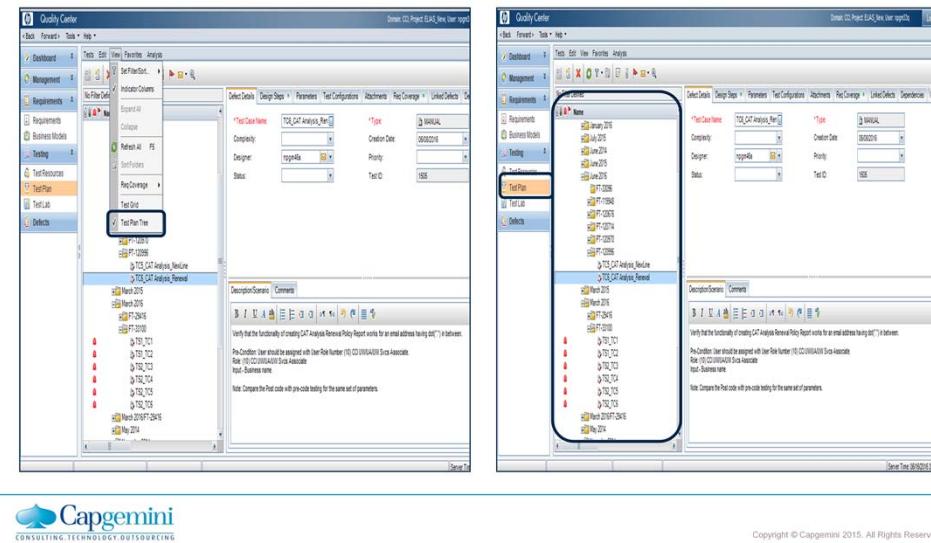
Note: Sub folder can be created under System Testing/ Regression Testing folders, if required



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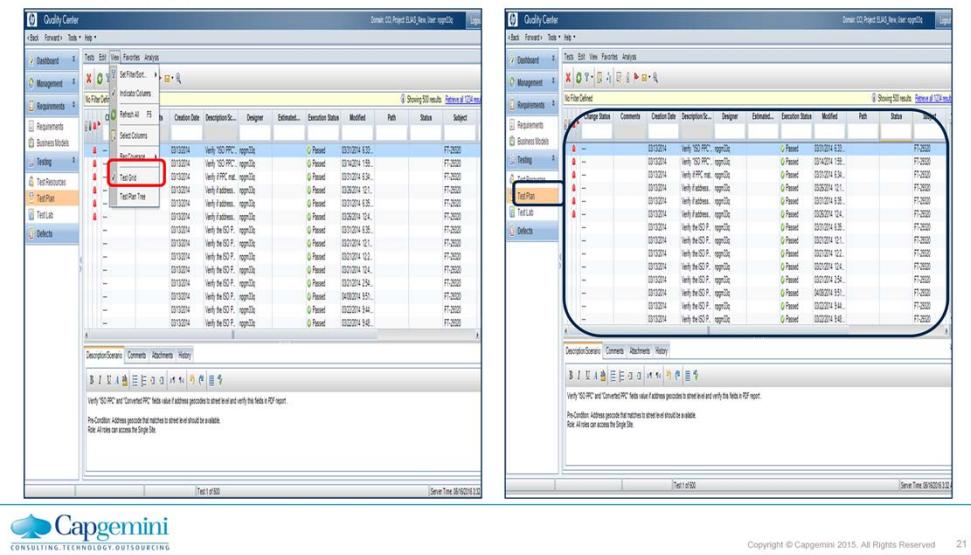
Test Plan – Tree View

- Go to Test Plan → Choose View → Test Plan Tree



Test Plan – Grid View

- Go to Test Plan → Choose View →Test Grid



Call Test Case Feature

- Go to Test Plan → Select Test Case

Step Name	Text Execution Step	Expected Results
Step 1	Pre requisite: User should be logged into the ELIAS application with home zone as EUZ.	Pre requisite should be met.
Step 2	Click on Reports link and select Reinsurance report.	Reinsurance report screen should be opened.
Step 3	Select CAT Unit Elias Extract from Reinsurance report.	CAT Unit Elias Extract report selection screen should be opened.
Step 4	Verify the User is able to select only one business unit at a time in the Business Unit selection in EUZ Reinsurance CAT Unit Extract Report on UI.	The User must be able to select only one business unit at a time in the Business Unit selection in EUZ Reinsurance CAT Unit Extract Report on UI.
Step 5	Select mandatory fields and click on Continue.	Summary page should be displayed selected parameters.



Demo

- Test Plan – Tree View
- Test Plan – Grid View
- Call Test Case Feature



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Summary

- In this lesson, you have learnt:
 - Introduction to Test Plan Specification
 - Process of Test Planning in HP ALM
 - How to create test case?
 - How to uploading Test Cases?
 - How to copy Test Cases?
 - How to link Test Cases to Requirement?
 - Folder Structure and Naming Convention
 - Test Plan – Tree View
 - Test Plan – Grid View
 - Call Test Case Feature



Review Question

- Question1: Linking _____ with _____ is prerequisite to generate Traceability matrix.

- Question 2: Complete the statement
For dividing the application according to the various functionalities can be done using:

- Question 3: Which of the following can be used to pass different input data to the test case while test execution?
 - Parameter
 - Argument
 - Test Data
 - None of the above



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Test Management Tool

Lesson 4: Test Lab Module

Lesson Objectives

- To understand the following topics:
 - Introduction to Test Lab Module
 - Introduction to Test Lab Workflow
 - Types of Test Sets
 - Creating Test Set Folder
 - Creating New Test Set
 - Adding Tests to a Test Set
 - Default Test Execution
 - Manual Test Execution in HP ALM
 - Running Test Manually
 - Raising Defect During Test Run
 - Test Run Results
 - View Test Run Result
 - Test Run Schedule



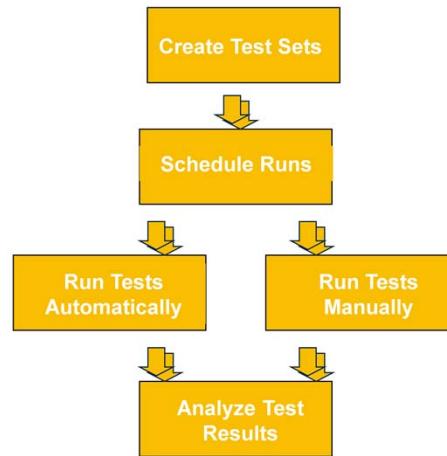
Introduction to Test Lab Module

- After you design tests in the Test Plan module, you organize test execution by creating test sets in the Test Lab module
- A test set contains a subset of the tests in your project designed to achieve specific test goals
- With the help of Test Lab module we can execute the tests once the test design activity is completed
- Test cases from the Test Plan module are called into the Test Lab module
- Changes done to test cases in the Test Lab module do not affect the parent test cases in Test Plan Module
- Each test set folder is assigned to a particular cycle
- This enables users to group the tests together that will be executed in a particular cycle
- This module also helps user to track the progress of the cycle as the tests are executed



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Introduction to Test Lab Workflow



Types of Test Sets

- **Performance**

- For running unattended remote performance tests. You can add only performance tests to this test set
- You arrange for a performance test to be executed from the server by scheduling a timeslot
- A timeslot contains a test set, the details of the remote hosts on which the test set will run, and a time and duration for running the test set

- **Default**

- For running client-side, locally controlled and launched functional tests
- You can add both manual and automated functional tests to this test set



Types of Test Sets (Cont.)

- Functional

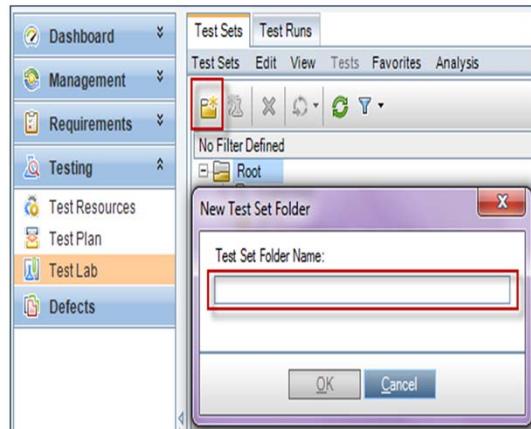
- For running server-side, unattended functional tests
- You can add only automated functional tests to this test set
- You arrange for a functional test set to be executed from the server by scheduling a timeslot
- A timeslot contains a test set, the details of the testing hosts on which the test set runs, and a time and duration for running the test set

- External

- Contains external type tests
- External type test sets are read-only
- You cannot create, modify, or run test sets directly from ALM

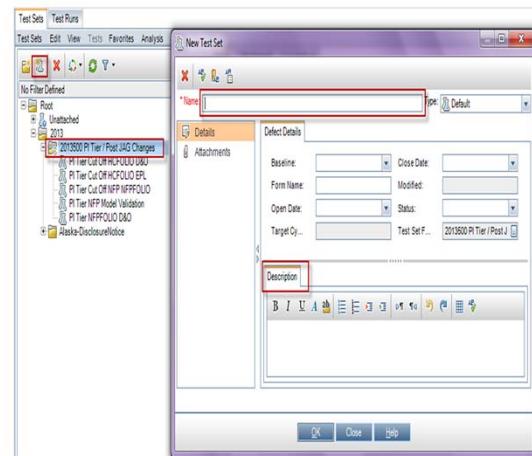


Creating Test Set Folder



1. On the Quality Center sidebar, under Testing, select Test Lab
2. In Test Set tree, select the root folder
3. Click the New folder button
4. The New Test Set Folder dialog box opens. In the Test Set Folder Name box, type Test Set Name
5. Click OK
6. The new Test Set folder is added to the Test Set tree

Creating New Test Set



1. In Test Set tree, select the Test Set folder and Click the New Test Set button. The New Test Set dialog box opens
2. In the Name box, type Test Set name
3. Type Test Set Description in box and Click OK. The Test Set is added to the folder.

Adding Tests to a Test Set

1. Select Test Set and Go to 'Execution Grid' tab. Click on 'Select Tests' icon

Name	Test: Test...	Type	Status	Iterations
[1]PI Tier Cut Off...	PI Tier Cut Off...	MANUAL	Passed	

2. Select Tests from Test plan tree displayed in right pane the requirements to add to the Test Set
3. Click on Green Arrow to add Tests in Test Set

Name	Test: Test...	Type	Status
[1]PI Tier Cut Off...	PI Tier Cut Off...	MANUAL	Passed

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Demo

- Creating Test Set Folder
- Creating New Test Set
- Adding Tests to a Test Set



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Default Test Execution

- You can run client-side automatic and manual tests and test sets from HP Application Lifecycle Management (ALM) regardless of which version of ALM you have
- You can run manual tests from a Default test set in ALM using Sprinter or the Manual Runner
- You can run automatic tests from a Default test set in ALM using the Automatic Runner
- When you run tests in a Default test set manually, you follow the test steps and perform operations on the application under test
- You pass or fail each step, depending on whether the actual application results match the expected output. You can run both manual and automated tests manually



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Manual Test Execution in HP ALM

Manual Test Execution in ALM

- ① Client requests a manual test execution.
- ② ALM opens Manual Runner on the client.
- ③ Client begins the run and records the test results into Manual Runner. The results are sent back to the ALM server.



Client



ALM Server

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Manual Test Execution in HP ALM

You can execute tests more than once in the same set. Each execution is considered a new test run. You can also resume a manual test run that was paused during execution. If you decide to modify test steps during a test run, you can choose to save the modifications in the original test and in the test instance. Alternatively, you can save them for the current test run only. After test execution is complete, you can view a summary of results for all test runs, and view more detailed results for each test instance.

Running Test Manually

The screenshot shows the Test Management Tool interface. At the top, there's a menu bar with 'Test Sets' and 'Test Runs'. Below it is a toolbar with icons for 'Edit', 'View', 'Tests', 'Favorites', and 'Analysis'. A tree view on the left shows 'No Filter Defined' with 'Root' expanded to show '2013' and 'Unattached'. Under '2013', there are several test sets: 'PI Tier Cut Off HCFOOL D&O', 'PI Tier Cut Off HCFOOL EPL', and 'PI Tier Cut Off NFP NFPCFOOL'. The 'PI Tier Cut Off HCFOOL D&O' node is highlighted with a red box. On the right, a 'Defect Details' panel has a dropdown menu 'Run' with 'Run with Manual Runner' highlighted with a red box. Below it is a button labeled 'Run with Manual Runner Ctrl+Alt+F9'. At the bottom of the interface, there's a 'Run Details' dialog box with various fields like 'Run Name', 'Status', 'Tester', 'Configurations', etc., and a 'Comments' section.

1. Select Test Set → Test Case to Run

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

3. Click the Begin Run Button

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Let us now understand the functionalities in manual runner dialog.

Begin Run - Kick starts the execution of Manual Tests

End Run - User can exit the execution at any point by clicking on "End Run" button.

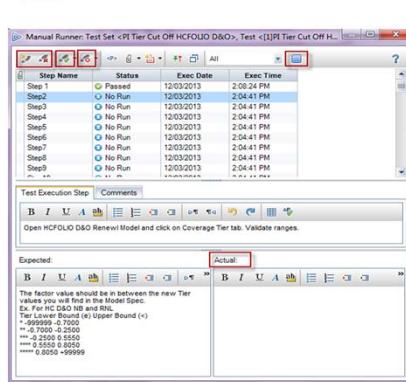
Cancel Run - User can cancel the execution at any point in time.

New Defect - A New Defect can be raised right from the Manual runner window

OS info - Gives detailed information about the Operating System

Running Test Manually (Cont.)

1. The Manual Runner dialog box opens
2. Perform the first step
 - I. In the Actual box, type actual result
 - II. Click the Pass Selected or Fail Selected button. Step 2 is displayed.
3. Perform remaining steps and then click on End Run
4. You can pass or Fail all test steps by clicking on Pass All or Fail All Button



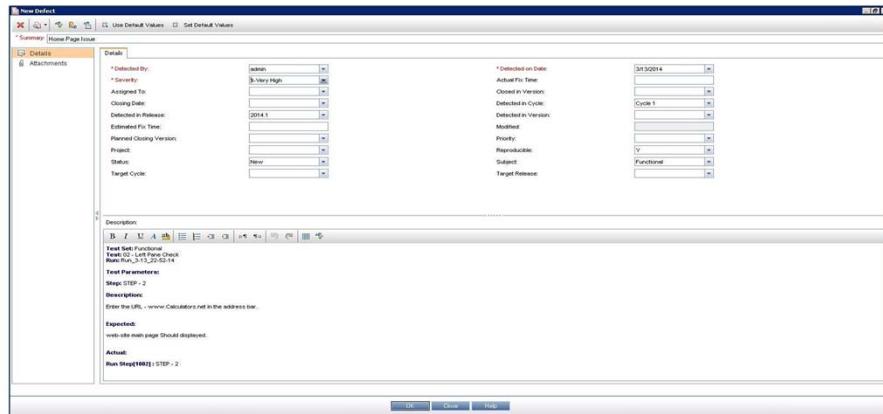
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Options available during test run :

- Add Step - Tester can add steps at runtime.
- Delete Step - Testers can remove a step at runtime if redundant.
- Cancel Run - The execution will be cancelled
- Pass Selected - The Selected Step will be marked as Pass.
- Pass All - All the Steps in the test will be marked as Pass.
- Fail Selected - The Selected Step will be marked as Fail.
- Fail All - All the Steps in the test will be marked as Fail.
- Parameters - Shows the list of parameters that was added as part of the test
- Attach to Step - Enables user to attach a file to a particular step
- Attach to Run - Enables user to attach a file on a test set level
- Add Defect - Testers can add a defect by selecting the step and clicking on "Add a Defect"
- Filter - Testers can filter based on the status like - completed, blocked etc.
- End Run - Even while execution is in progress, testers can end the execution.
- Description - Shows the description of that step.
- Expected - Displays the expected result of that step.
- Actual - Tester can fill in the actual result.

Raising Defect During Test Run

- A New Defect can be raised right from the Manual runner window



Demo

- Running Test Manually
- Raising Defect During Test Run



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Test Run Result

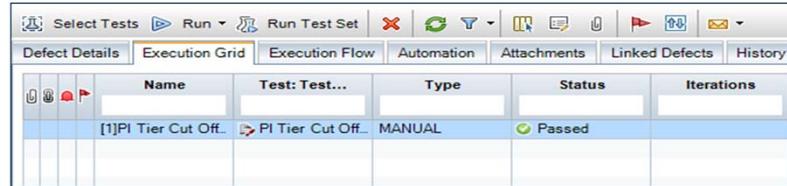
- After the test execution is completed, you can view the results in the Test Runs module in HP ALM
- In the Test Runs tab, you can view the results of test executions
- Manual test results consist of the overall pass/fail status of a test and the pass/fail status of each step in a test run
- The results available for automatic tests vary depending on the test type
- The test run results help us in determining whether a defect was detected in application under test
- In some cases, we may decide that a step failed because the expected results are no longer valid and need to be updated



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View Test Run Results

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



	Name	Test: Test...	Type	Status	Iterations
[1]	PI Tier Cut Off...	PI Tier Cut Off...	MANUAL	Passed	

- View the results of each test step in the Last Run Report pane
- Click each step to view its description, as well as the expected and actual results.



Step Name	Status	Exec Date	Exec Time
Step1	Passed	11/17/2013	3:04:43 PM
Step2	Passed	11/17/2013	3:04:43 PM
Step3	Passed	11/17/2013	3:04:43 PM
Step4	Passed	11/17/2013	3:04:43 PM
Step5	Passed	11/17/2013	3:04:43 PM
Step6	Passed	11/17/2013	3:04:43 PM
Step7	Passed	11/17/2013	3:04:43 PM
Step8	Passed	11/17/2013	3:04:43 PM
Step9	Passed	11/17/2013	3:04:43 PM

Steps Details
Test Execution Step:
Open NFP New Business Model and click on Policy Tier tab. Validate ranges.

Expected Results:
The factor value should be in between the new Tier values as per the Model Spec.
Ex. For NFP D&O NB and RNL
Tier 1 Lower Bound (<) Upper Bound (<)
Inferior -999999 -0.1220
Adequate -0.1220 0.4800



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Test Run Schedule

- Testers can control the test execution with the help of "Execution Flow" Tab
- Testers can also specify date and time for executing a particular test instance
- We can also schedule the test based on the results of another specified test instance in the Execution Flow
- Schedule a Test Run:
 1. In the Test Lab module, select a test set from the test lab tree. Click the Execution Flow tab.
 2. In the Execution Flow tab, right-click a test instance and choose Test Run Schedule. The Run Schedule dialog box opens.
 3. In the Execution Conditions tab, specify the execution conditions for the test instance.
 4. In the Run Schedule dialog box, click the Time Dependency tab. Specify the date and time for running each test instance.
 5. 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.



Demo

- View Test Run Results
- Create Test Run Schedule



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Summary

- In this lesson, you have learnt:
 - Introduction Test Lab Module
 - Introduction to Test Lab Workflow
 - Types of Test Sets
 - How to creating Test Set Folder?
 - How to creating New Test Set?
 - How to add Tests to a Test Set?
 - Overview of Default Test Execution
 - Overview Manual Test Execution in HP ALM
 - How to run test manually?
 - How to raise defect during test run?
 - Viewing test run result
 - How to create test run schedule?



Summary



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Review Question

- Question1: With the help of _____ module we can execute the tests once the test design activity is completed.
- Question 2: In HP ALM, we can schedule the test based on the results of another specified test instance in the Execution Flow.
 - True/False
- Question 3: Which of the following Test Sets type can be used for running client-side, locally controlled and launched functional tests?
 - Functional
 - Default
 - External
 - Performance



Review Question

- Question 4: Which of the following tabs can be used to view the results of test execution?
- Test Execution
 - Test Lab
 - Test Runs
 - None of the above



Test Management Tool

Lesson 5: Defect Module

Lesson Objectives

- To understand the following topics:
 - Defect Module – Defect Tracking
 - Defect Linkage
 - Defect Life Cycle
 - Add New Defect
 - New Defect Screen - Fields
 - Update Defect
 - Linking Defects to Test
 - Duplicate Defects/Find Similar Defects
 - Defect Update by DS team
 - Defect Update by Test Lead
 - Creating Favorite Views
 - HP ALM Quality Center Roles and Access
 - Severity Definition
 - Priority Definition



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Defect Module – Defect Tracking

- Locating & fixing application defects efficiently is vital to the development process
- Using the HP ALM Defects module, you can report defects found in an application
- The HP ALM Defects module not only facilitates the user to log a defect but also provides efficient defect tracking and management techniques
- You use the Defects module to:
 - Log application defects for an ALM project
 - Track defects until application developers and testers determine that the defects are resolved
 - Defect records inform members of the application development and quality assurance teams of new defects discovered by other members
- As you monitor the progress of defect repair, you update the information in your project



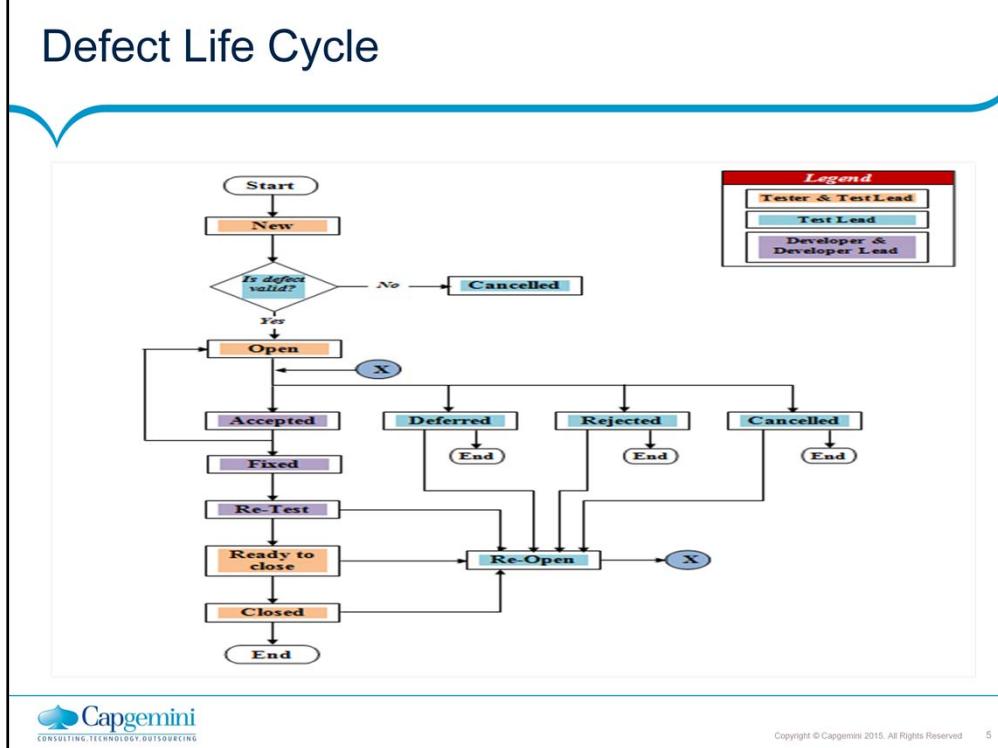
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Defect Linkage

- You can link a defect to the following ALM entities
 - Requirements
 - Tests, Test sets, Business process tests
 - Test instances, Test runs
 - Run steps and other defects
- Examples of when defect linkage is useful include:
 - A new test is created specifically for a defect. By creating a link between the test and the defect, you can determine if the test should be run based on the status of the defect.
 - During a manual test run, if you add a defect, ALM automatically creates a link between the test run and the new defect.
- You can link defects directly to other defects or entities
- When you add a defect link to an entity, ALM adds a direct link to the entity and indirect links to related entities.



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Add New Defect

1. On the Quality Center sidebar, select Defects and Click New Defect button.
2. The New Defect dialog box opens

The screenshot displays the HP Quality Center interface. On the left, the sidebar shows categories like Dashboard, Management, Requirements, Testing, Test Resources, Test Plan, and TestLab. The 'Defects' icon is highlighted with a red box. In the center, there's a grid view showing defect details: ID 10, 20, and 15. A blue arrow points from the sidebar to the 'New Defect...' button in the toolbar. To the right, a large window titled 'New Defect' is open, showing various input fields for defect details such as 'Actual Fix Time', 'Defect Turn Around Time', 'Closing Date', 'Detected in Cycle', 'Detected on Date', 'Reportable', 'Severity', 'Subject', 'Target Release', 'Assigned To (Name)', 'Effective Date', 'Policy Note', 'Defect Open Date', 'Estimated Fix Date', 'Detected By', 'Detected in Release', 'Priority', 'Assigned To (ID)', 'Status', 'Target Cycle', 'Test Phase', 'Modified', and 'Production Tracker ID'. At the bottom, there's a rich text editor for 'Description' and standard 'Submit', 'Close', and 'Help' buttons. The Capgemini logo is at the bottom left, and copyright information is at the bottom right.

New Defect Screen - Fields

Mandatory fields for new defect

Field Name	Values
Summary	A short description of defect
Description	Actual vs. Expected Results, Detailed Steps to Reproduce etc.
Detected in Release	Select release from dropdown
Status	Default Status is 'New' and not editable
Severity	Select Severity among High, Medium and Low
Priority	Select Priority among High, Medium and Low
Test Phase	Select appropriate Test Phase from dropdown
Assigned To (ID)	Owner of defect at current state, All the QC project user id's are listed in dropdown
Detected By	Auto Filled with logged in user ID
Detected on Date	Auto filled with current Date



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New Defect Screen – Fields (Cont.)

Non mandatory fields for new defect

Field Name	Values
Detected in Cycle	Select test cycle from dropdown
Reproducible	Select 'Y' or 'N'
Policy No#	Enter Policy number used in which defect was found
Effective Date	Date specific to the policy
Subject	Tag project name from dropdown



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Update Defect

- Add a new comment
 - 1. Click the Add Comment button. A new section is added to the Comments box, displaying your user name and the current date
 - 2. Type Comment

Comments:

Gunwant Pawar <npgm34u>, 11/17/2013: Re-test successfully completed. Defect is ready to close

Gunwant Pawar <npgm34u>, 11/17/2013: Defect Closed

Gunwant Pawar <npgm34u>, 11/26/2013:

Gunwant Pawar <npgm34u>, 12/04/2013: [redacted]

Add Comment

- 3. View the Attachments: Click Attachments on the sidebar

Defect Details

QC Defect ID: 7 Summary: Incorrect factor value

Attachments

Name	Size	Modified
Excel Add-in.doc	668 KB	12/03/2013 9:51:40 AM

Attachments

Open Save As Delete

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Update Defect (Cont.)

View History

1. Click History on the sidebar to view the history of changes made to the defect
2. For each change, the grid displays the date and time of the change and the name of the user who made the change
3. 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

Audit Log		
Field	Old Value	New Value
Change #10: Date: 11/26/2013 11:41:53 AM Changer: rpgm34u		
Comments	Gunwant Pawar rpgm34u, 11/17/...	Gunwant Pawar rpgm34u, 11/17/...
Change #5: Date: 11/18/2013 1:29:55 PM Changer: rpgn30r		
Assigned To (Name)		Gunwant Pawar
Change #8: Date: 11/17/2013 5:20:19 PM Changer: rpgm34u		
Comments	Gunwant Pawar rpgm34u, 11/17/...	Gunwant Pawar rpgm34u, 11/17/...
Status	Ready to close	Closed
Change #7: Date: 11/17/2013 5:19:41 PM Changer: rpgm34u		
Comments	Gunwant Pawar rpgm34u, 11/17/...	Gunwant Pawar rpgm34u, 11/17/...
Status	Re-Test	Ready to close
Change #6: Date: 11/17/2013 5:09:09 PM Changer: rpgm34u		
Status	Fixed	Re-Test
Change #5: Date: 11/17/2013 5:08:56 PM Changer: rpgm34u		
Change #4: Date: 11/17/2013 5:08:08 PM Changer: rpgm34u		
Change #3: Date: 11/17/2013 3:48:15 PM Changer: rpgm34u		
Change #2: Date: 11/17/2013 3:24:25 PM Changer: rpgm34u		
Change #1: Date: 11/17/2013 3:15:05 PM Changer: rpgm34u		



Demo

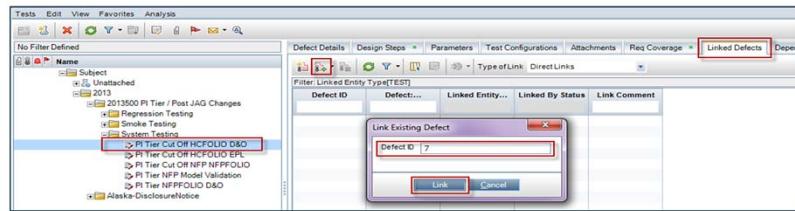
- Add New Defect
- Update Defect



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Linking Defects to Test

1. In the Test Plan tree, select test to be linked with existing defect
2. Select Linked Defects Tab and click on link existing defect. The Link existing defect dialog box opens
3. Enter Defect ID and click on Link button



4. Linked Tests reflects in Linked Entities → Others Tab of Defect

The screenshot shows the 'Defect Details' screen for a specific defect. The 'QC Defect ID' is set to '7'. The 'Details' tab is selected. In the 'Linked Entities' section, there is a link to the 'Others' tab of another defect. This 'Others' tab shows a table with one row of data. The columns are: 'Created By', 'Creation Date', 'Link Comment', 'Link ID', 'Link Type', 'Linked By Status', 'Linked Entity ID', 'Linked Entity...', and 'Linked Entity...'. The data in the row is: 'rogm34u', '12/04/2013', 'PI Tier Cut Off HCFOLIO Test', '1', 'Not Completed', '8', 'PI_Tier_CutOff_HCFOLIO', and 'Test'. The Capgemini logo is visible at the bottom left, and the copyright information 'Copyright © Capgemini 2015. All Rights Reserved' is at the bottom right.

Duplicate Defects/Find Similar Defects

- Identifying matching defects enables you to eliminate duplicate or similar defects in project
- Each time you add a new defect, Quality Center stores lists of keywords from the Summary and Description fields. When you search for similar defects, keywords in these fields are matched against other defects

The screenshot shows the Quality Center application interface. At the top, there's a menu bar with 'Defects', 'Edit', 'View', 'Favorites', and 'Analysis'. Below the menu is a toolbar with icons for 'New Defect...', 'Search', and 'Filter'. A main window displays a table of defects with columns: QC Defect ID, Summary, Description, Assigned to (ID), Priority, Severity, Status, Detected By, and Detected in...'. One row is highlighted with a red border. Below the table is a detailed view of the selected defect (ID 2). The 'Summary' tab shows the text: 'Incorrect factor v... The factor value i...'. The 'Description' tab contains the text: 'The factor value is not appearing as defined in the Model Spec as shown'. There are tabs for 'Attachments', 'Linked Entries', 'History', 'Long Description Should...', 'Long Description What Ha...', 'Notes Log', and 'Resolution'. At the bottom of the interface, there's a footer with the Capgemini logo and copyright information: 'Copyright © Capgemini 2015. All Rights Reserved' and '13'.

Demo

- Linking Defects to Test
- Duplicate Defects/Find Similar Defects



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Defect Update by DS team

- 'Estimated Fix Date' field become mandatory when Developer change defect status to Accepted
- When Developer Changes defect status to Fixed:
 - Root Cause fields becomes mandatory
 - Sub Root cause field becomes mandatory for selected root causes
 - Developer should update 'Actual Fix Time' field with hours consumed in fixing defect
 - 'Defect Turn Around Time' will be auto populated with the difference in days between Defect Open Date and Current Date



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Defect Update by DS team (Cont.)

Defect Details	ClearQuest Specific Details	Long Description Should...	Long Description What Ha...	Notes Log	Resolution
Actual Fix Time:	20			Defect Open Date:	11/17/2013
Defect Turn Around Time:	0			Estimated Fix Date:	11/20/2013
Closing Date:				Detected By:	NPGM34U <input checked="" type="checkbox"/>
Detected in Cycle:	Cycle 1 - New			Detected in Release:	Release 13.4
Detected on Date:	11/17/2013			Priority:	Medium
Reproducible:	Y			Assigned to (ID):	npgm34u <input checked="" type="checkbox"/>
Severity:	1-Low			Status:	Fixed
Subject:	System Testing			Target Cycle:	
Target Release:				Test Phase:	Smoke Test
Assigned To (Name):				Modified:	11/17/2013 5:10:16 PM
Root Cause:	Design			Effective Date:	11/23/2013
Policy No#:	Policy#2			Production Tracker ID:	



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Defect Update by Test Lead

- Cancelling Defect
- A Test Lead can Cancel Defect after New or Open status due to one of these reason:
 - Test Lead Cannot Recreate Defect
 - Duplicate Defect entry
 - Infrastructure related issue
 - Requirement misunderstanding by QSS
 - Not Project Related Defect
- 'Root Cause' field becomes mandatory when defect status changes to Cancelled



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Defect Update by Test Lead (Cont.)

- Rejecting Defect
- A Test Lead can Reject Defect after Open status due to one of these reason:
 - Test Data Error
 - Test Case Error
 - Release Error
 - Developer Cannot Recreate Defect
 - Training issue with QSS
 - Requirement misunderstanding by QSS
 - Business Artifacts misunderstanding by QSS
- 'Root Cause' field becomes mandatory when defect status changes to Rejected
- If Developer decides to Reject defect, they need to change status to open and assign to test lead to Reject defect



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Defect Update by Test Lead (Cont.)

▪ Deferring Defect

- A Defect can be Deferred, if defect has been deemed not necessary for the next production release.
- Defect entry is still considered a non- resolved defect
- If Developer or BA decides to Defer a defect, they need to change status to open and assign to Test Lead. Later Test Lead can change defect status to Deferred

▪ Closing Defect:

- Auto populate 'Closing Date' field with current Date when Defect status changed to Closed

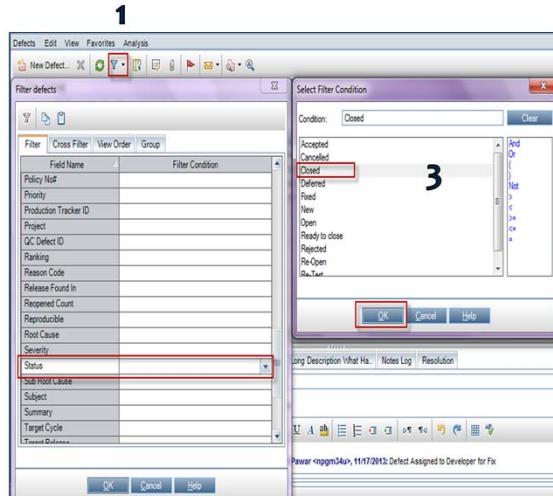


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Creating Favorite Views

- A favorite view is a view of an Quality Center 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 “Closed”

Define Filter

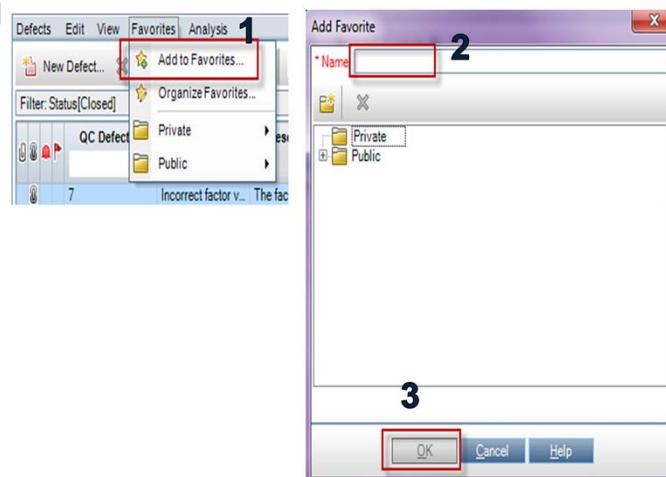


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Creating Favorite Views (Cont.)

- In the Favorites menu, select Add to Favorites. The Add Favorite dialog box opens
- In the Name box, type view name
- Select Private or Public folder and click Ok to add customized view in your favorite view

Add to Favorite View



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Demo

- Creating Favorite Views



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HP ALM Quality Center Roles and Access

Roles in QC	Add Defect	Delete Defect	Modify Defect	Authorized Status
Test Lead	Yes	No	Yes	New, Open, Cancelled, Rejected, Deferred, Ready to Close, Closed, Re-Open
Tester Developer*	Yes	No	Yes	New, Open, Ready to Close, Closed
	No	No	Yes	Accepted, Fixed, Open and Re-Test <ul style="list-style-type: none">• Add Comment• View and upload attachments• Re-assign Defect
BA*	No	No	Yes	All Status
TDAdmin Viewer	Yes	Yes	Yes	Only View defects

* Developers and BA have Read Only access to Requirement, Test Plan and Test Lab modules in Quality Center



Severity Definition

- High

- Test result indicates that the system, as currently implemented, is unsuitable for use in the production environment
- Severe variances would include cases where the system lost or corrupted data, incorrectly computed values that are essential to the operation of the system, or when a critical function did not return a result or caused the system to terminate abnormally
- The QA testing cannot be approved, and the system cannot be released for use until the problem has been fixed

- Medium

- The test result indicates there is a significant problem in the system, but the system can be used on an interim basis
- Some variety of “work around” such as keeping a manual log, performing a calculation manually or using another feature of the system to perform the task, can be devised to address the problem
- The corrective action for the variance must include a description of the interim solution



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Severity Definition (Cont.)

- Low

- Some aspect of the program does not perform according to specification
- However, the out-of-specification performance does not affect the intended functionality, and no repairs are required before the QA testing can be approved
- Correction may be desired in a future system release



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Priority Definition

- High - Further development and/or testing cannot occur until the defect has been repaired. The system cannot be used until the repair has been resolved
- Medium - The defect should be resolved in the normal course of development activities. Defect resolution can wait until a new build or version is created
- Low - The defect is an annoyance which should be repaired, but repair can be deferred until after more serious defect has been fixed



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Summary

- In this lesson, you have learnt:
 - Introduction to Defect Module
 - Defect Tracking & Management
 - Defect Linkage
 - Defect Life Cycle
 - How to add new defect?
 - Introduction to new defect screen fields
 - How to update defect?
 - How to link defects to test?



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Summary

- In this lesson, you have learnt:
 - How to find duplicate defects/find similar defects
 - Defect Update by DS team
 - Defect Update by Test Lead
 - How to creating favorite views?
 - HP ALM Quality Center Roles and Access
 - Severity Definition
 - Priority Definition



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Test Management Tool

Lesson 6: Introduction to HP ALM
Analysis

Lesson Objectives

- To understand the following topics:
 - Introducing HP ALM Analysis
 - Introduction to Dashboard Module
 - Graphs
 - HP ALM Options to Create Graphs
 - Entity Graph Types – Requirements Graphs
 - Entity Graph Types – Test Plan Graphs
 - Entity Graph Types – Test Lab Graphs
 - Entity Graph Types – Defect Graphs
 - Creating Graphs
 - Configuring Graphs in HP ALM
 - Generating Predefined Graphs in Quality Center
 - Business View Graphs
 - Entity Graphs Vs. Business View Graphs
 - Working with Dashboard Pages in HP ALM



Introducing HP ALM Analysis

- HP ALM provides you with analysis tools enabling you to analyze and display ALM data in various formats
- We can generate interactive graphs that demonstrate a wide variety of business performance perspectives, or define reports with any cross section of data
- We can also monitor multiple business metrics, by arranging multiple graphs alongside each other in a single view
- Throughout the application lifecycle, you can monitor and control strategic points by generating reports and graphs



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Introduction to Dashboard Module

- In the **Dashboard** modules, we can analyze ALM data by creating, viewing & managing graphs, standard project reports, and Excel reports
- We can also create dashboard pages that display multiple graphs side-by-side
- After you have created graphs in the Analysis View module, you can select and arrange multiple graphs, and view them side-by-side in a dashboard page
- You can create graphs that include data from multiple ALM projects



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Introduction to Dashboard Module (Cont.)

- Dashboard contains following modules:
- Analysis View module
 - Contains the analysis tree in which you organize all of your analysis items
 - Analysis items can be any of the following analysis types: graphs, project reports, and Excel reports
 - This tab enables you to manage the analysis items that are generated from within the Analysis menu in specific modules, such as Requirements and Test Lab
 - In the Analysis View module, you can create graphs and configure them according to your specifications
 - 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.
- Dashboard View module
 - Contains the dashboard tree in which you organize dashboard pages
 - In dashboard pages you arrange multiple graphs that you created in the analysis tree, and display them in a single view



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Graphs

- HP Application Lifecycle Management (ALM) graphs help you analyze and view the relationships between different types of data
- Following are the types of graphs those can be created in ALM:
 - Entity Graphs - Each graph is based on a single entity only, such as requirements or defects, and enables you to view any of the entity's attributes. When viewing Entity graphs, you can drill down to the records represented by each bar or segment.
 - Business View Graphs - A graph based on a business view represents either a single entity or multiple entities, and reflects business value information only.



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HP ALM Options to Create Graphs

Options	Description	Graph Type
Predefined	<ul style="list-style-type: none">Enable you to quickly analyze data related to a specific module.Predefined graphs display data from the existing module filter.You can save predefined graphs in the Analysis View module for future reference.	Entity
Analysis View Module	<ul style="list-style-type: none">Enables you to filter data, set various configurations, and organize the graphs in folders.	Entity Business View
Graph Wizard	<ul style="list-style-type: none">Guides you through the stages of creating and configuring a graph	Entity Business View



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Entity Graph Types – Requirements Graphs

Graph Type	Description
Requirements Coverage Graph	<ul style="list-style-type: none">Shows how many requirements are currently in an ALM project, according to their test coverage status.
Requirements Progress Graph	<ul style="list-style-type: none">Shows how many requirements accumulated in an ALM project at specific points during a period of time.Specify the time interval displayed along the x-axis, and the requirement information by which ALM groups the data.Specify whether you want to view the number of requirements or the change in the number of requirements.
Requirements Summary Graph	<ul style="list-style-type: none">Shows how many requirements are currently in an ALM project.Specify the type of data displayed along the x-axis, and the requirement information by which ALM groups the data.



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Entity Graph Types – Requirements Graphs (Cont.)

Graph Type	Description
Requirements Trend Graph	<ul style="list-style-type: none">Shows the history of changes to specific requirement fields in an ALM project, for each time interval displayed.Specify the field for which you want to view the number of changes, and the time period for which you want to view data.Each status change is only recorded once for the purpose of this graph.For example, if a field was changed from Not Completed to Passed to Not Completed, the Not Completed status change will only be recorded once in this graph.



Entity Graph Types – Test Plan Graphs

Graph Type	Description
Test Plan Progress Graph	<ul style="list-style-type: none">Shows how many tests accumulated in an ALM project at specific points during a period of time.Specify the time interval displayed along the x-axis and the test plan information by which ALM groups the data.Specify whether you want to view the number of tests or the change in the number of tests.
Test Plan Summary Graph	<ul style="list-style-type: none">Shows how many tests are currently in an ALM project.Specify the type of data displayed along the x-axis, and the test plan information by which ALM groups the data.
Test Plan Trend Graph	<ul style="list-style-type: none">Shows the history of changes to specific Test Plan fields in an ALM project, for each time interval displayed.Specify the field for which you want to view the number of changes, and the time period for which you want to view data.Each status change is only recorded once for the purpose of this graph.



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Entity Graph Types – Test Lab Graphs

Graph Type	Description
Test Set Progress Graph	<ul style="list-style-type: none">Shows how many tests accumulated in test sets at specific points during a period of time.Specify the time interval displayed along the x-axis, and the test information by which ALM groups the data.Specify whether you want to view the number of tests or the change in the number of tests.
Test Set Summary Graph	<ul style="list-style-type: none">Shows how many tests in an ALM project belong to test sets.Specify the type of data displayed along the x-axis, and the test plan and test in test set information by which ALM groups the data.
Test Run Summary Graph	<ul style="list-style-type: none">Shows the status of runs in the project, grouped by Tester.



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Entity Graph Types – Defect Graphs

Graph Type	Description
Defects Age Graph	<ul style="list-style-type: none">Shows the lifetime of defects in an ALM project.The lifetime of a defect begins when it is reported, and ends when it is closed.Specify the defect information by which ALM groups the data, and the data displayed along the y-axis.Specify the time interval that you want to use to divide the data.The age of a Closed defect is the difference between the date on which it was reported and the date on which it was closed.After a defect is closed, its age remains static.



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Entity Graph Types – Defect Graphs (Cont.)

Graph Type	Description
Defects Progress Graph	<ul style="list-style-type: none">Shows the accumulation of defects in an ALM project, or the estimated/actual amount of time taken to fix these defects, at specific points during a period of time.Specify the time interval displayed along the x-axis, the defect information by which ALM groups the data, and the data displayed along the y-axis.Specify whether you want to view the number of defects or the change in the number of defects.
Defects Summary Graph	<ul style="list-style-type: none">Shows a summary of the number of defects in an ALM project, or the estimated/actual amount of time taken to fix these defects.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 ALM groups the data.



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Entity Graph Types – Defect Graphs (Cont.)

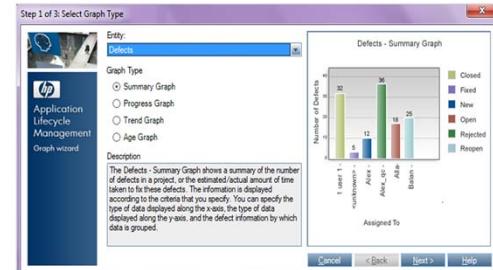
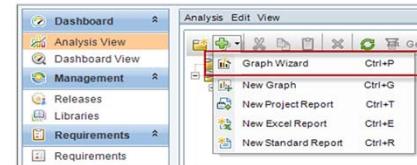
Graph Type	Description
Defects Trend Graph	<ul style="list-style-type: none">Shows the history of changes to specific defect fields in an ALM project, for each time interval displayed.Specify the field for which you want to view the number of changes, and the time period for which you want to view data.Each priority change is only recorded once for the purpose of this graph.



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Creating Graphs

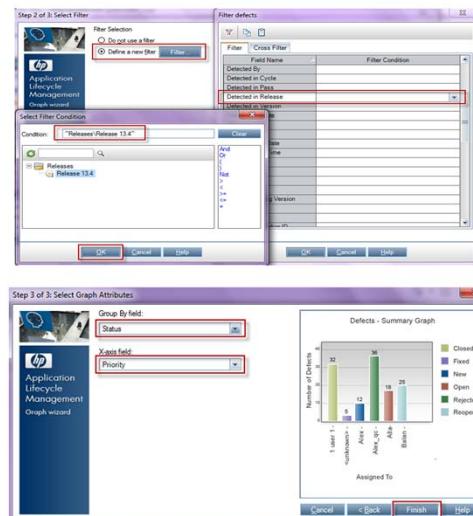
1. Select “Analysis view” under Dashboard Tab
2. Open the graph wizard
3. Click the New Item button and select Graph Wizard
4. The graph wizard opens on the Select Graph Type dialog box
5. Select Entity (Defect, Requirement, Tests etc.)
6. Select the graph type



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Creating Graphs (Cont.)

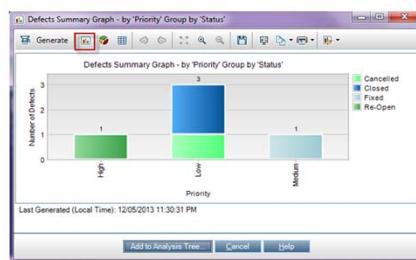
7. Define a filter on Detected in Release (You can define filter on various other fields)
8. Set the Graph Attributes
9. Click on 'Finish' button



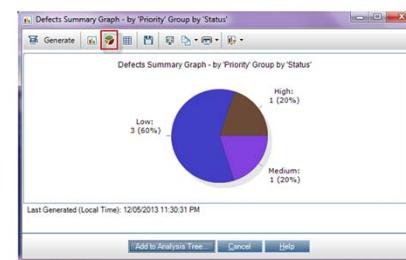
Creating Graphs (Cont.)

Graph Wizard Output

BAR Graph



PIE Graph



Save the graph in the Analysis View module

1. Click on 'Add to Analysis Tree' button
2. Select Folder (Public or Private)
3. Click on Save



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Demo

- Creating Entity Graph

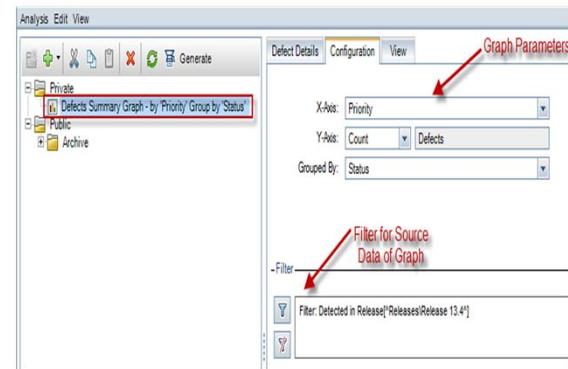


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Configuring Graphs in HP ALM

Configure a Generated Graph

1. Selecting any Graph of interest provides View tab and Configuration tab on right side
2. Configuration tab provides various selection parameter to configure report as needed



X – Axis: Select Data type to be plotted on X axis of Summary Graph

Filter: Select project data to be plotted in graph

Demo

- Configure Graph in HP ALM



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Generating Predefined Graphs in Quality Center

Quality Center provides lists of Predefined Graphs in each module

1. Choose Module → Analysis → Graphs
2. Select Predefined Graph from the list

The screenshot shows the HP ALM interface. On the left, there's a navigation sidebar with categories like Dashboard, Management, Requirements, Testing, and Defects. The 'Defects' category is highlighted with a red box. At the top, there's a toolbar with 'Defects', 'Edit', 'View', 'Favorites', and 'Analysis'. The 'Analysis' tab is selected. Below the toolbar, there's a 'No Filter Defined' section and a table with columns 'Actual Fix Time', 'Assi', and 'Most Recently Used'. A 'Graphs' dropdown menu is open, also highlighted with a red box. This menu lists several predefined graphs: 'Defects Summary - Group by 'Status'', 'Defects Progress - Group by 'Status'', 'Defects Age - Group by 'Status'', 'Defects Trend - Group by 'Status'', and 'Graph Wizard'. The 'Graphs' option itself is underlined. The bottom right corner of the interface shows the Capgemini logo and the text 'Copyright © Capgemini 2015. All Rights Reserved 21'.

Demo

- Creating Predefined Graphs



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Business View Graphs

- 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 Requirements, Baselines or Defects, while others can represent more complex relationships between entities, such as Defects With Linked Requirements or Defects With Linked Tests
- The advantage of creating graphs based on business views is that it ensures a standardization across the graphs
- Business View graphs are always the Summary graph type
- Business View graphs display 100MB of data
- You can change this setting by modifying the MAX_GRAPH_RESULT_DATA_TABLE_VOLUME parameter in the Site Configuration tab



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Entity Graphs Vs. Business View Graphs

- Even though at a high level, both graphs i.e. business view graph and entity graph look same, they are different as far as their implementation and a usage is concerned

Entity Graph	Business View Graph
<ul style="list-style-type: none">This graph is strictly associated with only one type of entity such as Defect, Requirement or Test.The fields involved are those that are contained within that specific entity.	<ul style="list-style-type: none">This graph is either based on single entity or based on relationship between different entities such as defect and Requirement or defect and tests.The fields involved are those that represent useful information from a business perspective.



Demo

- Creating Business View Graph



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Working with Dashboard Pages in HP ALM

- Typically, in dashboard pages we arrange multiple graphs that we created in the analysis tree, and display them in a single view
- The Dashboard View tab contains a tree in which we can organize dashboard pages
- Just like an analysis tree, dashboard tree also consist of Private and Public root folder
- Dashboard pages that we create in a public folder are accessible to all the users whereas the dashboard pages that we create in a private folder are accessible only to the user who created them
- Public dashboard pages can include only public graphs
- We can not include a graph from a private analysis folder in a public dashboard page



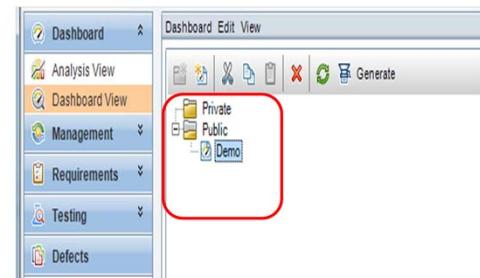
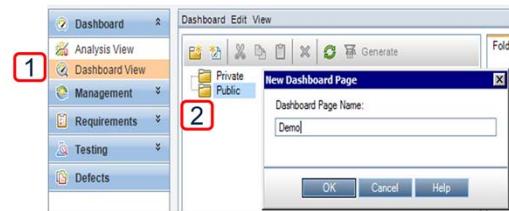
Working with Dashboard Pages in HP ALM (Cont.)

- Dashboard pages in a public folder may show different results for different users depending on the data hiding definitions for the user group
- We can configure dashboard pages by selecting and arranging graphs on your page
- Each row on the dashboard page can include one or two graphs
- We can change the maximum number of graphs that can be included in a dashboard page by setting DASHBOARD_PAGE_LIMIT site parameter



Generating Dashboard Pages in HP ALM

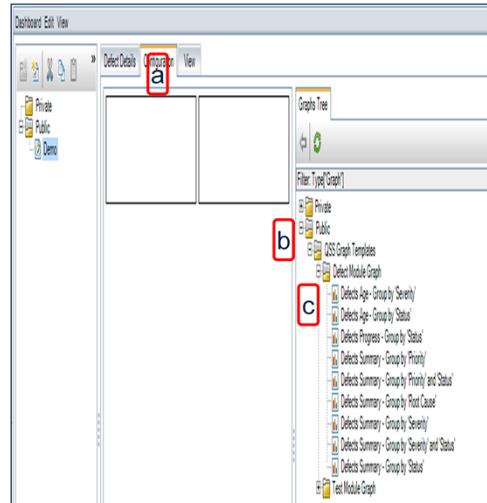
1. On the ALM sidebar, under Dashboard select Dashboard View
2. Add a page to the Public folder.
 - a. In the tree, select the Public folder
 - b. Click the New Page button. The New Dashboard Page dialog box opens
 - c. In the Dashboard Page Name field, type Summary of Defects page
 - d. Click OK.
 - e. A dashboard page is added to the dashboard tree under the Public folder.



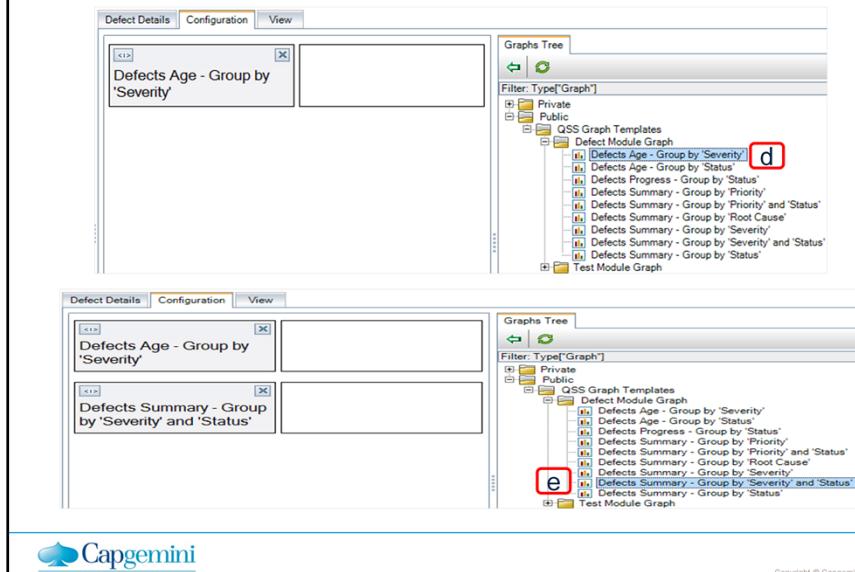
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Generating Dashboard Pages in HP ALM (Cont.)

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 one graphs to the dashboard page

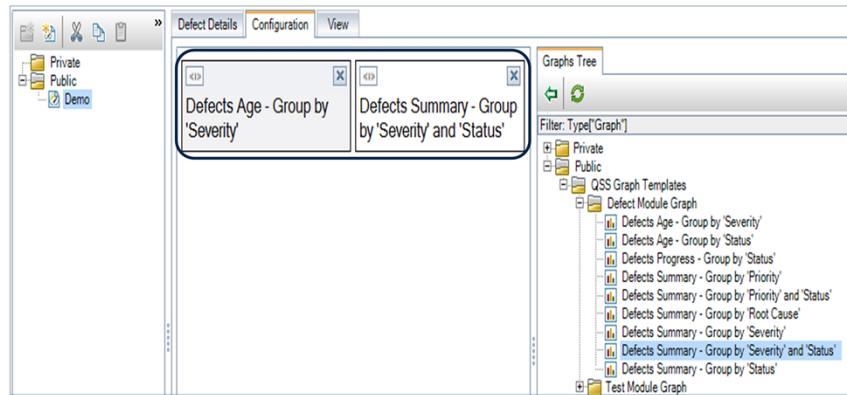


Generating Dashboard Pages in HP ALM (Cont.)



Generating Dashboard Pages in HP ALM (Cont.)

4. Rearrange the dashboard page



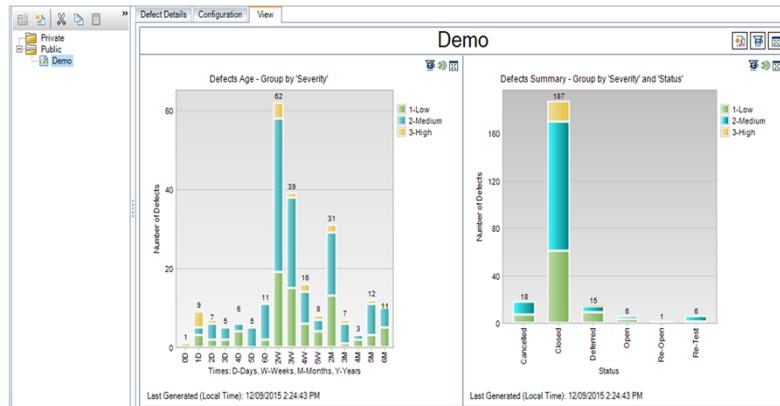
Generating Dashboard Pages in HP ALM (Cont.)

5. View the dashboard page

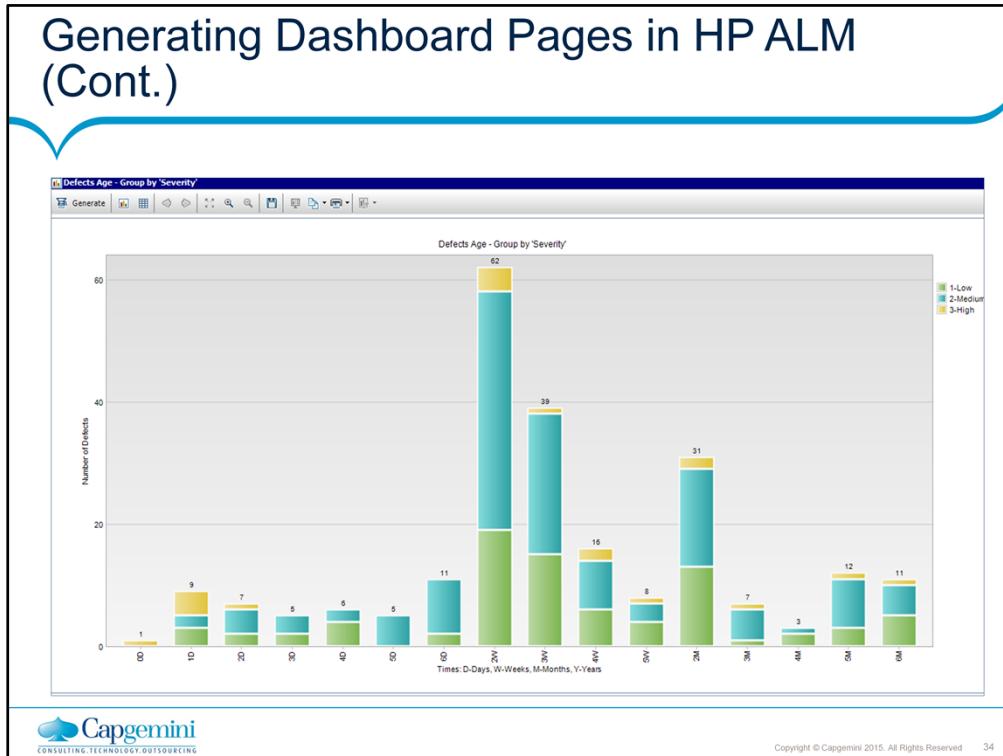


Generating Dashboard Pages in HP ALM (Cont.)

6. 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.



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Summary

- In this lesson, you have learnt:
 - Introduction to HP ALM Analysis
 - Introduction to Dashboard Module
 - HP ALM Options to Create Graphs
 - Entity Graph Types
 - How to create graphs?
 - Configuring Graphs in HP ALM
 - Generating Predefined Graphs in Quality Center
 - Business View Graphs
 - Entity Graphs Vs. Business View Graphs
 - Working with Dashboard Pages in HP ALM



Test Management Tool

Lesson 7: HP ALM Connection
with Automation Tool

Lesson Objectives

- To understand the following topics:
 - Integration of UFT with HP ALM
 - HP ALM Connection to UFT
 - Introduction to Document Generator in HP ALM



Integration of UFT with HP ALM

- HP ALM allows seamless integration with other HP products such as HP UFT and HP Load Runner
- HP UFT is a functional automation tool that supports automation of both windows based and web based application
- It also supports multiple technologies such as .NET, Java, Siebel, SAP etc.
- Prerequisite for this module is that both ALM and UFT must have been installed



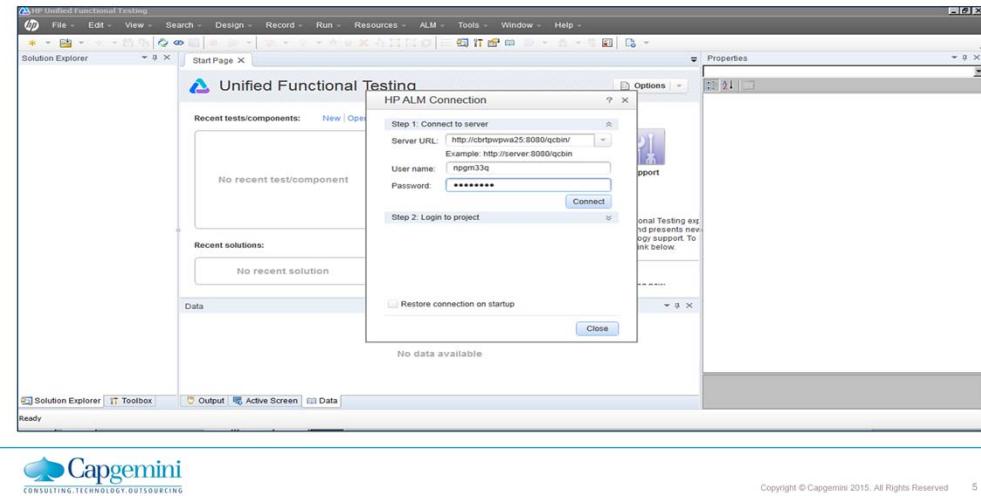
HP ALM Connection to UFT

1. Launch UFT
2. Click on ALM Tab and select ALM Connection

The screenshot shows the HP Unified Functional Testing (UFT) application window. The menu bar includes File, Edit, View, Search, Design, Record, Run, Resources, ALM, Tools, Window, and Help. The ALM tab is selected, and a sub-menu is open with options: Check Out..., Undo Check Out..., Check In..., Version History..., and Baseline History... A callout arrow points from the text 'Click on ALM Tab and select ALM Connection' to this menu. To the right of the menu, there's a Properties panel and a toolbar with icons for Options, What's New, Community, Links, and Support. The main workspace displays 'Recent tests/components' and 'Recent solutions' sections, both showing 'No recent test/component' and 'No recent solution'. A 'Data' section also indicates 'No data available'. At the bottom, there are tabs for Solution Explorer, Toolbox, Output, Active Screen, and Data. The Capgemini logo is visible at the bottom left, and copyright information is at the bottom right.

HP ALM Connection to UFT (Cont.)

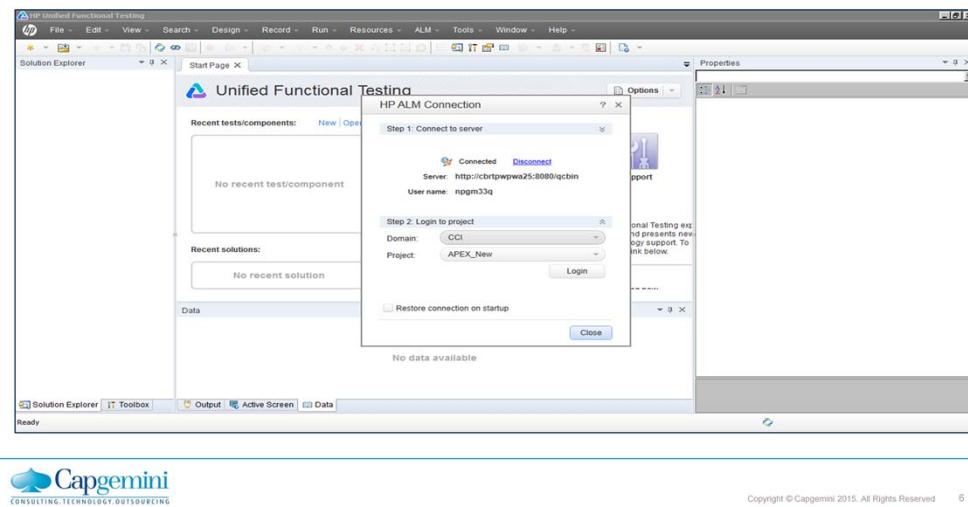
3. Enter HP ALM URL
4. Enter User Name and Password & click on Connect



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HP ALM Connection to UFT (Cont.)

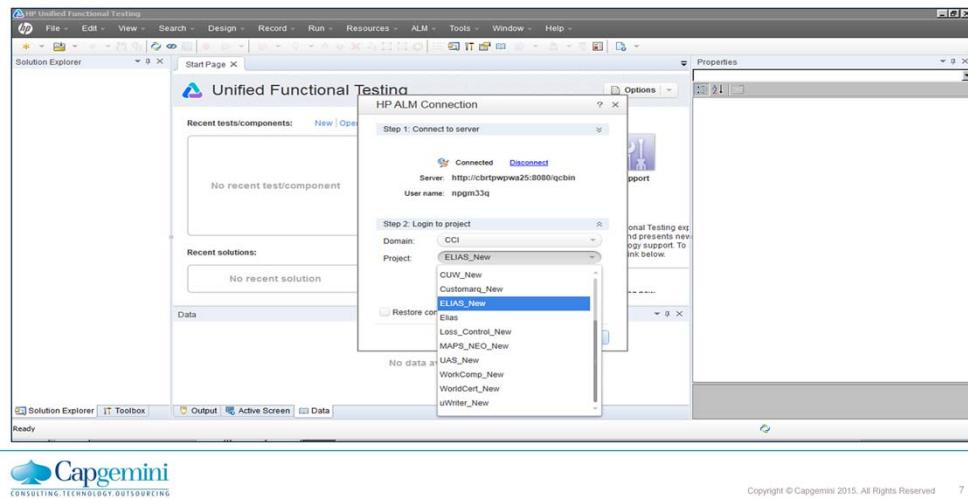
5. Login to Project
6. Select Domain and Project



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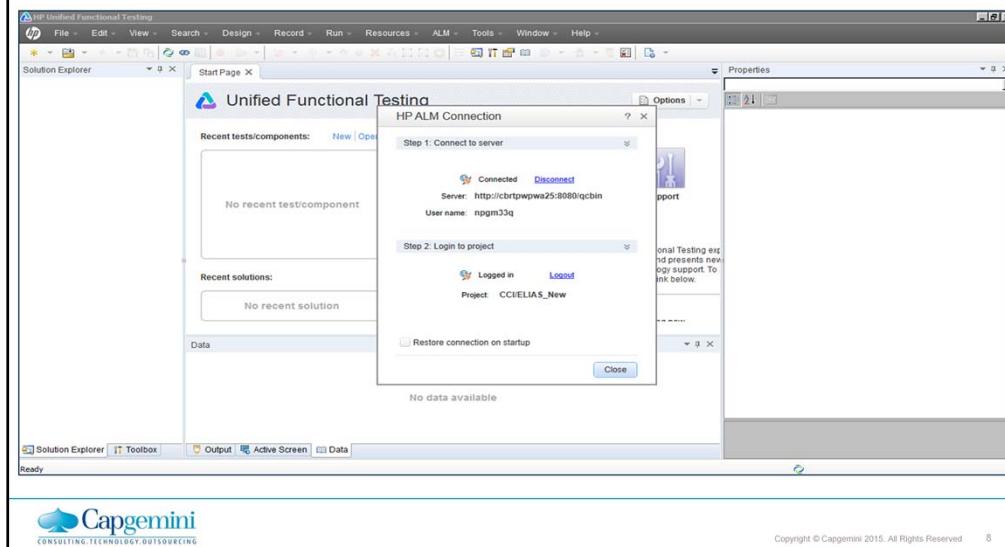
HP ALM Connection to UFT (Cont.)

7. Select appropriate Project
8. Click on Login



HP ALM Connection to UFT (Cont.)

9. User is successfully logged in to Automation Tool



Demo

- HP ALM Connection to UFT



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Introduction to Document Generator in HP ALM

- The HP ALM Document Generator feature facilitates you to create a Microsoft Word Document that can contain various ALM project items like requirements, test data, defect tracking data etc.
- The Document Generator can be executed only if Microsoft Word has been enabled to run macros
- The Document Generator enables to you to create a hard copy of data contained in a HP ALM Quality Center project



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Demo

- Using Document Generator



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Summary

- In this lesson, you have learnt:
 - Integration of UFT with HP ALM
 - HP ALM Connection to UFT
 - Introduction to Document Generator in HP ALM



HP ALM 11.0 – V1.0

Lab Book

Document Revision History

Date	Revision No.	Author	Summary of Changes
July-2016	1.0	Vaibhav Khandekar Prashant Naik	New content creation

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Lab 1. Launch HP ALM

Goals	<ul style="list-style-type: none">• Understand & learn the process of launching HP ALM application.• Understand & learn the process of login into HP ALM application.
Time	10 Minutes

1.1 HP ALM Home Screen

Validate whether user is able to Launch HP ALM application by using URL.

Steps to Launch HP ALM application

1. Open Web browser i.e. I.E browser
2. Launch the HP ALM application using correct URL:
3. Hit Enter button
4. HP ALM application will be launched successfully.
5. User will get Login screen

1.2 HP ALM Login Screen

Validate whether user is able to login into HP ALM application by valid credentials.

Steps to Login into HP ALM application

Pre-Condition: User should be available on Login Screen

1. Type valid Username and Password
2. Click on Authenticate button
3. Select appropriate Domain and Project from dropdown
4. Click on Login button
5. HP ALM Window will be launched successfully.
6. User will get access to all modules

Lab 2. Release and Cycle Creation

Goals	<ul style="list-style-type: none"> • Understand & learn the process of creating releases in HP ALM. • Understand & learn the process of creating cycles under release in HP ALM.
Time	30 Minutes

2.1 Verify Creation of Release

Validate whether user is able to Create Release in HP ALM. Format of Date field is mm/dd/yyyy

Steps to Create Release in HP ALM

1. First step is to navigate to Management tab and click on "**Releases**" Tab.
2. Before creating a release, we can create a container/folder by clicking on a "**New Folder**" icon in releases module:
3. Give the folder name "2017"
4. Next step is to create new releases. To create a new release, click "**new release**" button and the New Release dialog opens.
5. Enter the following mandatory details as per below table:
 - a. Release Name
 - b. Start Date of the Release
 - c. End Date of the Release
 - d. Brief Description about the release (Optional)

Release Name	Start Date	End Date
2017 >> Release R1	01/01/2017	06/30/2017
2017 >> Release R2	07/01/2017	12/31/2017

6. After Entering the above details click "OK". The Release will be created.
7. Upon Selecting a particular Release, one can see the tabs that are relevant to the Releases.
8. Select Details Tab to retrieve the information about the details of the release that was provided during the creation of the Release.

2.2 Verify Creation of Cycle

Validate whether user is able to Create Cycle in HP ALM. Format of Date field is mm/dd/yyyy

Steps to Create Cycle in HP ALM

1. Select the Release under which you would like to create cycles
2. Click on "New Cycles" button and the new cycles dialog box opens where the release timelines are prepopulated as this cycle is created under the selected release.
3. User has to enter the following mandatory details in 'New Cycles' Window as per below table:
 - a. Name of the Cycle
 - b. Start Date of the Cycle
 - c. End Date of the Cycle.
 - d. Description (Optional)

Release	Cycle Name	Cycle Start Date	Cycle End Date
Release R1	Cycle 1	01/01/2017	03/31/2017
	Cycle 2	04/01/2017	06/30/2017
Release R2	Cycle 1	07/01/2017	09/30/2017
	Cycle 2	10/01/2017	12/31/2017

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- . Once all the cycle is created, user can access the same under created Release.
5. Select a particular cycle to access details of that cycle.

Lab 3.Specifying Requirement

Goals	<ul style="list-style-type: none"> • Understand & learn the process of Defining Requirement in HP ALM. • Understand & learn the process of View Requirement in HP ALM. • Understand & learn the Requirement Workflow in HP ALM.
Time	60 minutes

3.1 Defining Requirement

Validate whether user is able to Create New Requirements in HP ALM.

Steps to Create New Requirements in HP ALM

1. First step is to navigate to Requirements tab and click on "Requirements" Tab
2. Before creating a Requirement, we can create a container/folder by clicking on a "**New Folder**" icon in Requirements module:
3. In Requirements tree, select the root Requirement folder
4. Click the New Requirements Folder button
5. The New Requirement Folder dialog box opens. In the Requirement Folder Name box, type Requirement folder name "**2017**"
6. Click OK
7. The new Requirement folder is added to the Requirement tree
8. In Requirement tree, select the Requirement folder and Click the New Requirement button
9. The New Requirement dialog box opens
10. In the Name box, type requirement name "**Login_sample**"
11. Select Requirement Type "**Functional**"
12. Target Release and Cycle(previously created release and cycle)
13. Type Requirement Description in box and Click OK
14. The requirement is added to the folder.

3.2 Viewing Requirement

Validate whether user is able to view Requirements in HP ALM.

Steps to View Requirements in HP ALM

1. First step is to navigate to Requirements tab and click on "Requirements" Tab
2. Choose View >> Requirements Tree to display requirements in a tree
3. User is able to see detail view of requirement
4. Select columns to be visible in requirement tree by applying filter
5. Define a filter to view requirements created on a specific date
6. Click the Filter button. The Filter dialog box opens
7. For selected field, click the Filter Condition box
8. Click the down arrow button. The Select Filter Condition dialog box opens

3.3 Upload Requirements in HP-ALM

Validate whether user is able to upload Requirements in HP ALM.

Pre-condition: Requirements should be uploaded into excel sheet before uploading into AL-ALM

Steps to Upload Requirements in HP ALM

- Requirements are uploaded into Excel Sheet (Please refer the attached format)

Path	Name	Description	Comments	Requirement	Reviewed	Priority	Author	Target Release	Target Cycle	Attachment
2014.1\Functional	UI Design	Develop th	Develop th	Functional	Not Review	4-Very High	admin	2014\2014.1	2014\2014.1\cycle 1	D:\QC Doc
2014.1\Functional\UI Design	Left Pane	Link to all Calculator	Link to all Calculator	Functional	Reviewed	4-Very High	admin	2014\2014.1	2014\2014.1\cycle 1	
2014.1\Functional\UI Design	Header Tab	Link to home, Current	Link to home, Current	Functional	Reviewed	4-Very High	admin	2014\2014.1	2014\2014.1\cycle 1	
2014.1\Functional\UI Design	Calculator	Link to all types of Cal	Link to all types of Cal	Functional	Reviewed	4-Very High	admin	2014\2014.1	2014\2014.1\cycle 1	
2014.1\Functional\UI Design	Link to Sol	It should have links to	It should have links to	Functional	Reviewed	4-Very High	admin	2014\2014.1	2014\2014.1\cycle 1	
2014.1\Functional	Math Calc	Math Calculation	Math Calculation	Business	Reviewed	5-Urgent	admin	2014\2014.1	2014\2014.1\cycle 1	D:\QC Doc
2014.1\Functional\Math Calculation Creation	Mortgage	Mortgage (Develop th	Mortgage (Develop th	Business	Reviewed	5-Urgent	admin	2014\2014.1	2014\2014.1\cycle 1	
2014.1\Functional\Math Calculation Creation	Loan Calc	Loan Calculator	Loan Calculator	Business	Reviewed	5-Urgent	admin	2014\2014.1	2014\2014.1\cycle 2	
2014.1\Functional	Advertiser	Advertiser should	Advertiser should	Functional	Reviewed	1-Low	admin	2014\2014.1	2014\2014.1\cycle 2	
2014.1\Functional\Advertisement Panel	Advertiser	Upon Click the website	Upon Click the website	Functional	Reviewed	1-Low	admin	2014\2014.1	2014\2014.1\cycle 2	
2014.1\Functional	Social Web	Social Website Links	Social Website Links	Functional	Reviewed	1-Low	admin	2014\2014.1	2014\2014.1\cycle 2	
2014.1\Functional\Social Websites Grid	Availability	Connect to Social Net	Connect to Social Net	Functional	Reviewed	1-Low	admin	2014\2014.1	2014\2014.1\cycle 2	
2014.1\Functional	Website F	Website Footer Grid	Website Footer Grid	Functional	Reviewed	1-Low	admin	2014\2014.1	2014\2014.1\cycle 2	
2014.1\Non Functional	Performance	Performance Testing	Performance Testing	Performance	Reviewed	4-Very High	admin	2014\2014.1	2014\2014.1\cycle 3	D:\QC Doc
2014.1\Non Functional\Performance	Parameter	User: 200, Latency: 3f	User: 200, Latency: 3f	Performance	Reviewed	4-Very High	admin	2014\2014.1	2014\2014.1\cycle 3	
2014.1\Non Functional	Security	Security Check	Security Check	Undefined	Reviewed	4-Very High	admin	2014\2014.1	2014\2014.1\cycle 3	
2014.1\Non Functional	Cross Brow	To be Compatible with	To be Compatible with	Undefined	Reviewed	4-Very High	admin	2014\2014.1	2014\2014.1\cycle 3	
2014.1\Non Functional	Cross Platf	To be Compatible with	To be Compatible with	Undefined	Reviewed	4-Very High	admin	2014\2014.1	2014\2014.1\cycle 3	

- Create the Requirement Release Folder in QC where user wants to upload the requirements
- Navigate to ALM home page and click on "Tools" from the list of links.
- Click on "More HP ALM Addins" Link from the addins page as shown below.
- In the Addins page, select "Addins for Microsoft applications" and choose "Microsoft Excel"
- Upon selecting "Microsoft Excel", choose ALM 11.5 Excel addins. The exe file will be downloaded. Please also take a note of the supported MS Office Editions as shown in the below screenshot.
- Once the Addin is installed, upon opening the excel file and going to Addins tab, one can see Export to ALM button.
- Enter the Quality Center credentials to successfully establish a connection.
- Select the Domain and Project as shown below and click "Next".
- Select the Type of data that the user wishes to upload. In this case it is requirements.
- Enter a New map name. Upon creating once we can reuse it any number of times for uploading Requirements.
- Select the "Requirement Type" Column that we are going to upload. This should match as that of the Excel that we wish to upload.
- The Field Mapping Dialog opens. Here the user has to map the field in Quality Center against the column ID in Excel.

14. Select the HP ALM Field and click on Arrow Button. Map Field with Column Dialog opens. There the column Name in Excel should be entered
15. Map all the relevant columns. The Column Name in Red are the mandatory fields and
Click "Export"
16. The Data would be uploaded and it displays the final output. If successful it will upload completely and displays a message to the user with "Finish" Button
17. Login to Quality Center and check if the requirements are uploaded correctly or not.

Lab 4. Test Lab Module

Goals	<ul style="list-style-type: none">• Learn the process of creating Test Set Folder and adding test cases in execution grid.• Learn the process of executing the Test cases from Test set
Time	120 minutes

1.1 Verify Creation of Test Set

Validate user is able to Create Test set under Test Lab Module.

Steps to Create Test set under Test Lab module in HP ALM Application.

1. First step is to create a root folder as a container for having the test sets. We can name it in line with the release and cycle so that it is easy to track.
 - a. Go to 'Test Lab' Module under 'Testing' Tab
 - b. Create a new Folder by Clicking on 'New Folder' icon.
 - c. The 'New Test Set Folder' Dialog opens. Enter the name of the folder as '2017 R1 – Cycle 1'.
 - d. Click "Ok"
2. The Test Run Folder would be created.
3. Select the created folder and assign 'Cycle' to it which means the entire test set should be executed for Cycle 1.
4. Enter the name of test set and click 'OK'.
5. After creating the test set, we need to select the tests and add it to the test set.
 - a. Select the Test Set.
 - b. Navigate to "Execution Grid"
 - c. Click "Select Tests" button. Test Plan Tree comes up.
 - d. Select the Test to be executed for this cycle.
 - e. Click '<=' button
6. Select tests will be displayed in Execution Grid.
7. Repeat the above steps to create more test sets and select all the relevant tests planned for this cycle.

1.1 Execution of Test cases from Execution Grid

Validate user is able to execute test cases from execution grid under Test Lab Module.

Steps to execute test cases from execution grid in HP ALM Application.

1. Tests can be executed using below two options:
 - **Run Test Set** – This option allows user to execute all the tests in a selected test set.
 - **Run** – This option helps user to execute just the selected test.
2. Select “Run” option.
3. Two options will be displayed to the user.
 - **Manual Runner (default)** – The order of the tests displayed during the execution would be as that of the order that is displayed in the test set grid.
 - **Automatic Runner** – The order of the tests displayed during execution would be shown as that of the order set in the execution flow tab.
4. Click on Manual Runner (default) option.
5. Manual test runner displayed to the user.
6. Click on Begin Run button.
7. Below things will be displayed to the user.
 - a. Step numbers created during test design phase.
 - b. Description of selected step
 - c. Expected result of selected step.
8. Pass or fail each test step based on execution result.
9. Click on End Run button.
10. Repeat the above steps for all other test cases in execution grid.

Lab 5. Creation of Defect and linking to the test case

Goals	<ul style="list-style-type: none">• Learn the process of creating a new defect in HP ALM• Understand the process of linking the defect to test case.
Time	120 minutes

3.1: Creation of a new defect in HP ALM

Validate user is able to Create new defect for failed test case under Defects Module.

Steps to Create defect under Defects module in HP ALM Application.

1. Navigate to defects Tab in Quality Center and Click on "New Defect" button.
2. The "New Defect" Dialog Open up. Fill in the following mandatory information.
 - a. Enter Detected By Field
 - b. Enter the Detected on Date – By Default current date would be picked up
 - c. Set Severity level of a defect
 - d. User can also enter other information and brief description about the defect.
3. Attach screenshots/other relevant files associated with the defect using 'attachments' tab.
 - a. Click "Attachments" tab.
 - b. Click "Attachments" button.
 - c. Select a file from file explorer dialog.
 - d. Click "Open".
4. Selected file should be attached under attachment section.
5. Click on "Submit" button and verify the generated Defect ID.
6. Verify the newly posted defect in Defects tab.

3.2: Link a defect to Test case.

Validate user is able to link a defect to failed test case in HP ALM application.

Steps to link a defect to test case in HP ALM Application.

1. Go to Test Lab tab and choose the test that failed.
2. Click on Linked Defects and verify available two options
 - a. Add and link defect
 - b. Link Existing Defect.
3. Click on Link Existing Defect option.
4. Link Existing Defect pop up window opens up.
5. Enter the Defect ID and click on Link button.
6. Defect ID should be displayed under Linked Defects.

Lab 6. Creation of Defect and linking to the test case

Goals	<ul style="list-style-type: none">• Learn the process of creating a Graph in HP ALM• Understand the process of Creating Dashboard.
Time	120 minutes

6.1: Creation of a new Graph in HP ALM

Validate user is able to Create new Graph under Dashboard Module.

Steps to Create Graph under Dashboard module in HP ALM Application.

1. Select “Analysis view” under Dashboard Tab
2. Open the graph wizard. Click the New Item button and select Graph Wizard. The graph wizard opens on the Select Graph Type dialog box
3. Select Entity (Defect, Requirement, Tests etc.)
4. Select the graph type
5. Define a filter on Detected in Release (You can define filter on various other fields)
6. Set the Graph Attributes
7. Click on ‘Finish’ button
8. Graph Wizard Output
9. Save the graph in the Analysis View module
10. Click on ‘Add to Analysis Tree’ button
11. Select Folder (Public or Private)
12. Click on Save

6.2: Configure Graphs in HP ALM

Validate user is able to Configure Graph under Dashboard Module.

Steps to Configure Graph under Dashboard module in HP ALM Application.

1. Selecting any Graph of interest provides View tab and Configuration tab on right side
2. Configuration tab provides various selection parameter to configure report as needed

6.3: Generating Predefined Graphs in HP ALM

Validate user is able to Generate Predefined Graph for under Dashboard Module.

Steps to Create Predefined Graphs under Dashboard module in HP ALM Application.

1. Select “Analysis view” under Dashboard Tab
2. Choose Module> Analysis > Graphs
3. Select Predefined Graph from the list
4. Select Configuration tab
5. Select filter criteria to generate graph
6. Go to View
7. User is able to view the generated graph

6.4: Generating Dashboard Pages in HP ALM

Validate user is able to Generate Dashboard Pages for under Dashboard Module.

Steps to Create Dashboard Pages under Dashboard module in HP ALM Application.

1. On the ALM sidebar, under Dashboard, selects Dashboard View.
2. Add a page to the Public folder.
3. In the tree, select the Public folder.
4. Click the New Page button. The New Dashboard Page dialog box opens.
5. In the Dashboard Page Name field, type Summary of Defects page.
6. Click OK. A dashboard page is added to the dashboard tree under the Public folder.
7. Select the graphs that you want to include in the dashboard page.
8. Click the Configuration tab.
9. In the Graphs Tree pane, expand the Public folder.
10. Expand the Defects folder. The folder includes four graphs.
11. Double-click the first graph. A placeholder for the graph is created in the Configuration tab displaying the graph's title.
12. Add one more graph to the dashboard page.
13. Rearrange the dashboard page
14. View the dashboard page.
15. To view the dashboard page in full-screen mode, click the View Page in
16. Full Screen button, located in the upper-right corner of the page.
17. To view the dashboard page in full-screen mode, click the View Page in
18. Full Screen button, located in the upper-right corner of the page.