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About the Tutorial

HP Quality Center (QC), a commercial test management tool by HP, supports various phases of software development life cycle. It is popularly known as HP-ALM Application Life Cycle Management. HP Quality Center is also available as a Software-as-a-Service offering.

This tutorial will give you an in-depth understanding on HP Quality Center, its way of usage, project tracking and planning, and other tabs in QC such as Management, Test Plan, Test Lab, defects management and Dashboard view.

Audience

This tutorial is designed for Software Testing Professionals with a need to understand HP QC in detail. It will give you enough ingredients to start with QC from where you can take yourself to higher levels of expertise.

Prerequisites

Before proceeding with this tutorial, you should have a basic understanding of software development life cycle (SDLC). In addition, you should have some prior exposure to software testing as a process.

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1. HP QC – INTRODUCTION

What is Quality Center?

HP Quality Center (QC), a test management tool, is now popularly known as **A**pplication **L**ife Cycle **M**anagement (ALM) tool, 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, and resources. It also aids in keeping track of project health, standards that allow Product owners to guage the current status of the product. It is important to understand the history, architecture, and workflow of Quality Center.

History of QC

Quality Center was formerly known as Test Director, a product of Mercury Interactive. The following table provides us a better insight about the version history of QC.

S.No#	Commercial Name	Version Numbers	Owned By
1.	Test Director	v1.52 to v8.0	Mercury Interactive
2.	Quality Center	v8.0 to v9.0	Mercury Interactive
3.	Quality Center	v9.2 to v10.0	Hp
4.	ALM	v11.0 to v11.5x	Hp

Architecture of QC

HP-ALM is 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 users' requests.

Site Administration Database is hosted on a standalone database server, while other project related data are stored on a separate database server. The following diagram shows how the setup of QC would be in a large corporation.

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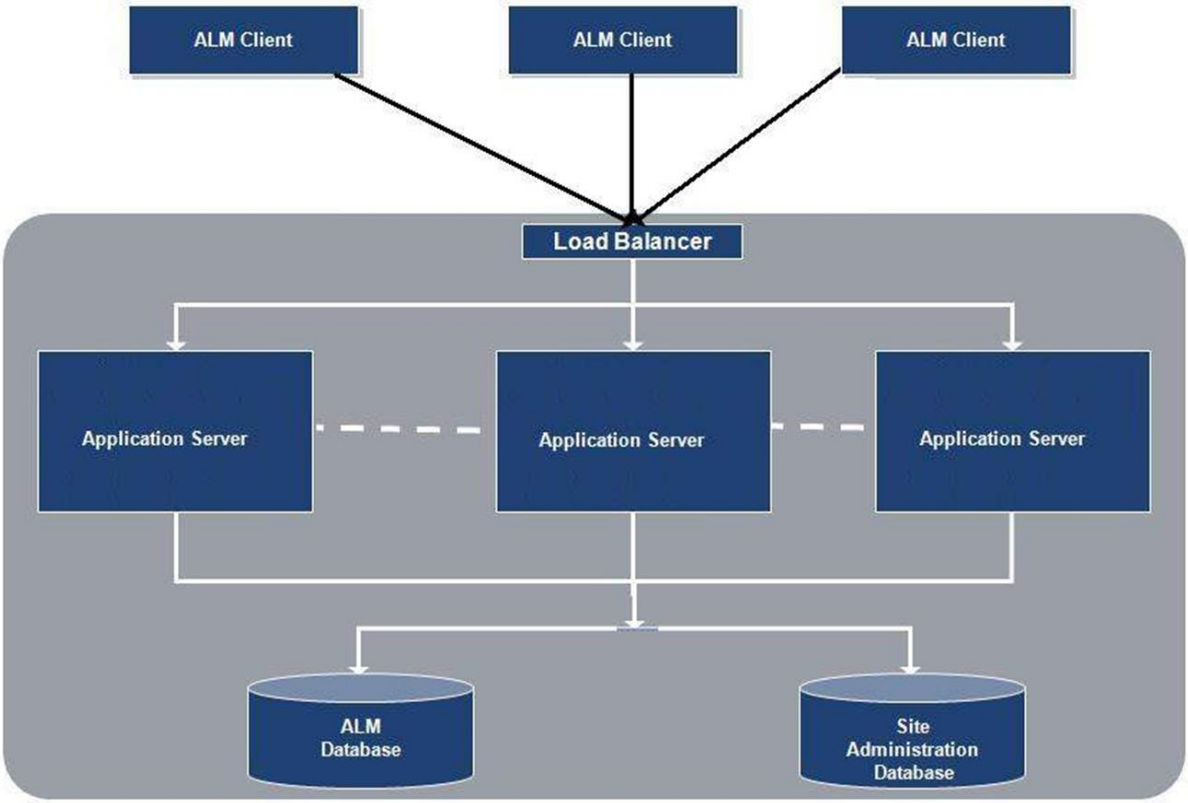

HP ALM Editions

HP ALM is a commercial licensed tool and HP deploys it in four different editions that are listed below:

- HP ALM
- HP ALM Essentials
- HP Quality Center Enterprise Edition
- HP ALM Performance Center Edition

ALM Edition Feature Comparison

Each one of the above editions has its own limitation in terms of ALM functionalities. Based on the following table, one can decide which license is required for their project purpose.

Feature	HP ALM	HP ALM Essentials	HP QC Enterprise Edition	HP ALM Performance Center Edition
Release Management	Yes	Yes	Yes	Yes

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Project Planning and Tracking	Yes	No	No	No
Risk Based Quality Management	Yes	No	Yes	No
Test Authoring and Execution	Yes	Yes	Yes	Yes
Test Resources	Yes	Yes	Yes	Yes
Test Configurations	Yes	No	Yes	Yes
HP Sprinter	Yes	No	Yes	No
Lab Management	Yes	No	No	Yes
Versioning	Yes	No	Yes	Yes
Baselining	Yes	No	Yes	Yes
Cross Project Customization	Yes	Yes	No	Yes
Sharing Defects	Yes	No	No	No

Quality Center Workflow

The following diagram shows the workflow of Quality Center:

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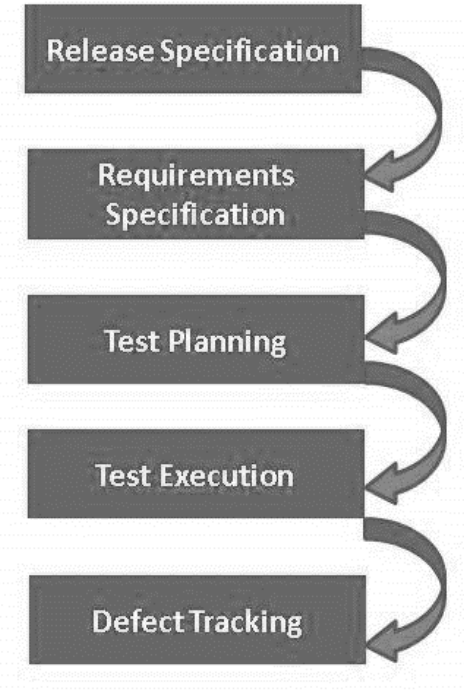

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2. HP QC – ENVIRONMENT SETUP

HP-Quality Center Setup

HP Quality Center Environment Setup is a complicated process and it is NOT the usual installation that we carry out on a Windows operating system.

Enterprise installation would be distributed, however for learning/evaluating purpose, one can install the trial version of HP-ALM 11.5x on a standalone server. One should also need to take care of the prerequisites carefully to carry out a successful installation.

Prerequisites for Installing QC

For evaluation purpose, both client and server can reside on the same system and in this chapter, we will do the installation of that kind.

Supported Windows Operating Systems

Only the following list of Windows OS are supported, hence one has to ensure that HP-ALM is installed on one of the following Windows OS only:

- Microsoft Windows Server 2008 Enterprise SP2 32 Bit/64 Bit
- Microsoft Windows Server 2008 R2 Enterprise SP1 64 Bit
- Microsoft Windows Server 2012 Standard 64 Bit
- Microsoft Windows Server 2012 R2 Standard 64 Bit

Supported Databases

Ensure that you have one of the following databases installed in your system before proceeding to install HP-ALM:

- Oracle 10.2.0.5
- Oracle 11.2.0.3
- Oracle 11.2.0.4
- Microsoft SQL Server 2005 SP4
- Microsoft SQL Server 2008 R2 SP1

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- Microsoft SQL Server 2008 R2 SP2

Supported AppServers

Ensure that the server has got any of the following AppServers installed:

- Apache 2.2
- Microsoft IIS 7.0
- Microsoft IIS 7.5
- Microsoft IIS 8.0
- Microsoft IIS 8.5

Supported Browsers

HP ALM can be accessed only by using Active X based browsers, hence Internet Explorer is the only browser that is supported:

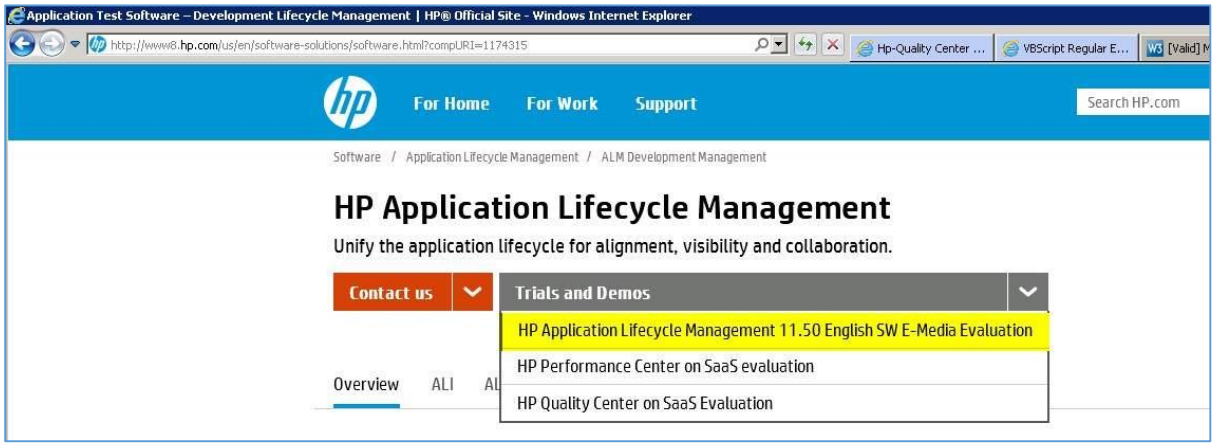
- Microsoft Internet Explorer 8
- Microsoft Internet Explorer 9
- Microsoft Internet Explorer 10
- Microsoft Internet Explorer 11

Downloading HP-ALM

Following are the steps for downloading the 30-day trial version of HP-ALM from HP website.

Step 1 : Launch the following URL - http://www8.hp.com/us/en/software-solutions/software.html?compURI=1174315

Step 2 : Click on "Trials and Demos" and Select "HP Application LifeCycle Management 11.50 English SW E-Media Evaluation" as shown below:



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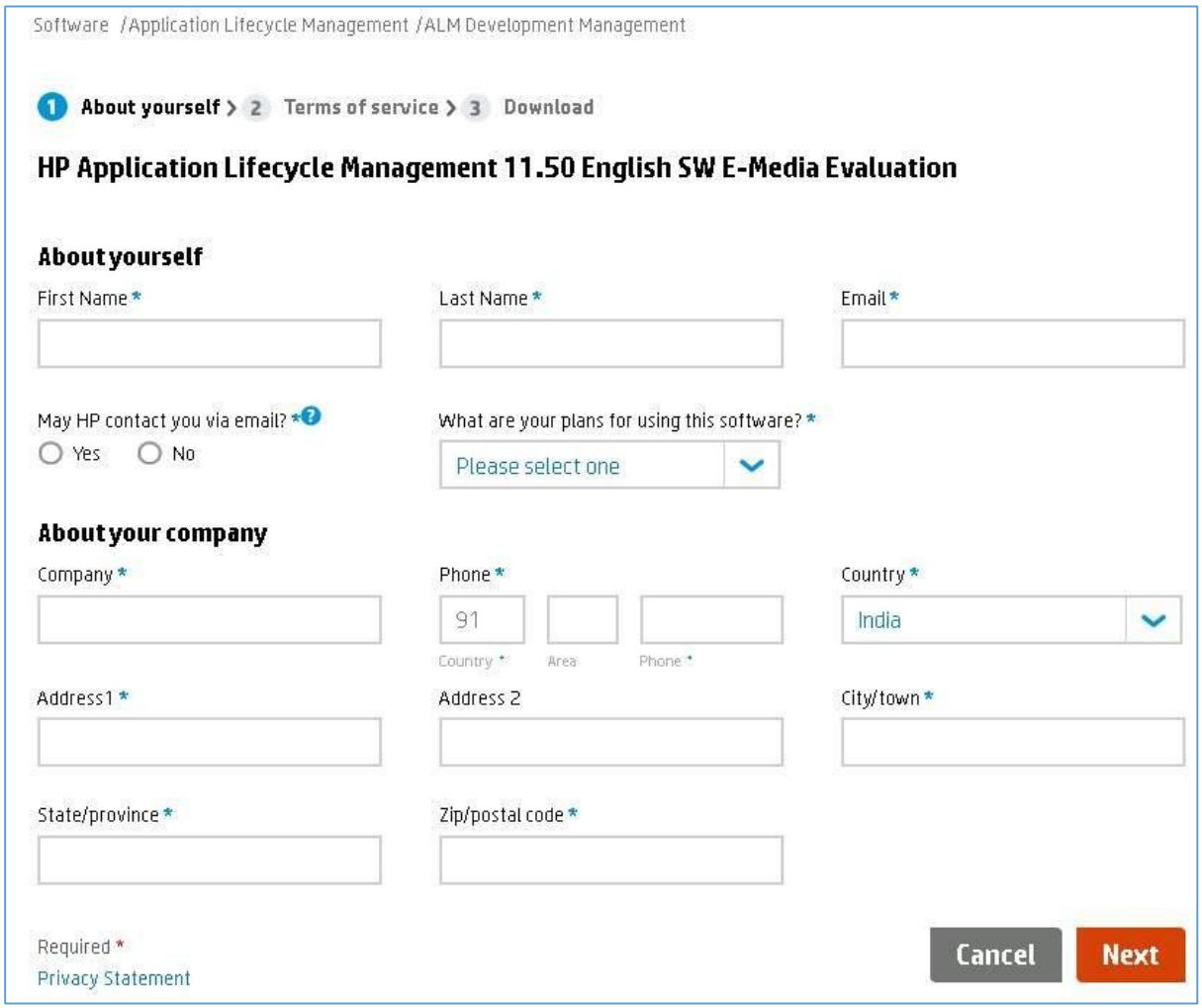
Step 3 : Fill in all the necessary details and click on "NEXT" as shown below:



Step 4 : Accept the Software terms and click on "NEXT" as shown below

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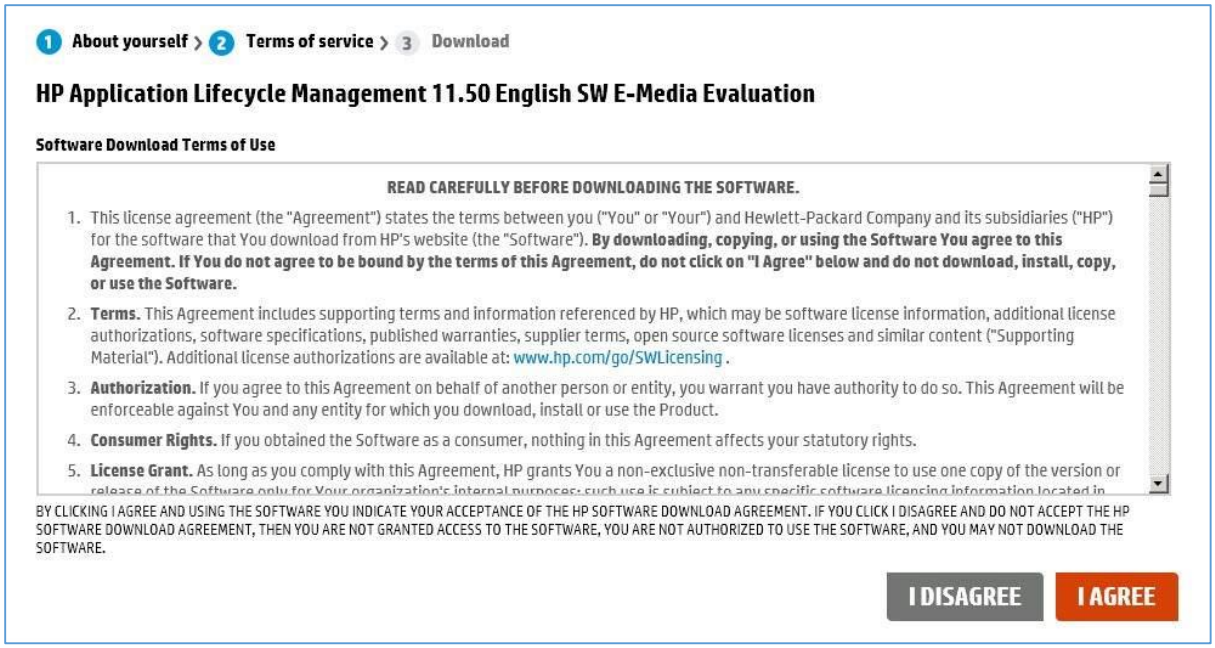
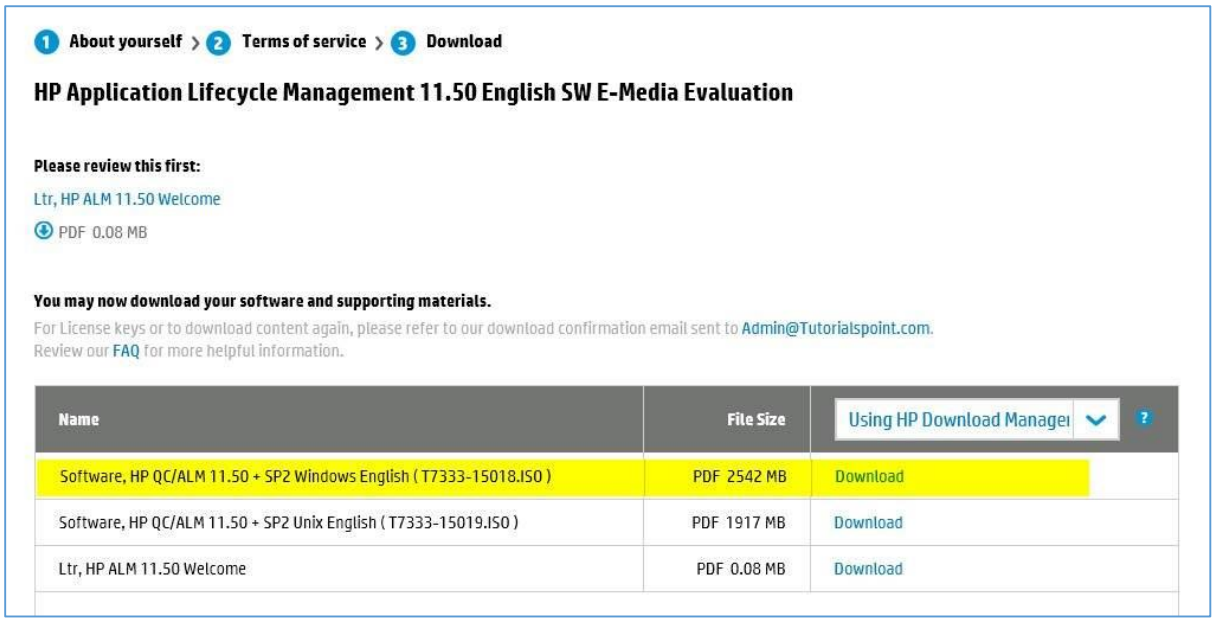


Step 5 : Download link appears and select the appropriate edition you want to install (windows/Unix)



Installing HP-ALM

Step 1 : After downloading the ISO file, unzip the contents and after unzipping, the folder structure would be as shown below:

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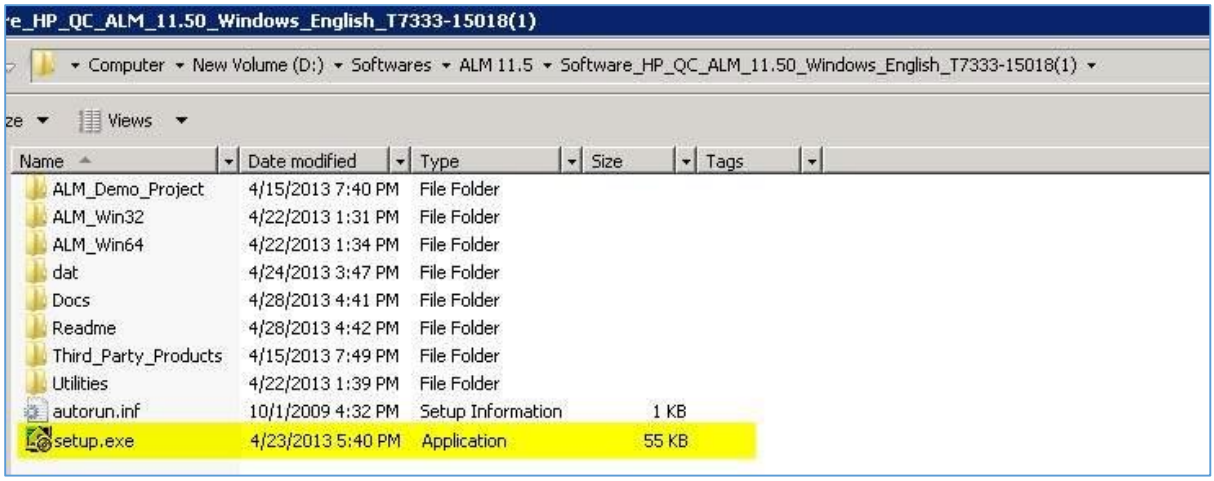

Step 2 : After the Welcome screen opens up, click the "NEXT" button as shown below. Continue to click the Next button until you reach the Finish screen.

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Step 3 : Upon finishing, the HP ALM Platform Configuration Wizard opens as shown below.

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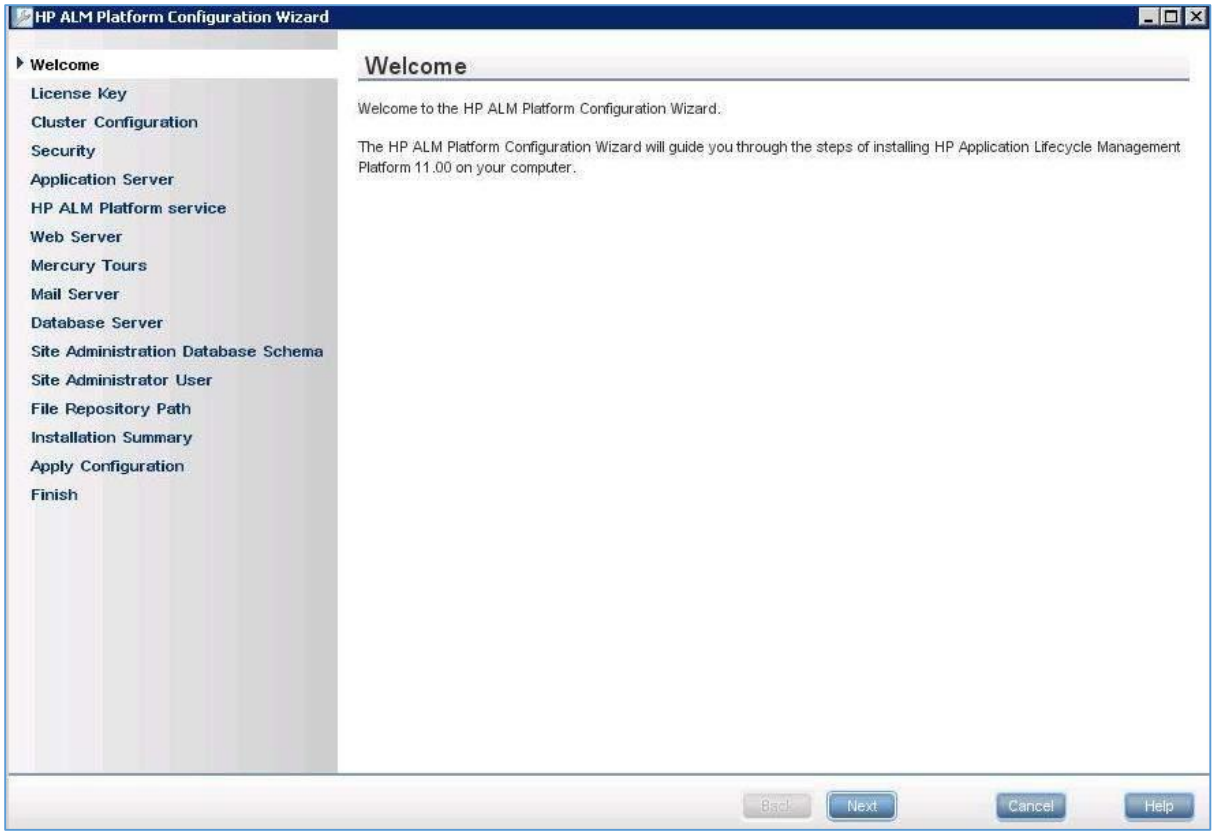

Step 4 : License Key Tab opens and the user needs to select "Application Life Cycle Management" so that we can access all the features of the package.

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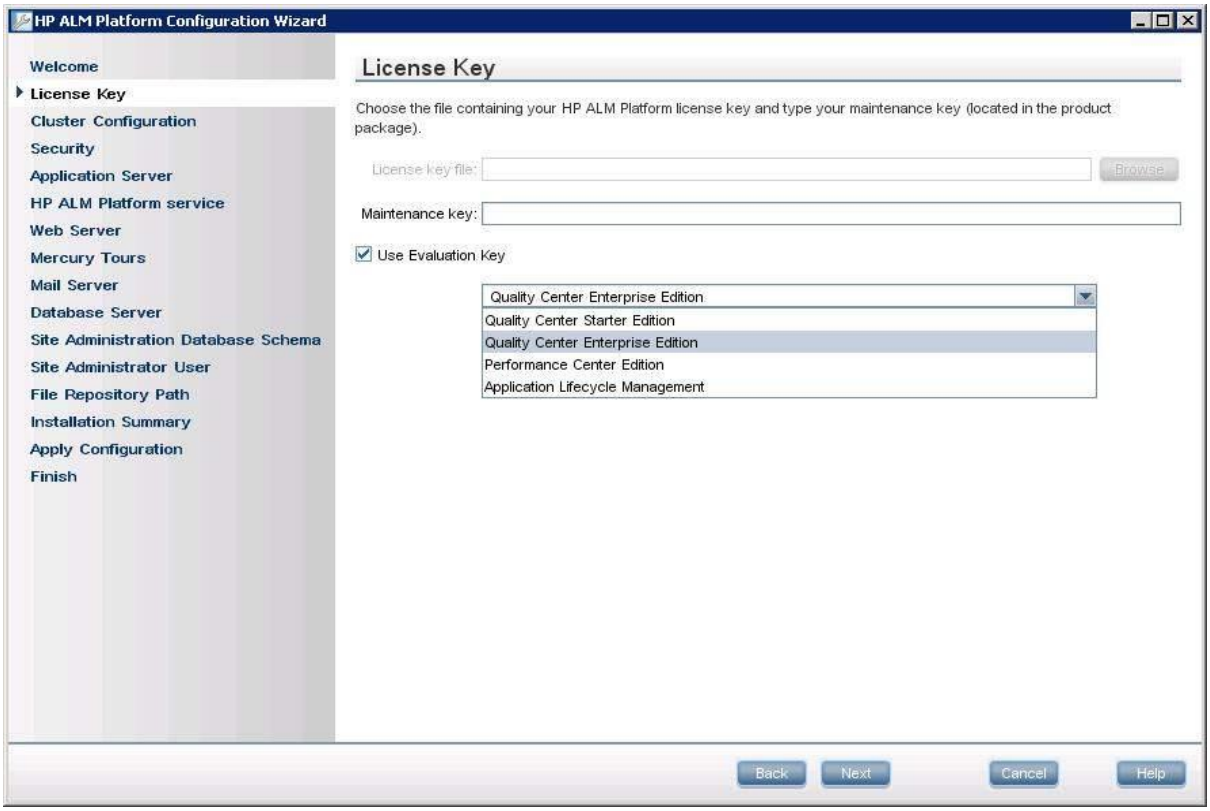

Step 5 : Cluster Configuration Tab opens and choose Standalone, as we will install all services in a standalone host and NOT as a distributed system.

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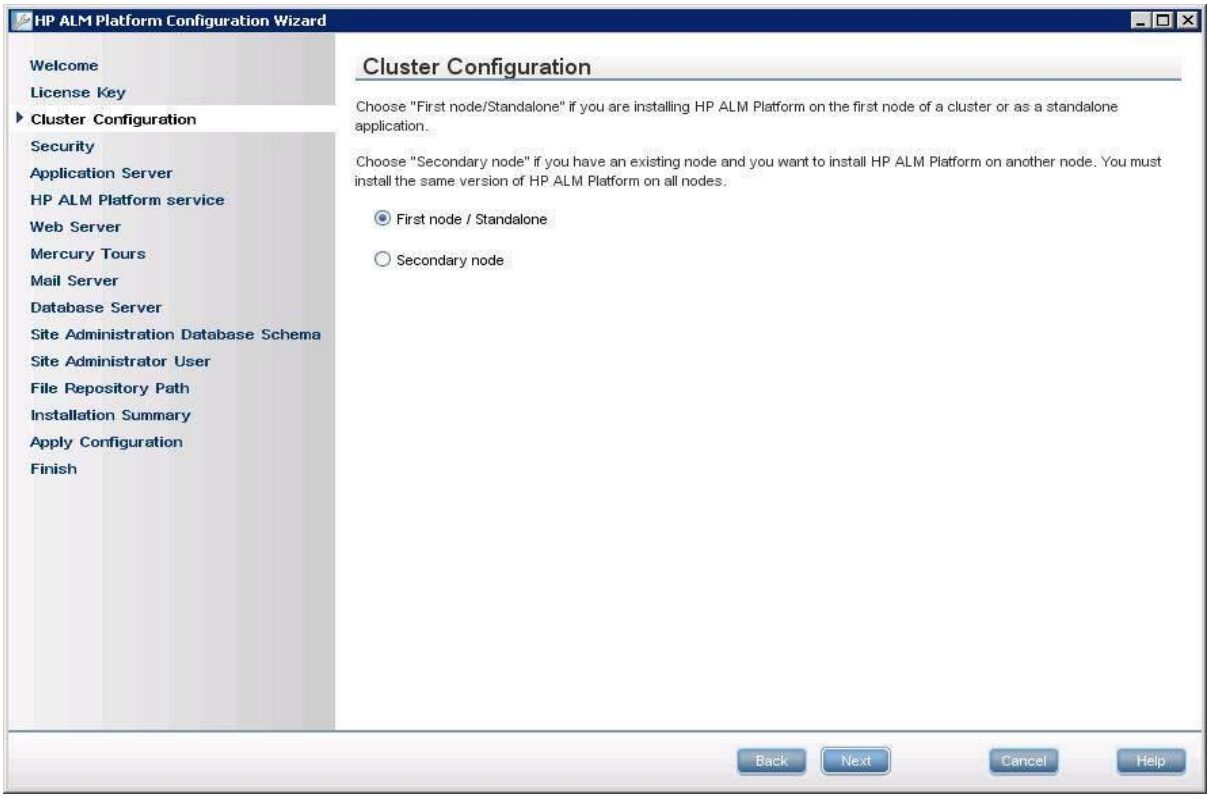
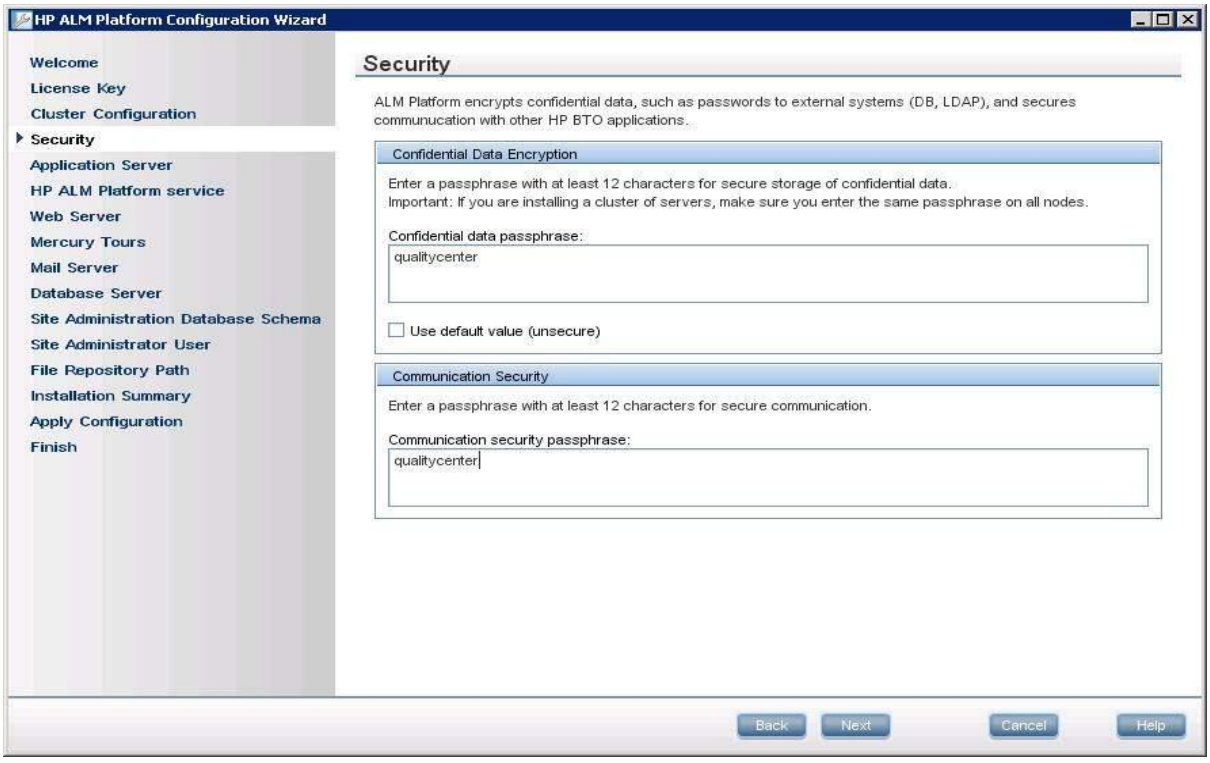


Step 6 : Security Tab opens. Here you need to key-in the passphrase such that there is a minimum of 12 characters.



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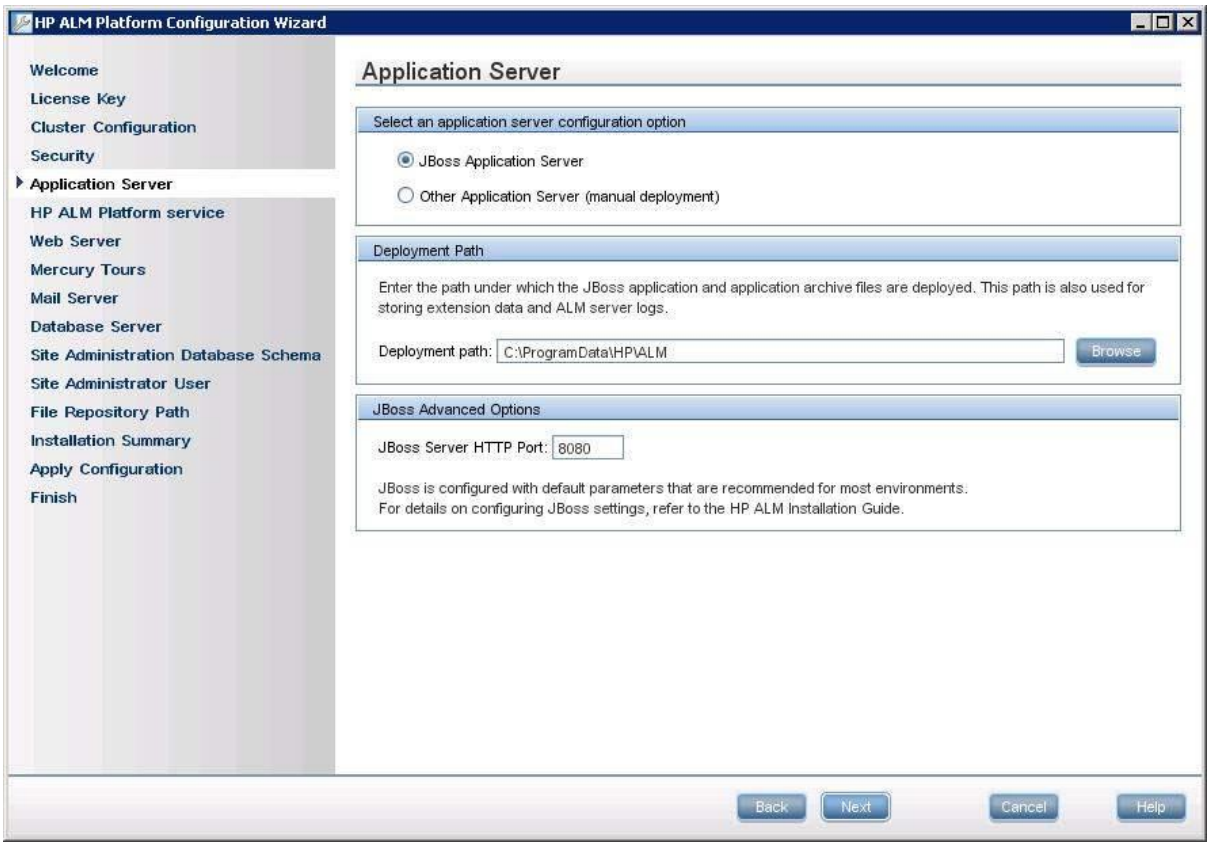
Step 7 : Application Server Tab opens. Choose "Jboss Application Server" and allow all others as default values.



Step 8 : HP ALM Platform Service tab opens. Leave it empty so that your Windows login is used as the userid for starting the ALM Services.

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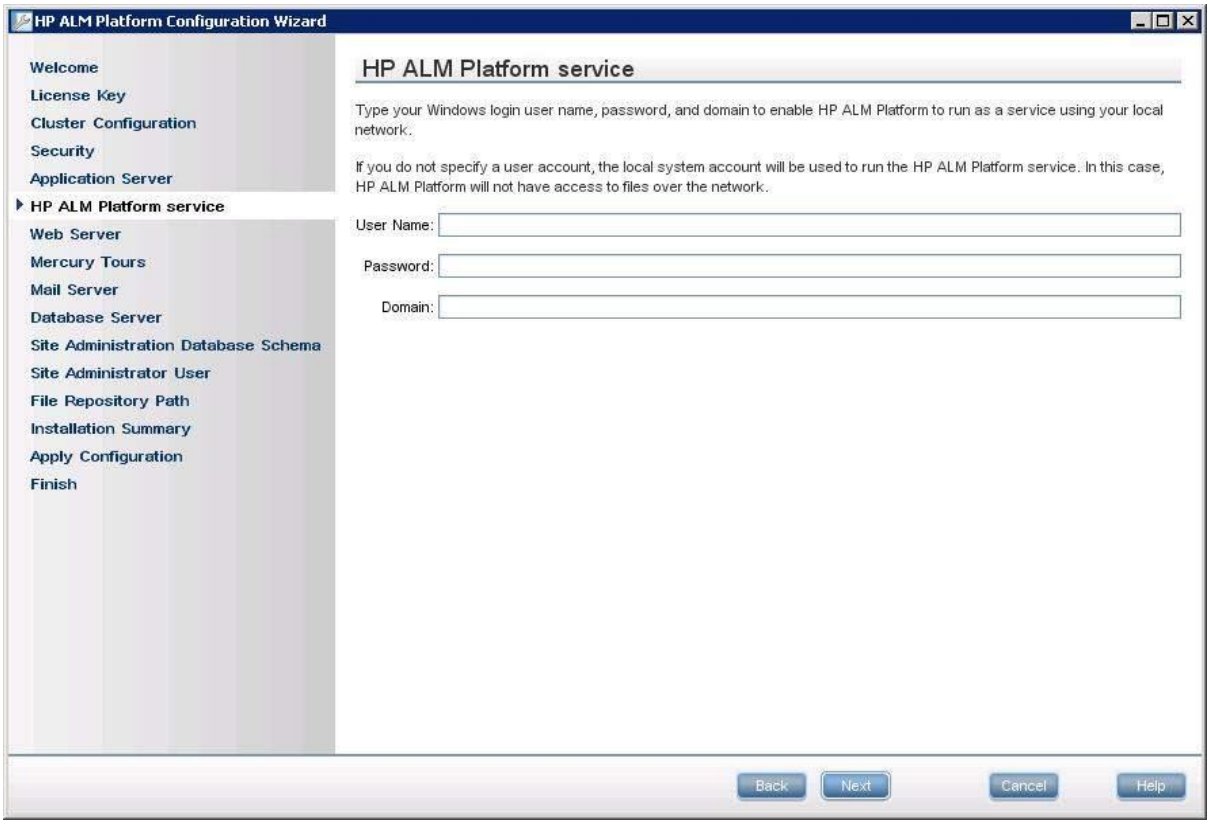

Step 9 : Web Server selection window opens. We will use JBOSS as the Webserver. Hence we need NOT select anything but just click on the "NEXT" button.

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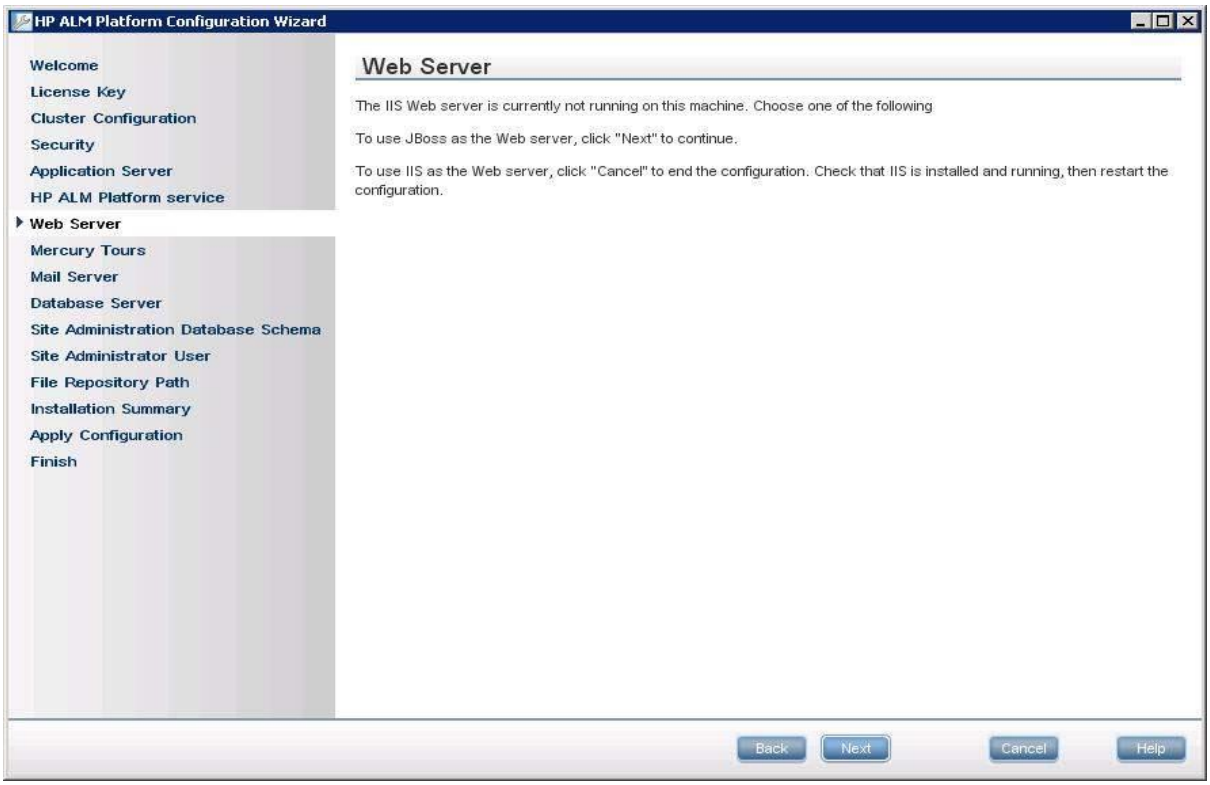

Step 10 : If you would like to install the sample application "Mercury Tours", please select and click "NEXT".

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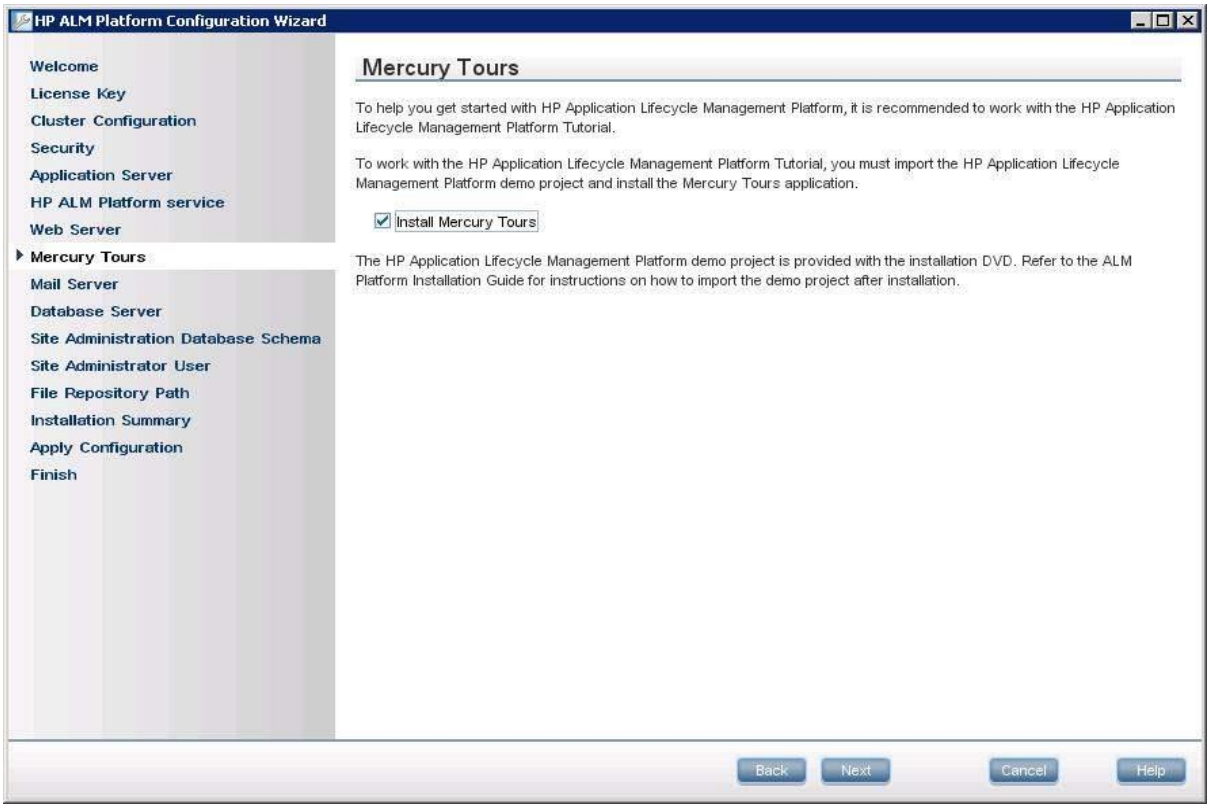

Step 11 : For Mail Server Configuration, add your SMTP or MS IIS SMTP server name or Select None and Click "NEXT". This server setting will enable you to interact with other QC users via Email or it triggers an email based on the settings.

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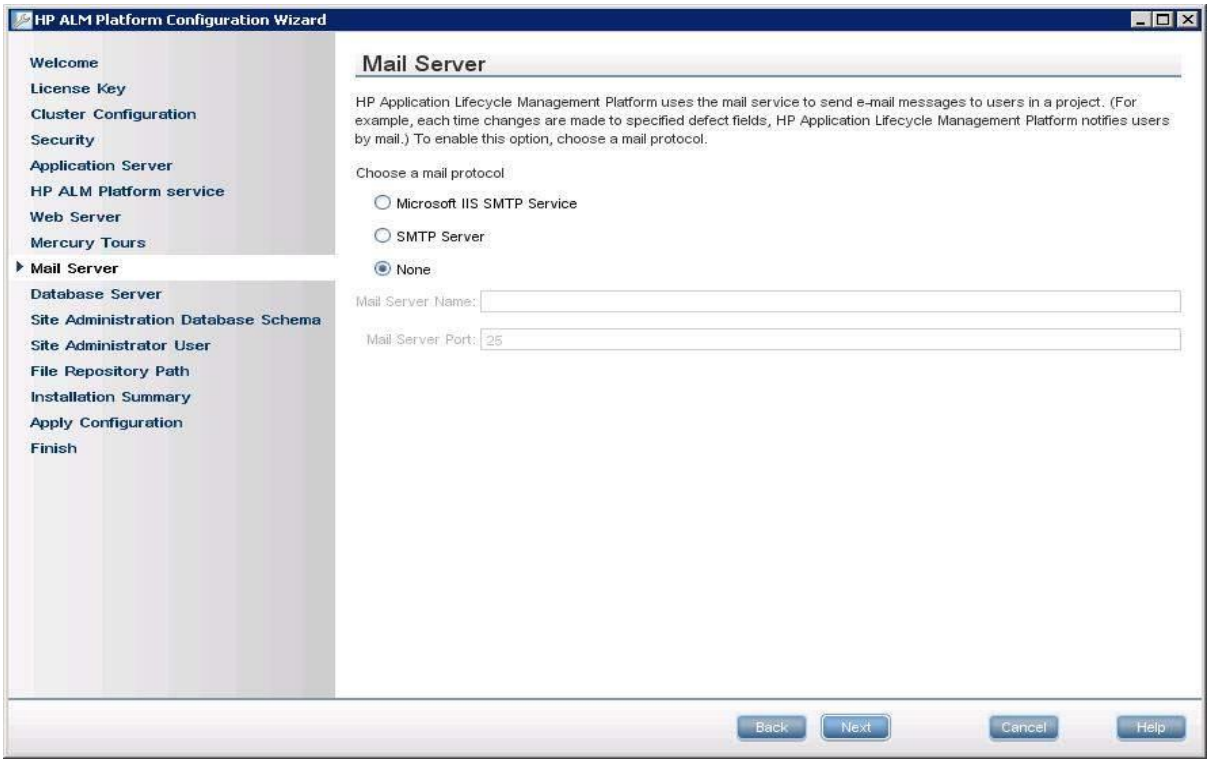

Step 12 : Choose the correct database Server Configuration. Please note that the database corresponds to the one that is already installed on the server. The user credentials should have privileges to create Database on the server. Only if all the field values are correct, it moves on to the next screen.

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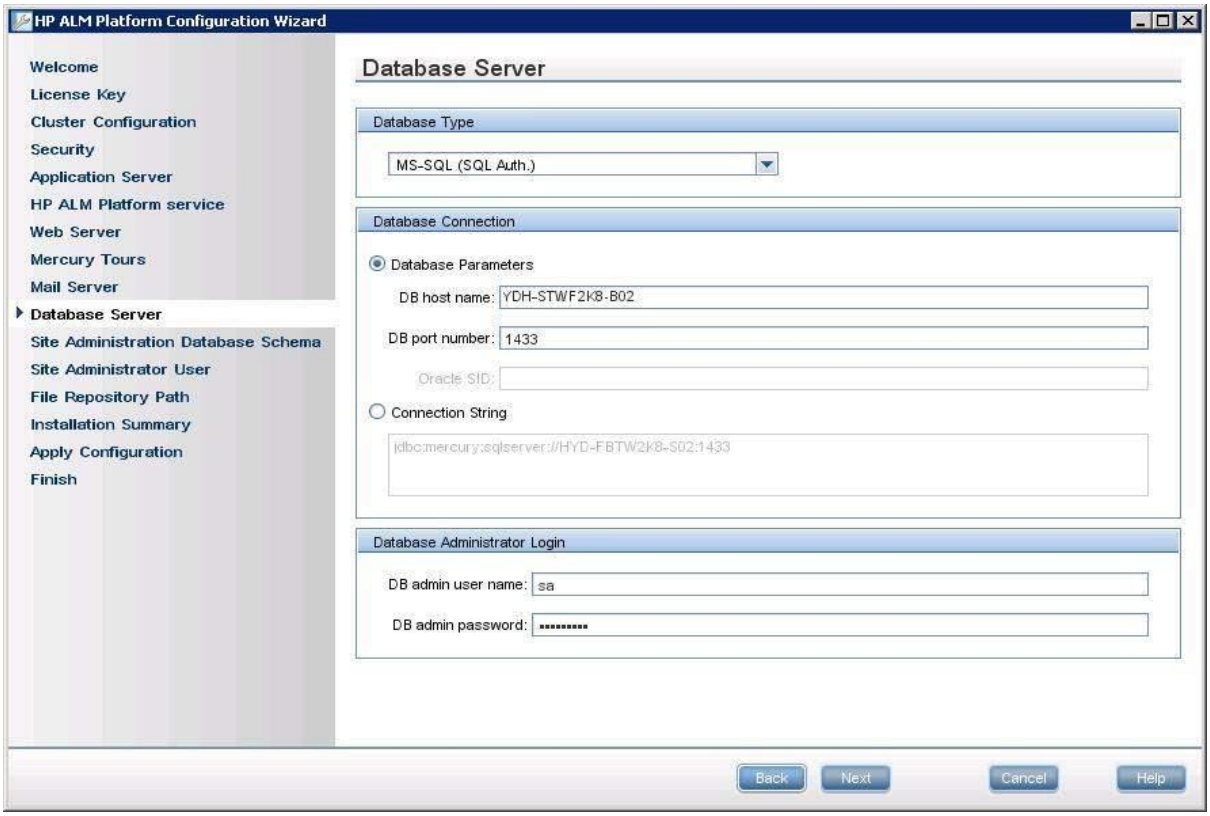
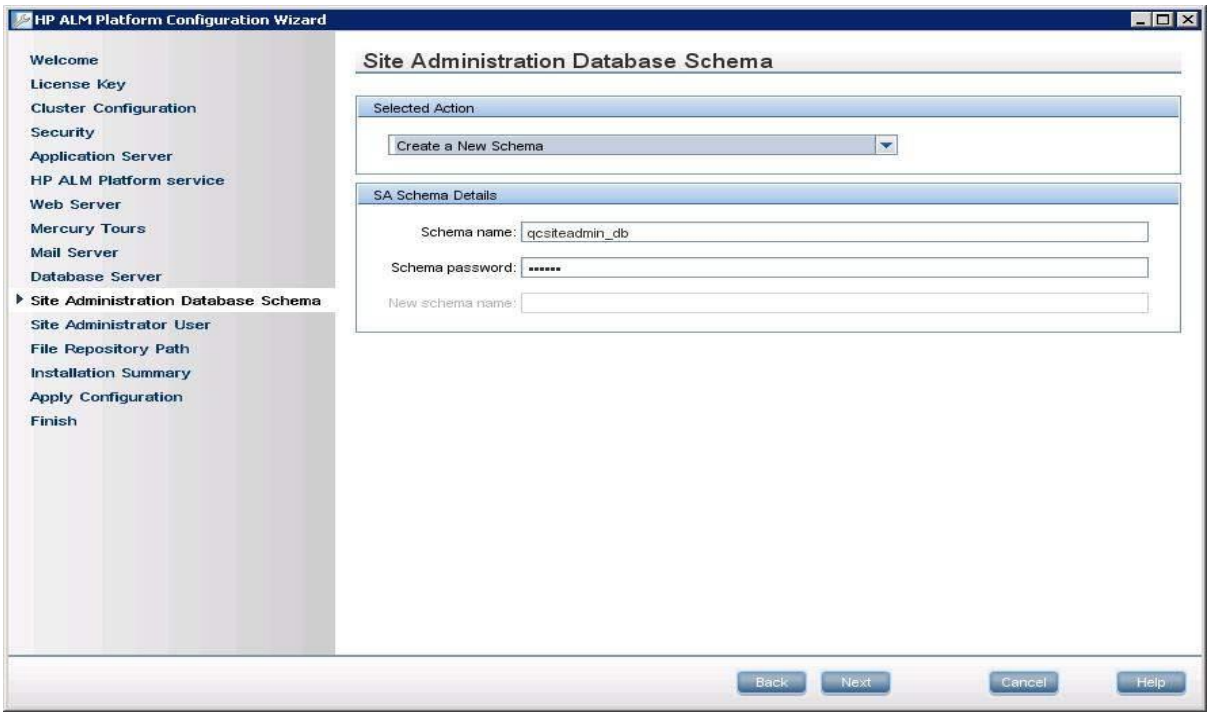


Step 13 : The Site Administration Database Schema configuration window Opens. Ensure that you give a unique DB Schema name where all the Admin data of QC will be stored.



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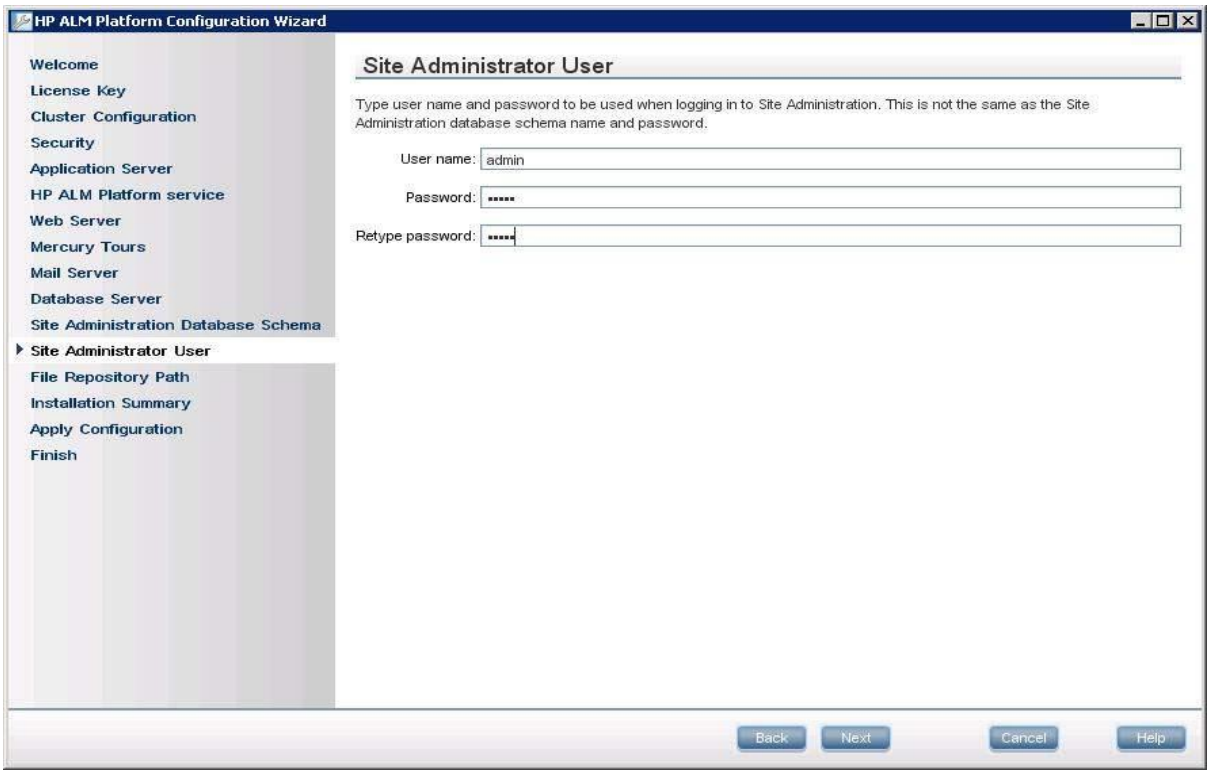
Step 14 : Enter the Site Administrator user credentials. Do NOT forget to remember these credentials so that you can log into QC using these credentials after successful installation.



Step 15 : File Repository Path is the location where all the QC related assets which we create would be saved.

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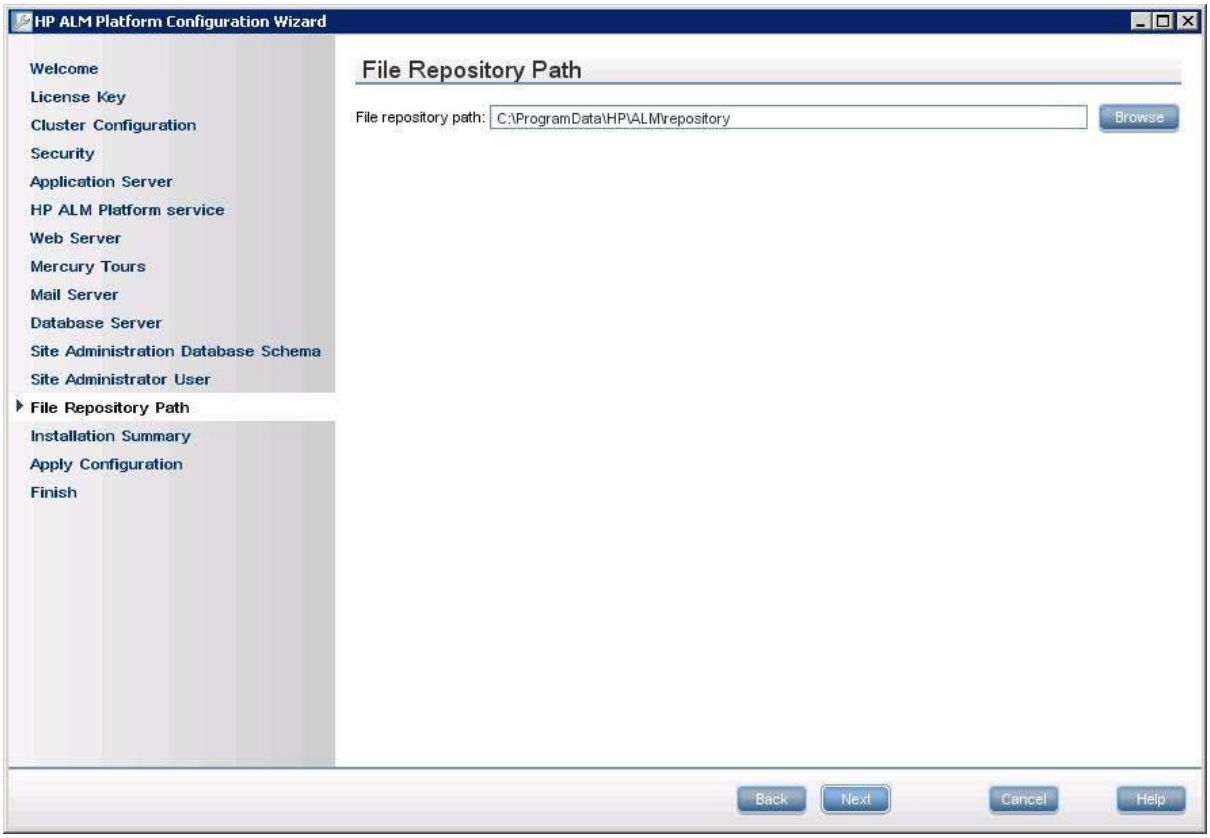

Step 16 : The Installation Summary Window opens up which shows the complete summary of the selected configuration. If the user wishes to make any changes, then he can do so by going back to the previous window.

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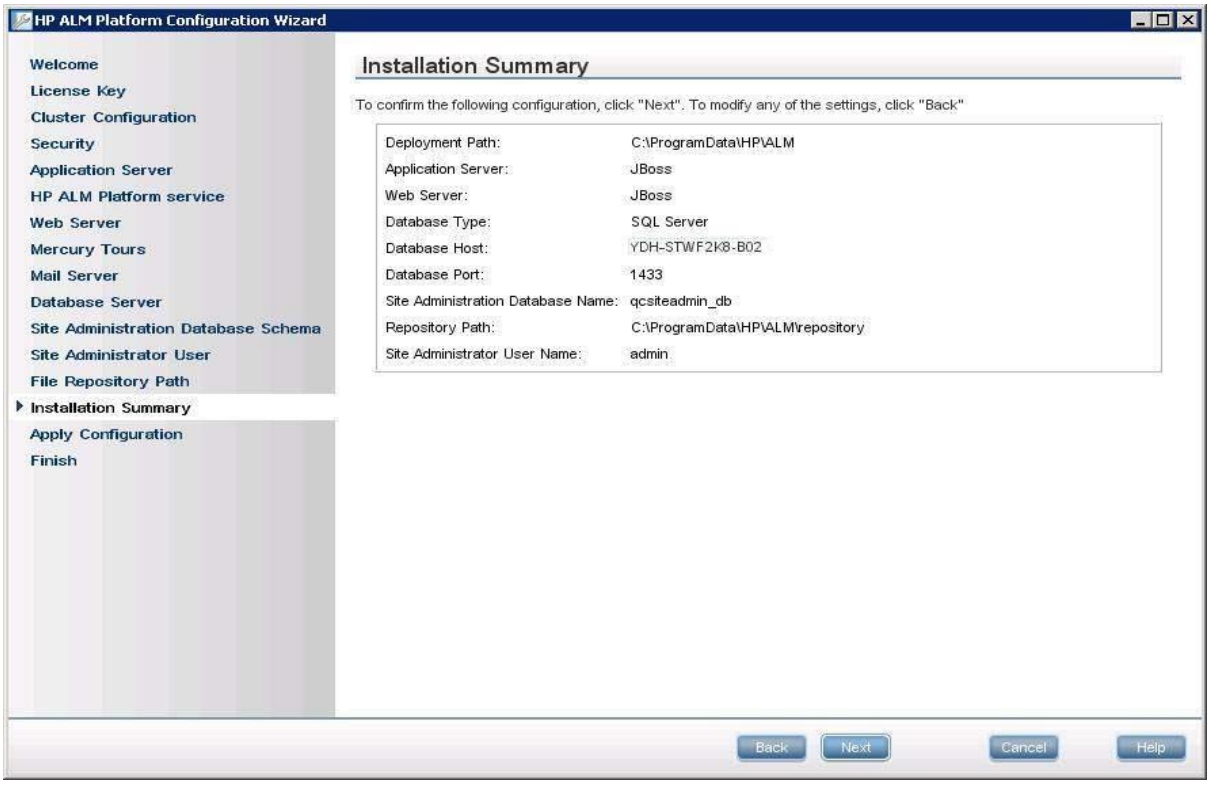

Step 17 : Apply Configuration shows that the selected components will be installed with the selected configuration. Upon Completion the message is thrown to the user if the installation is successful.

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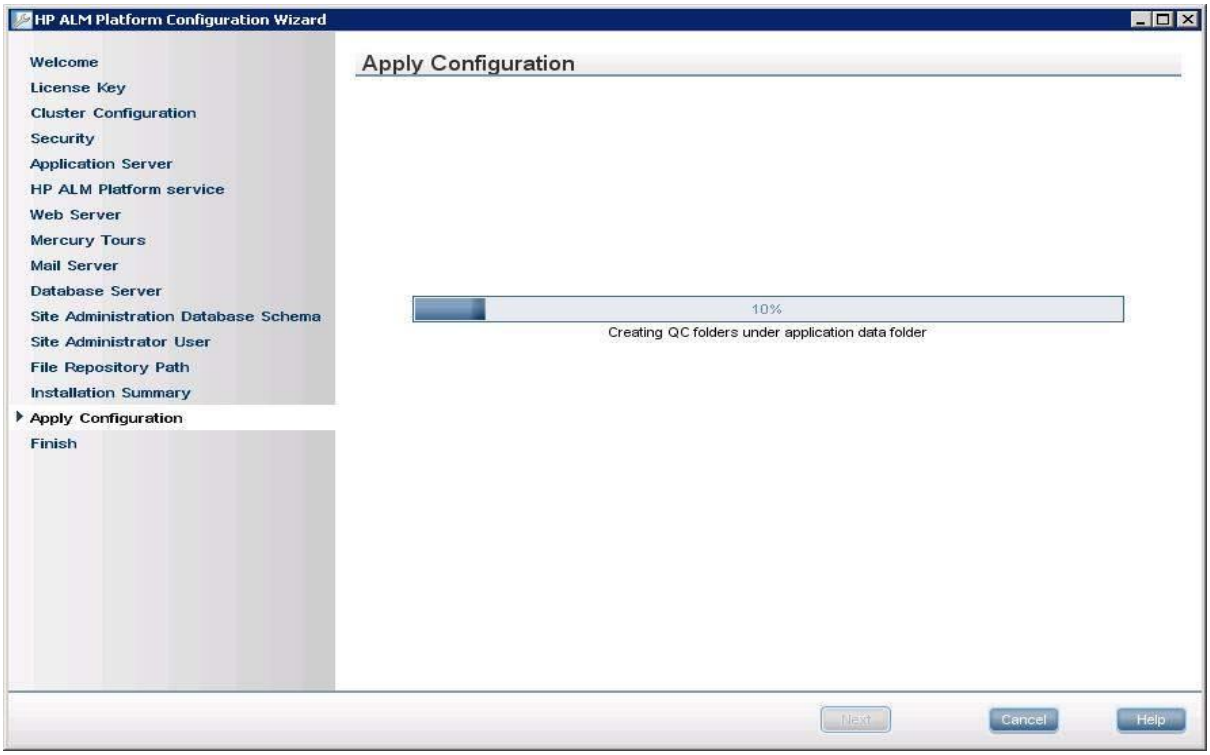

Launching HP-ALM

Step 1 : Upon installing HP-ALM successfully, the ALM can be launched from the Start menu as shown below.

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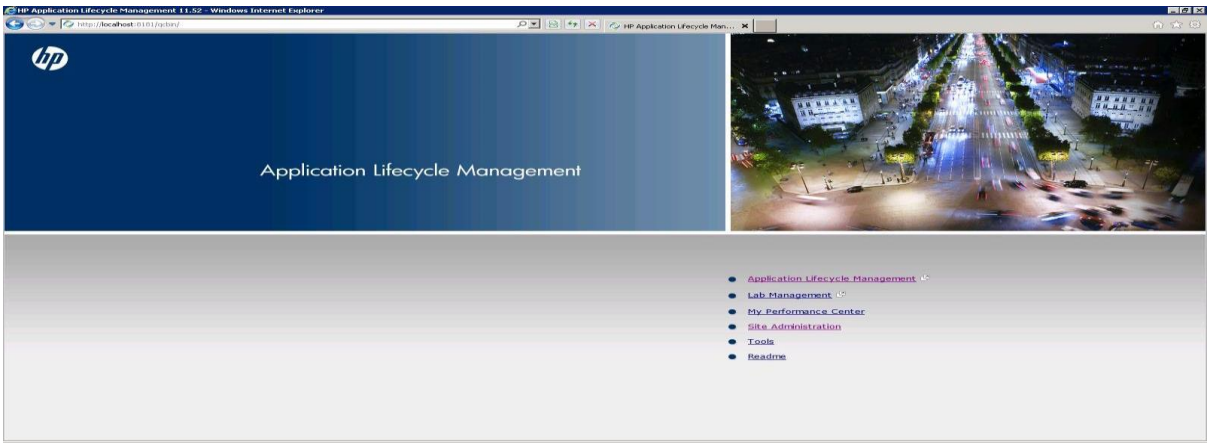
Step 2 : After installation, we can also launch ALM by typing the following URL in Internet Explorer: http://localhost:8181/qcbin/

ALM would open as shown below.



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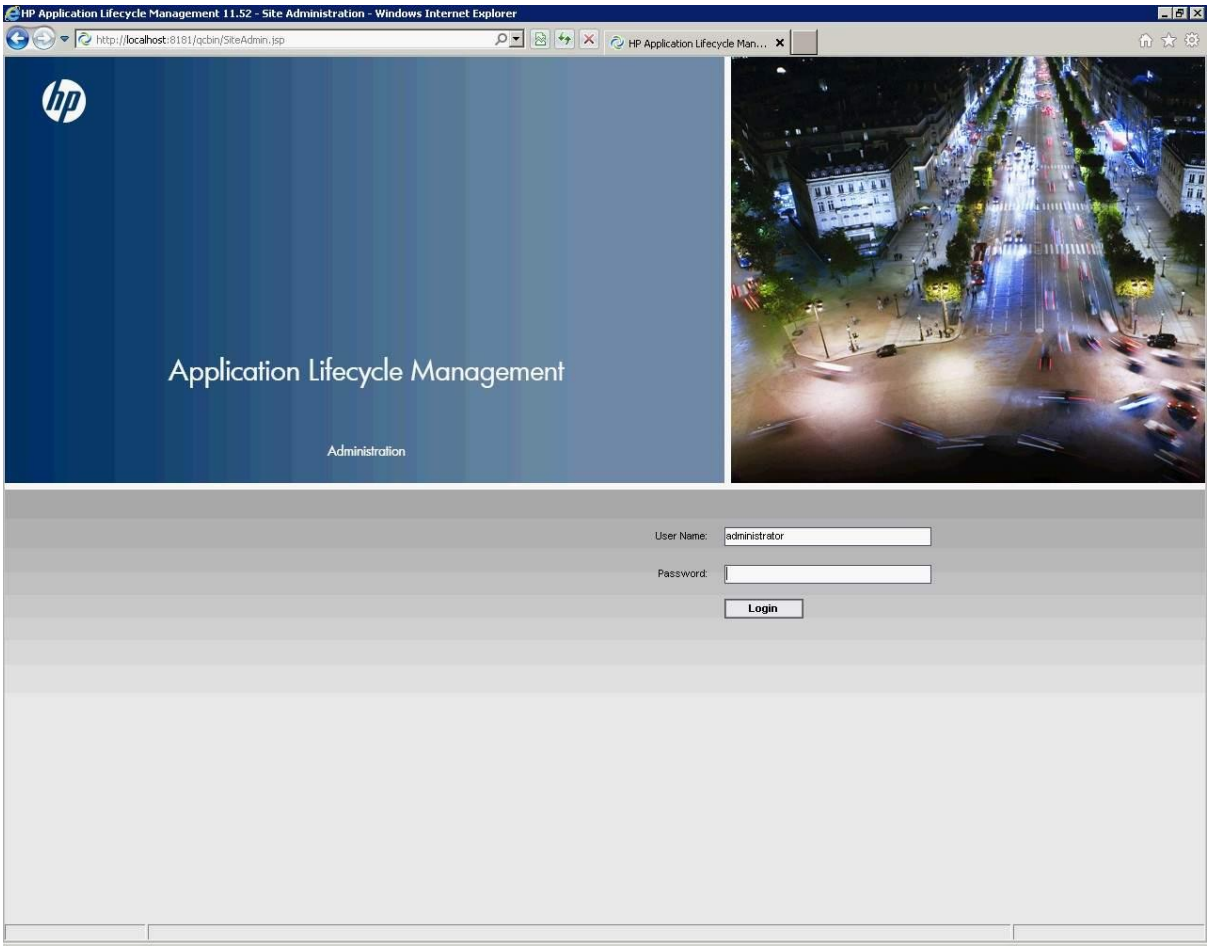
3. HP QC – SERVER-SIDE CONFIGURATIONS

Once the HP-ALM is installed, we can continue to work with ALM only after creating domain, project, and users. In this chapter, we will discuss how to create Project, Domain and Users.

Creating Domain

Step 1 : For creating a Domain, the first step is to get into Site Administrator Page. Launch QC using the URL - http://localhost:8181/qcbin/SiteAdmin.jsp and enter the Admin credentials that was set up while installing QC.



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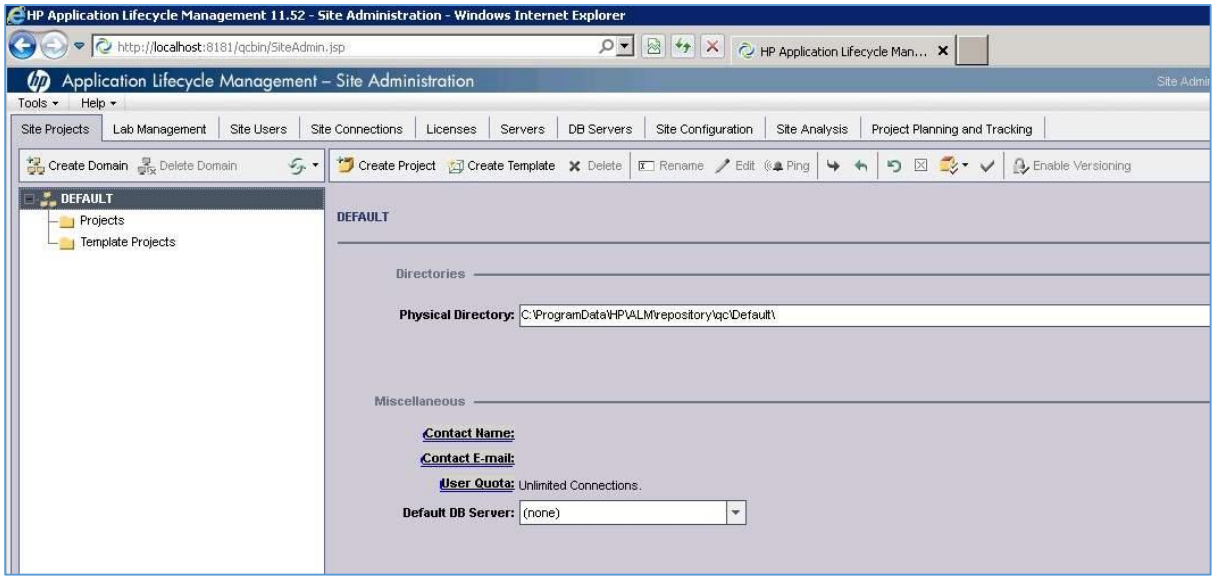
Step 2 : After logging into Site Admin page, we will land in Site Projects Tab as shown below. The next step from there is to create a Domain.



Step 3 : Click the 'Create Domain' button on the top-left corner. Enter Domain Name and click OK.

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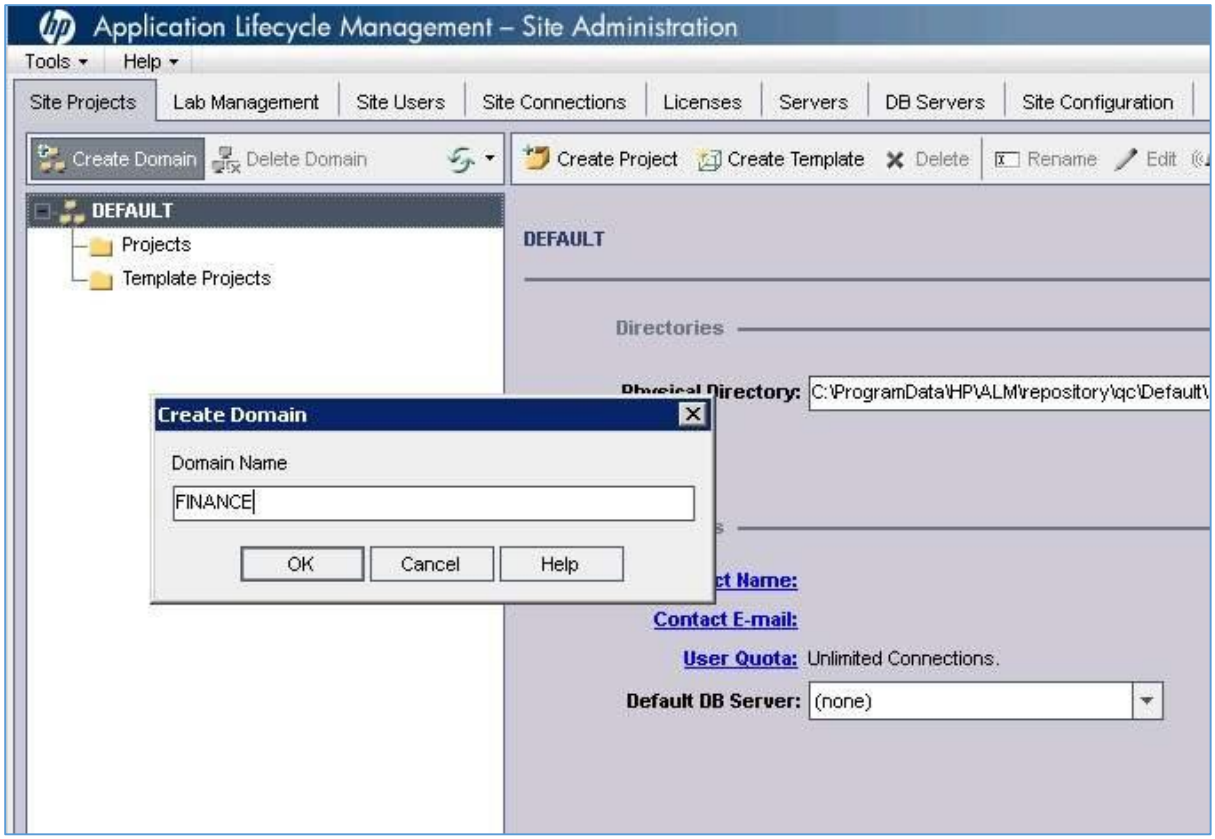

Step 4 : Domain would be created as shown below.

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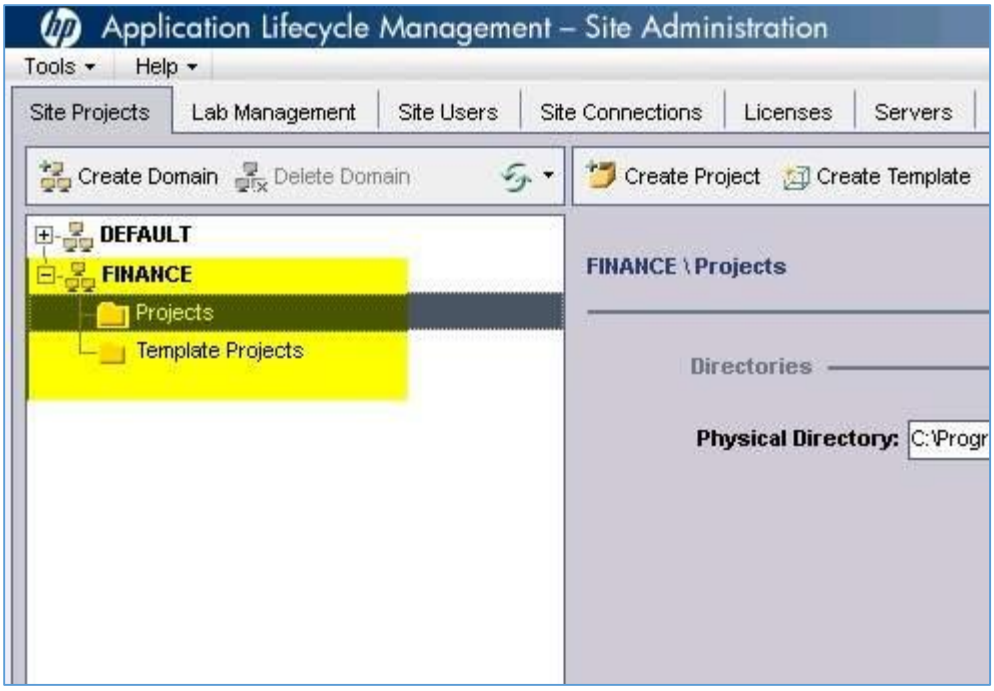
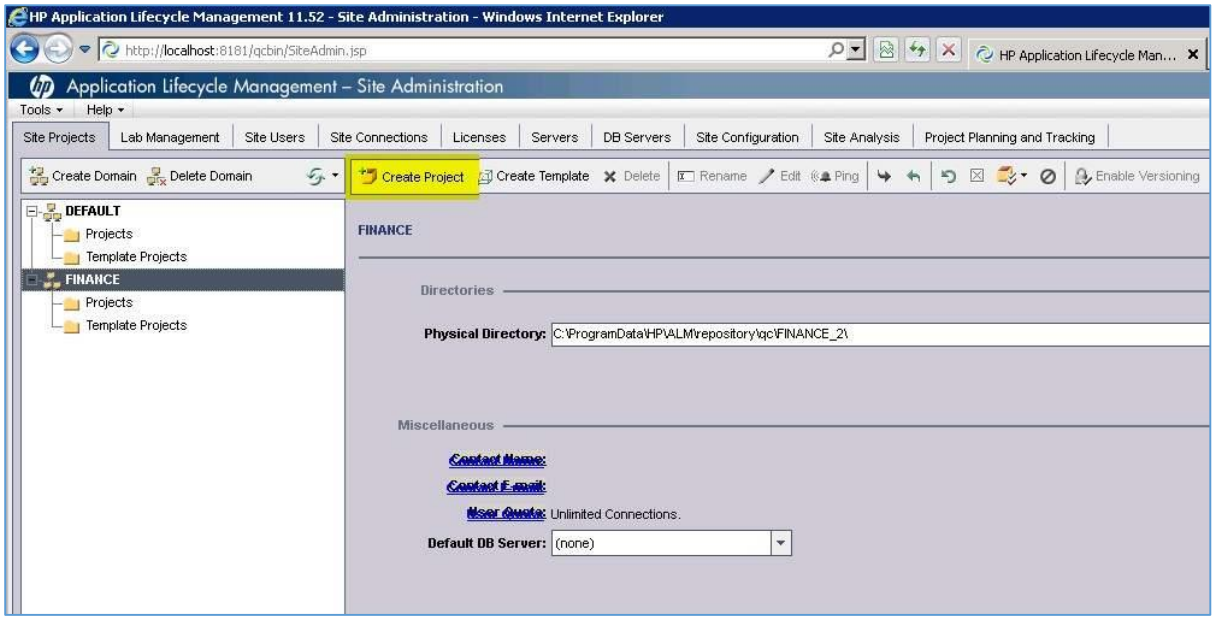


Creating Projects

Once a Domain is created, the next step is to create 'Projects'. Creating a Project takes us through a wizard and one should follow the steps given below to create 'Projects'

Step 1 : Select the Domain under which the project needs to be created and then click the "Create Projects" button as shown below.



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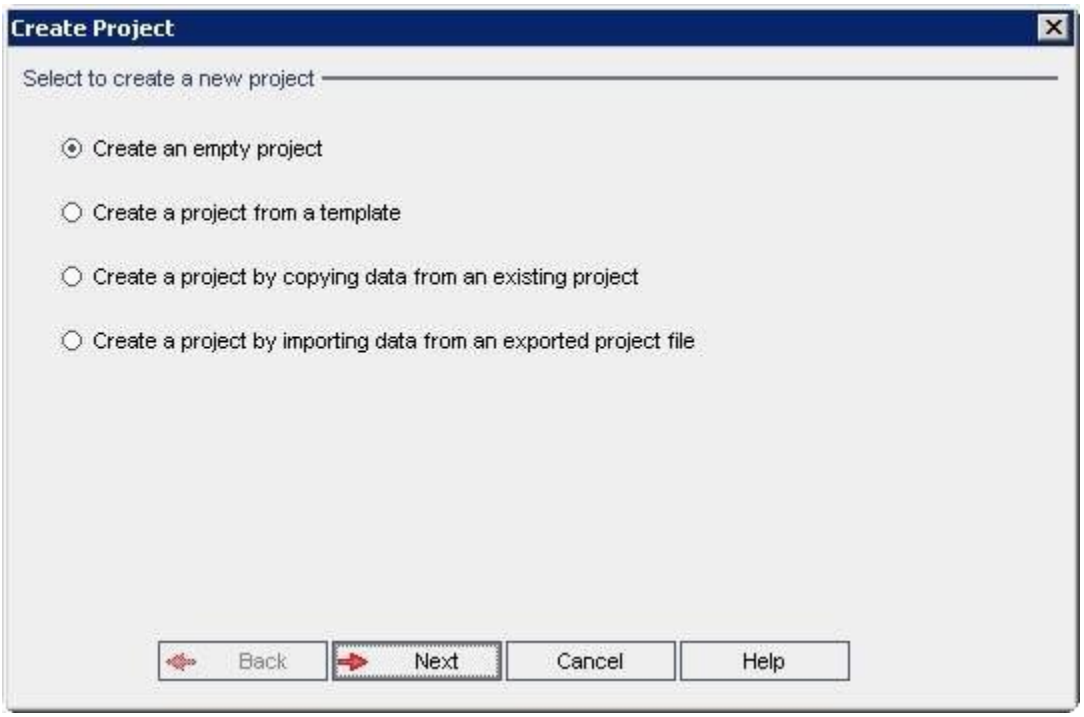
Step 2 : The Create Project Wizard opens. Select "Create an Empty Project" and click "Next".



Step 3 : Enter the "Project Name" and select Domain and click "Next".

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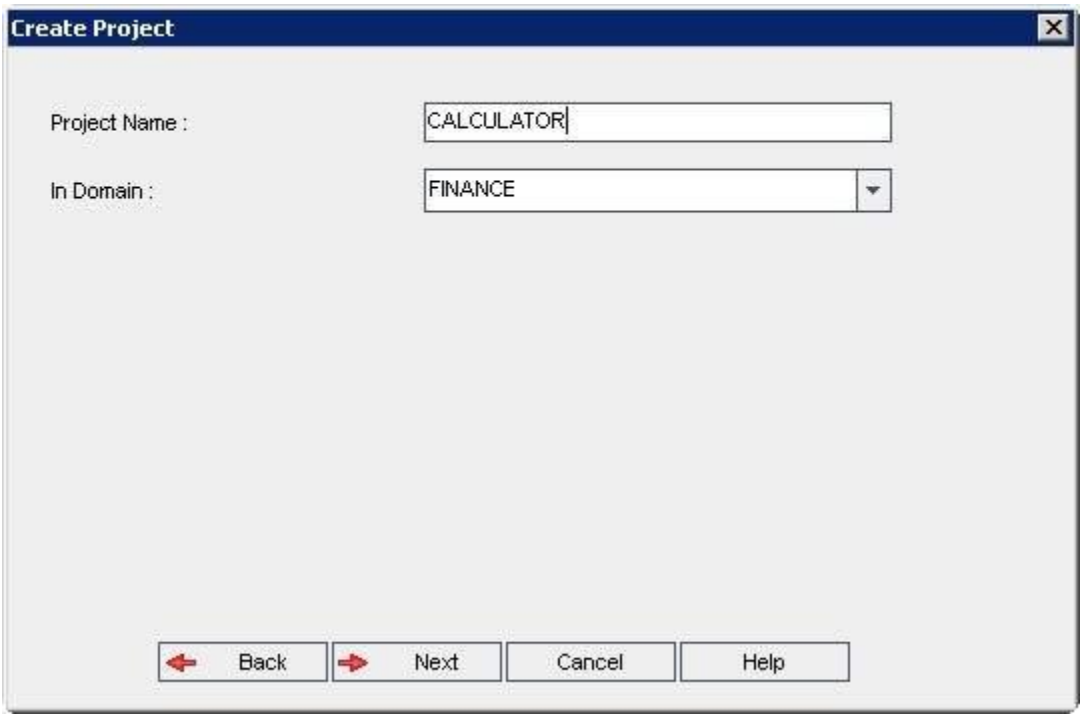

Step 4 : Enter the Database credentials and click "NEXT".

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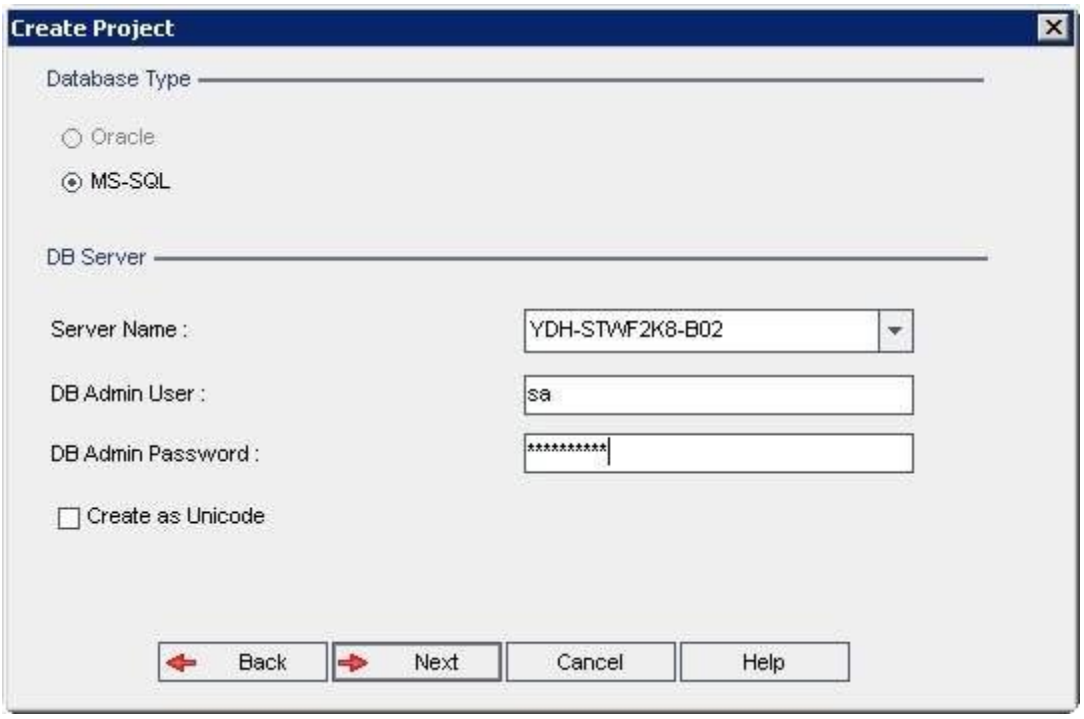
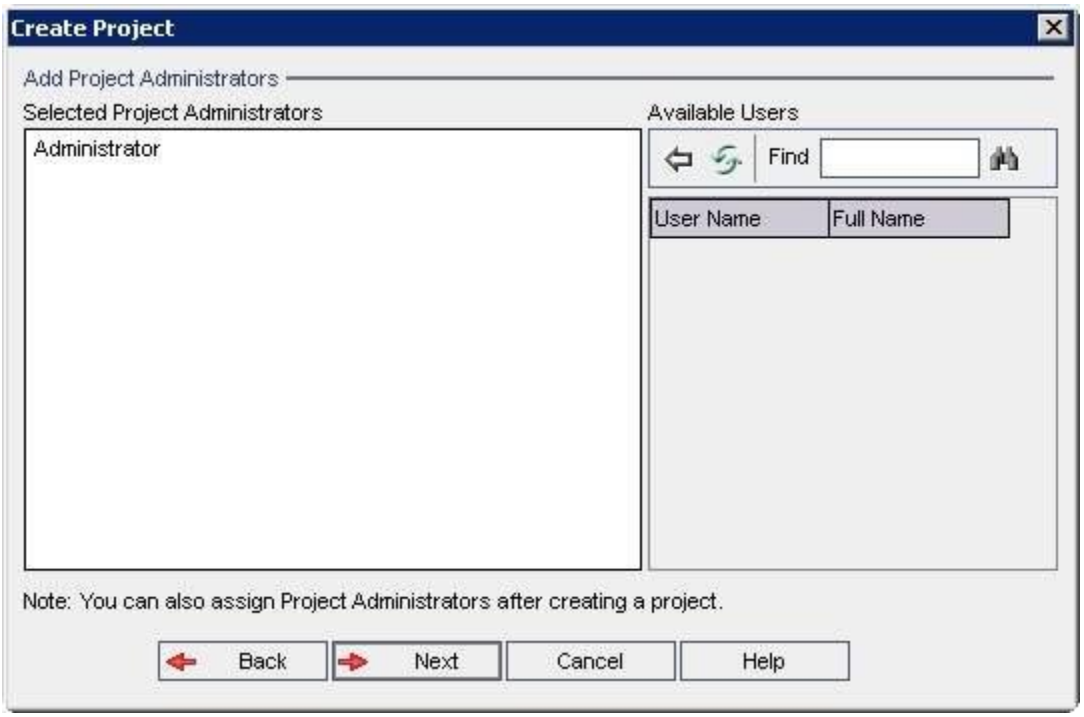


Step 5 : Select the Project Administrator user ID and click "NEXT".



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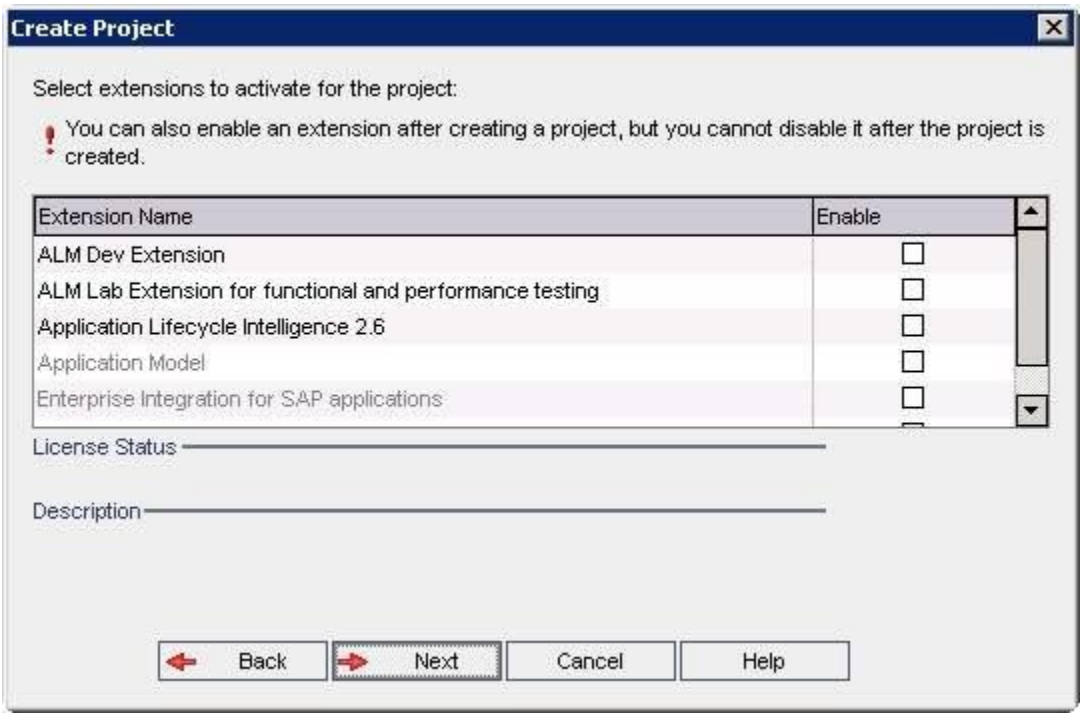
Step 6 : Select the extensions to activate the project and click "NEXT".



Step 7 : Check the Activate checkbox and enable Version controlling (if you want) and click "NEXT".

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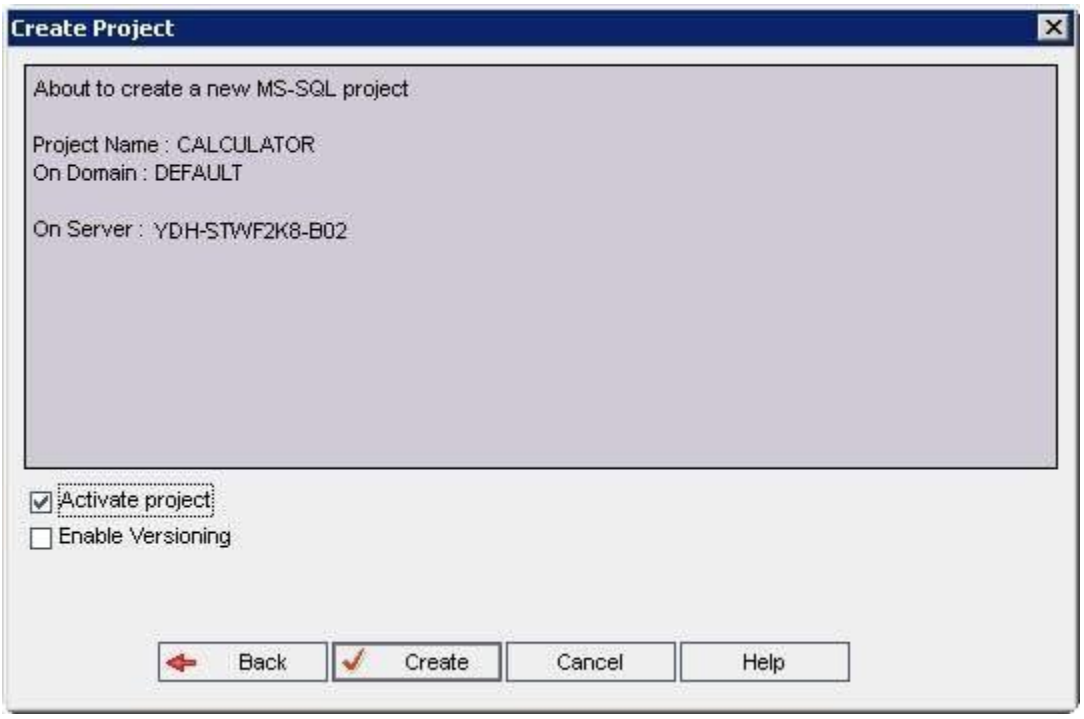
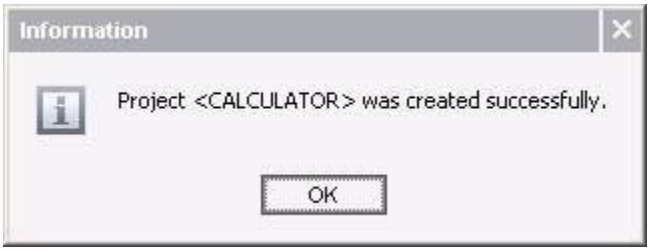


Step 8 : Upon clicking "Next", the project "Calculator" is created successfully. Click "OK" to see the created project in the Project Pane.



Creating Users

Step 1 : Select the Site Users Tab in "Site Admin" Page as shown below and click the "Add New User" button.

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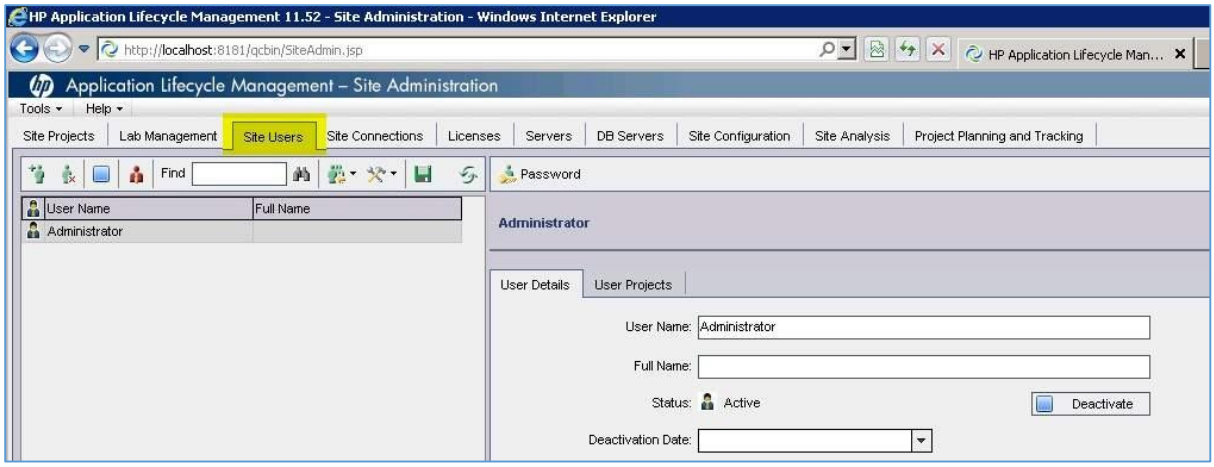
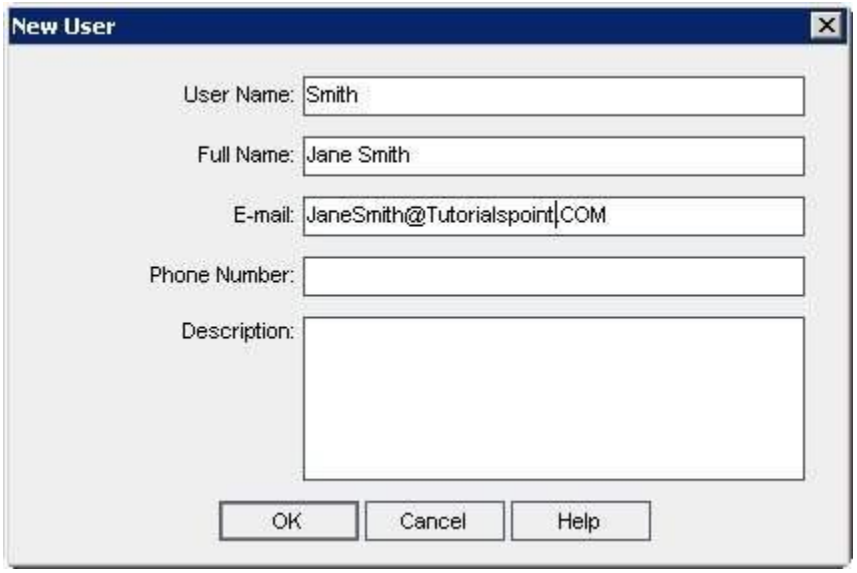
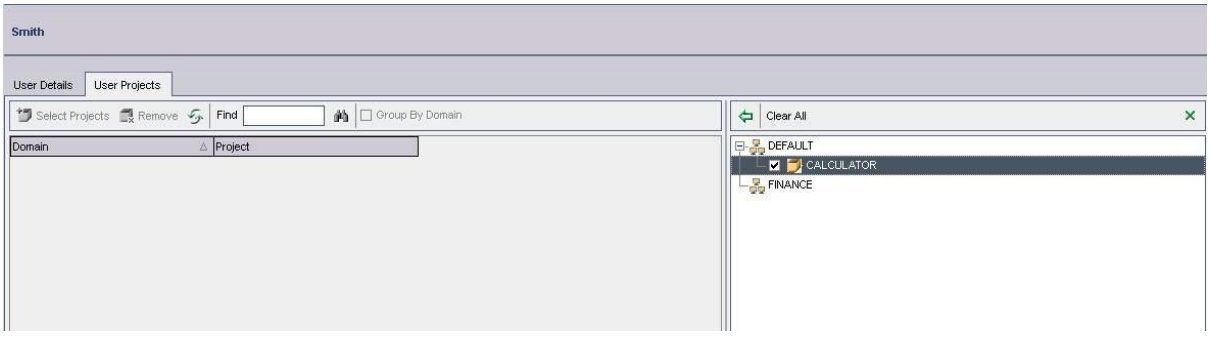


Step 2 : The New User window opens up. Fill the user details and click "OK".



Step 3 : After Creating the user, give the user the project access that they need.



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Step 4 : Verify the user list in "Project Users" Tab after giving the user the access to the project.

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4. QUALITY CENTER – COMMON FUNCTIONALITIES

Commonly Used Functionalities

HP Application Lifecycle Management (ALM) displays data in infragistics grid view or in a tree structure and users can manipulate the data in various ways, such as rearranging columns, filtering, sorting, and grouping.

One can also attach files to those grid records, search for specific text in records, and view history of various entities. The following features are to be understood to ensure that users are able to work with Quality Center seamlessly.

Click on each one of these links to know more about the common functionalities.

Common Functionality	Description
Filter Dialog Box	Enables user to perform filter ALM data based on defined criteria.
Users Dialog Box	Enables users to choose a user name from the list of users.
Find Dialog Box	Enables users to search for a particular record in a tree view or grid view
Replace Dialog Box	Enables user to find and replace a specific field value in a tree or grid.
History Tab	Enables user to view a list of changes made to the currently selected work item.
Send Email Dialog	Enables quality center users to send an email about the details of an entity to other users.

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Attachments Dialog	Enables users to add and manage attachments to a specific record.
Snapshot Dialog	Enables users to capture and attach screenshot of your application under test to an entity in ALM.
Column chooser Dialog	Allows users to select the columns that they wish to see in the grid view.
Set Defaults Dialog	Enables users to set default values for certain fields in ALM.
Alerts and Flags Dialog	Enables users to view a list of alerts for a selected record and also allows them to create, view, and modify a follow up flag to remind themselves to follow up on an issue
Favorites Dialog	Allows user to create and organize favorites.

HP QC Filter

Filter functionality in ALM helps users to view a specific data based on certain criteria. Filters are applicable across all modules viz. Requirements, Test Plan, Test Lab and Defects.

Let us understand how it works in Requirements module. Users can specify one or more criteria in the Filter dialog box.

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