HPALM - Hewlett Packard Application Lifecycle Management

- HPALM is tool used for Project management and Defect management.
- Before HPALM its name was HPQC (HP Quality Center) and Before that MQC (Mercury Quality Center)
- Now becomes Micro Focus ALM

Features of HPALM:

- ***Reports management***: used to generate graphs and reports which keeps a track of project.
- ***Requirements management***: used to check test-cases covers all the requirements or not.
- **Release Management**: used to create releases and cycles.
- Used to *write test-cases* and *execute test-cases*.
- Used to *log the defects* and link failed test-cases to the defects.
- Used to *create traceability matrix*.

Components of HPALM:

There are five components of HPALM v12.0

1. Dashboard
2. Management
   a. Releases
   b. Libraries
3. Requirements
   a. Requirements
   b. Business Model
4. Testing
   a. Test Resources
   b. Test Plan
   c. Test Lab
5. Defects

How to Create Releases and Cycles in HPALM

Features want to test:
1. New user registration
2. Login – with correct credentials
3. Login – Incorrect credential handling
4. Forgot password

For example: From the above-listed features if you need feature 1 and 2 to go live on 30th May 2013 and the next 2 features on the 30th June 2013. You can name the first one "May release" and the second one "June release".

| Release Name	What is to be tested	Start date	End date	Cycles
May release	Feature 1 Feature 2	01-May-2013	30-May-2013	1. Smoke test (01-may-2013 to 03-May-2013) 2. Sanity Test (04-May-2013 to 10-May-2013) 3. Functional testing (11-May-2013 to 30-May-2013)
June release	Feature 3 Feature 4	01-June-2013	30-June-2013	4. Smoke test (01-June-2013 to 03-June-2013) 5. Sanity Test (04-June-2013 to 10-June-2013) 6. Regression Test for May release features (11-June-2013 to 15-June-2013) 7. Functional testing (16-June-2013 to 30-June-2013)

- Requirements/Features need to be completed within a given span (particular Release span).
- Each release has multiple cycles within it.
- Both Releases and cycles have start and end date.
- Within particular release, cycles may be overlap but outside the release it is not possible.

Steps to create releases and cycles:

1. Login to ALM with username and password, provide domain and project you required.
2. Go to Left-side options select "Management->Releases"
3. *Create Release Folder*: right click on root folder named "Releases" and choose "New Release Folder".
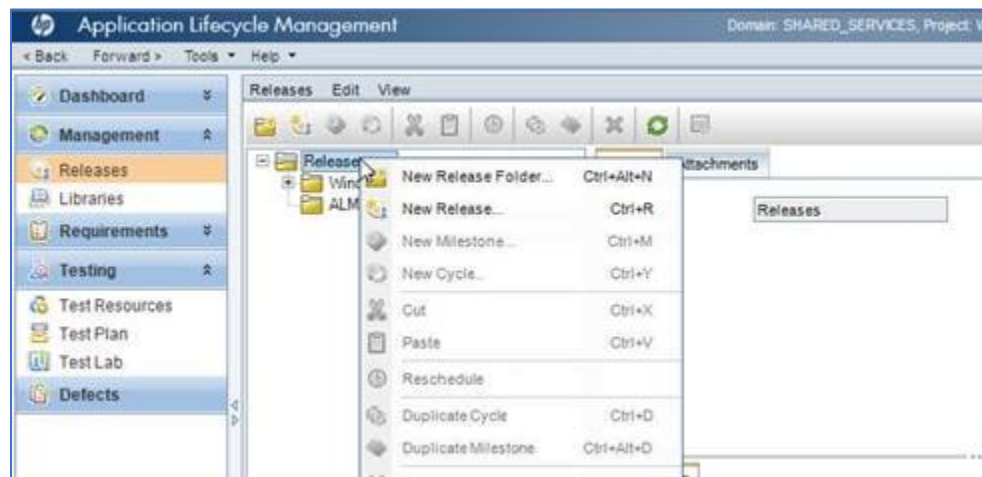
Enter name and click OK. Folder gets added to hierarchical structure under releases.
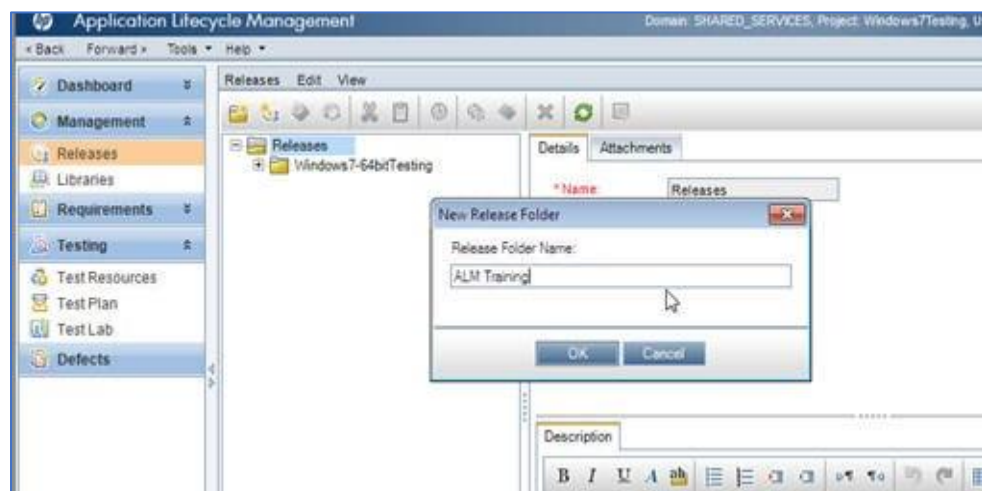
4. *Create Release:* under newly created folder we are going to add new release by right clicking on root folder and choosing "New Release".
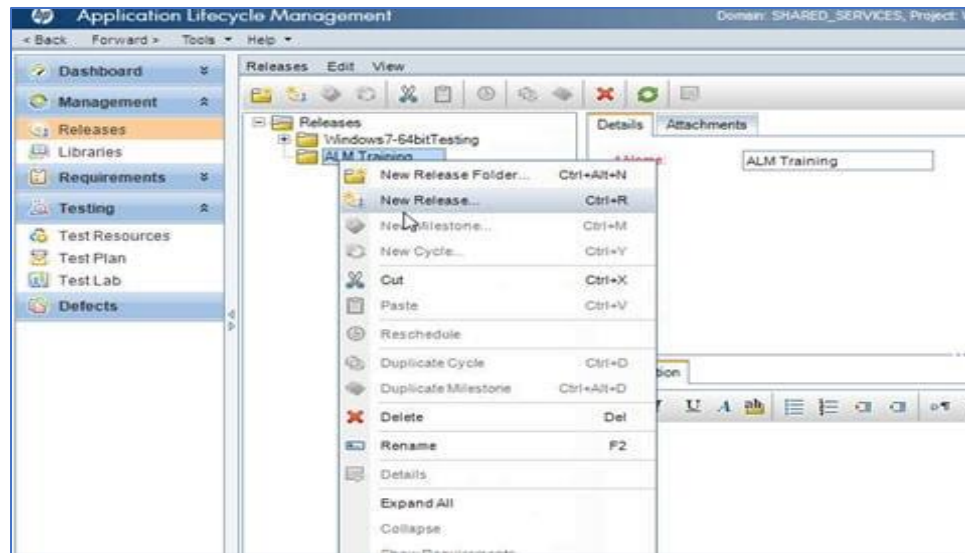
Enter the Name. As you can see, a start date and end date are the
required fields. There is a description box where you can enter any text
and then you can upload any supporting documents under attachment.
Enter the information as required and click OK.
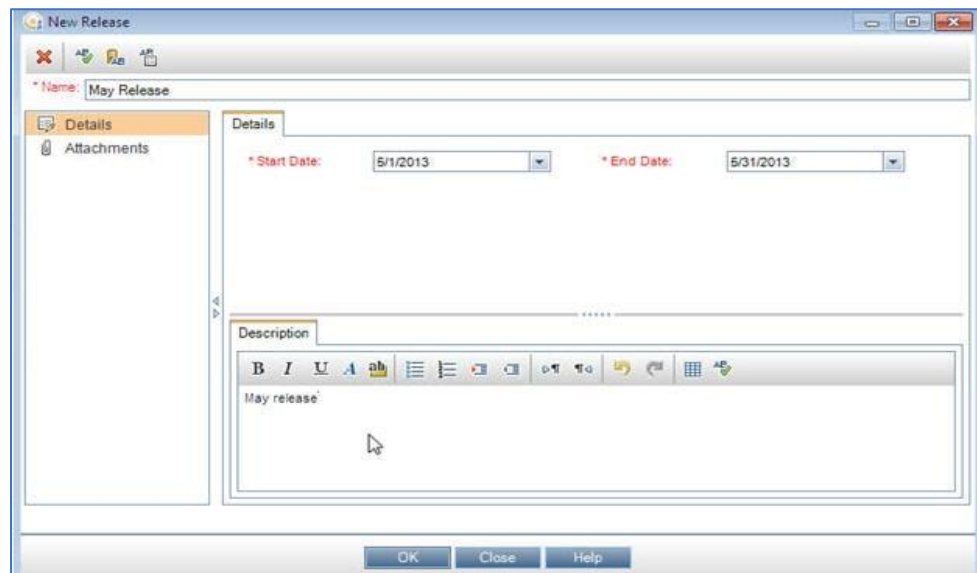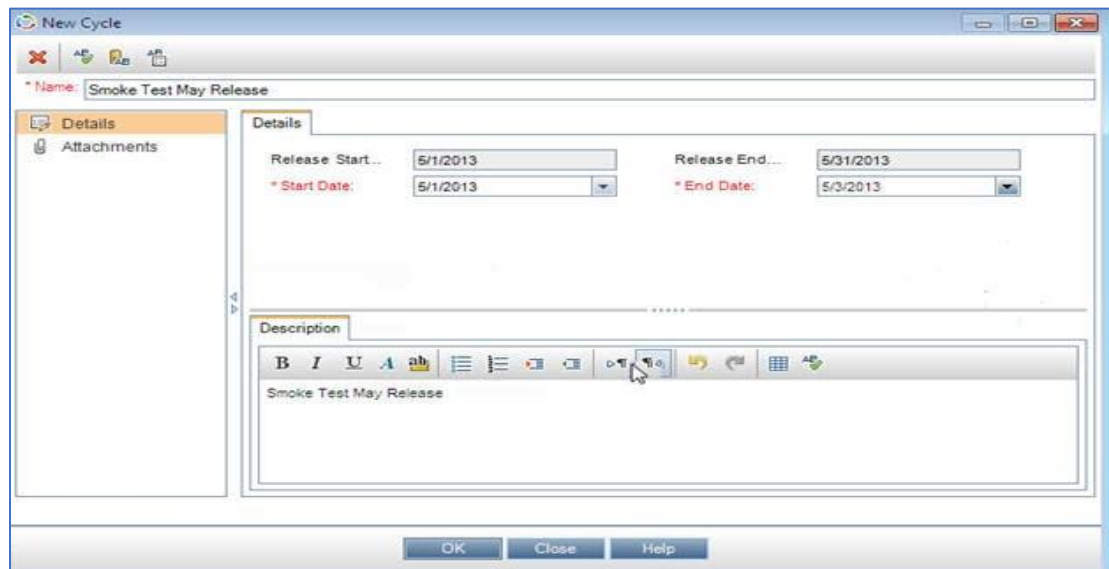
The release gets added
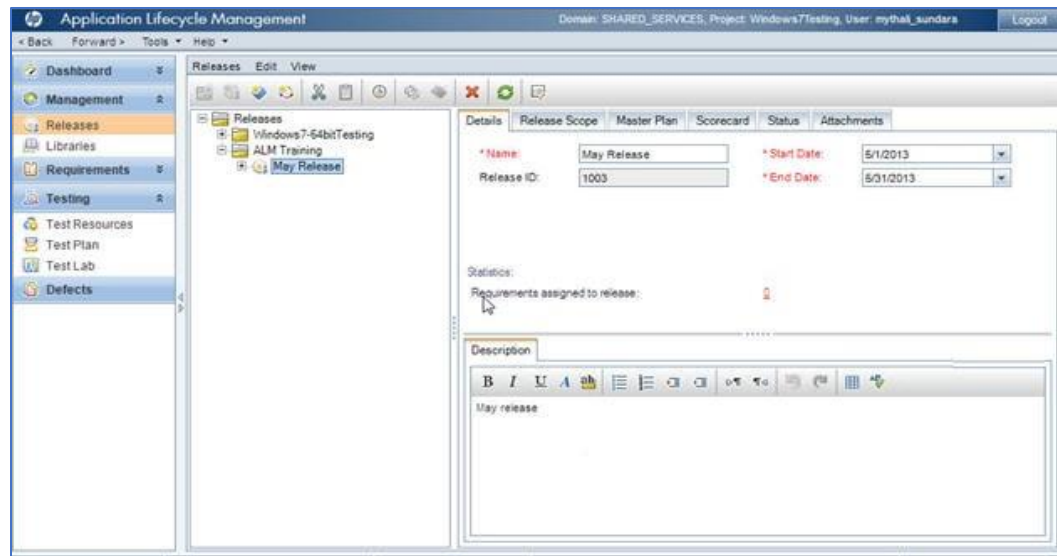
5. *Adding Cycles:* The next step is to add cycles. Under the newly added release, the options to add a new release folder or release are disabled. You have options in the menu to add new cycle activated. Choose "New cycle".
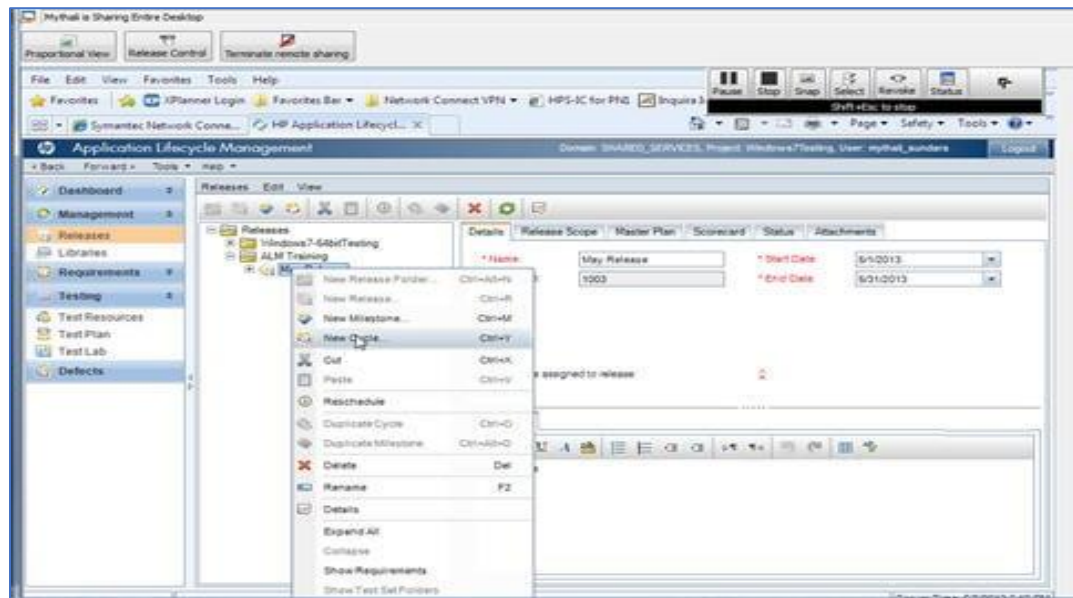
Again name, start date and end date are mandatory items. Enter the same and click OK.
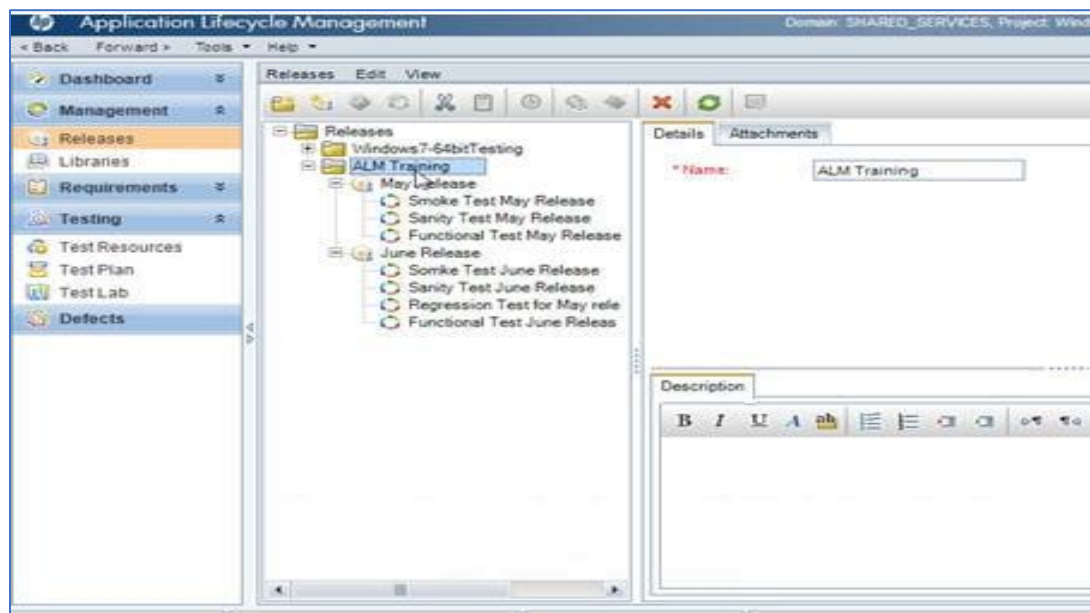
The cycle will now get added to the release. This is how the May and June release information from our table are going to look once it is all added to ALM.

There are some validations for entering the cycle dates. They have to fall within the range of the release dates under which the cycle is created. If not, a validation message gets displayed.
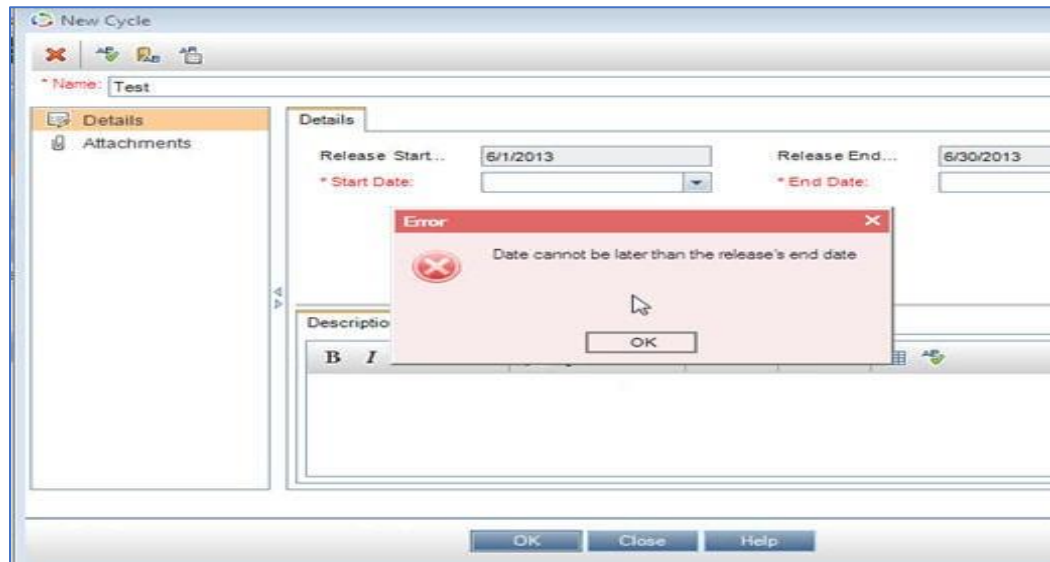
Once it is created. Choose the "May release" and observe its data.
The master plan tab will display the timeline for the release with its cycle information:
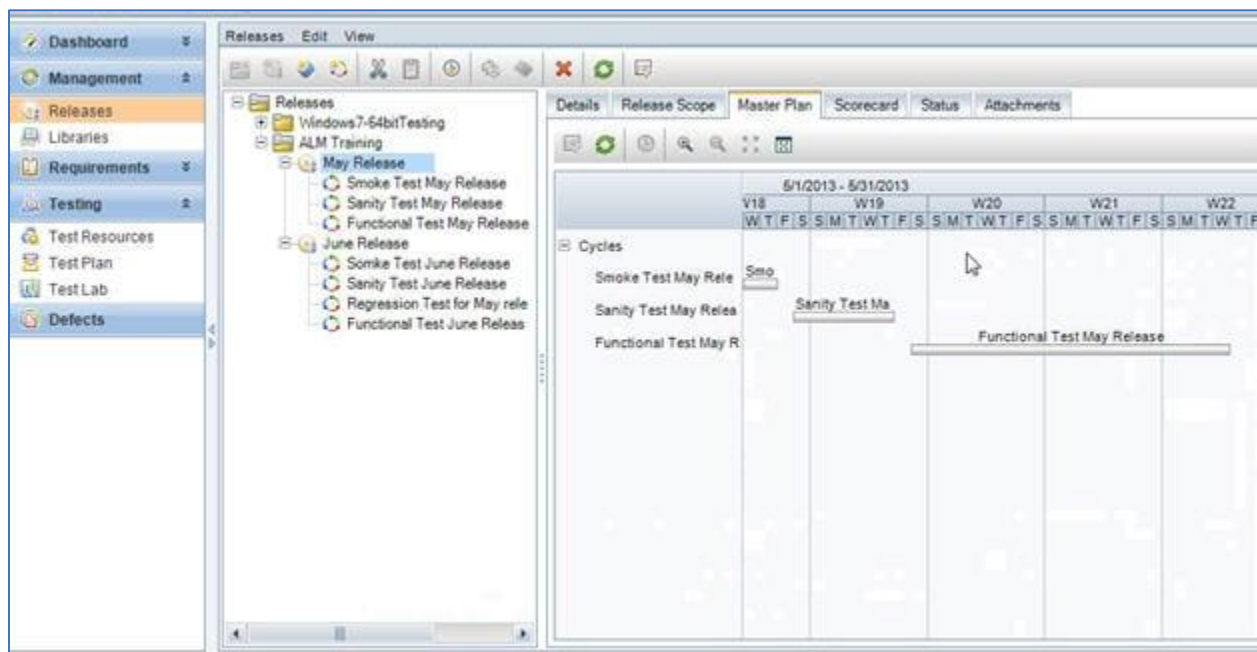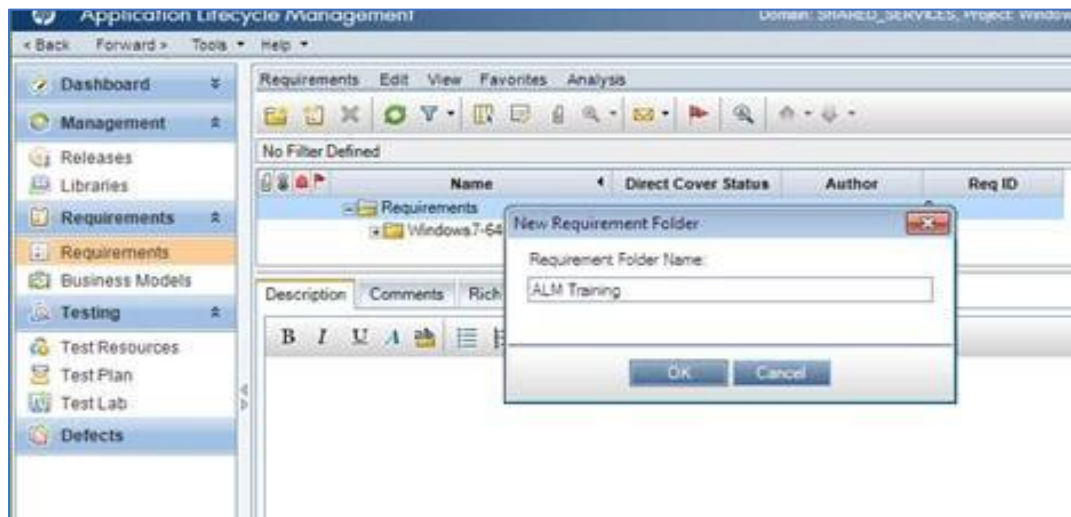
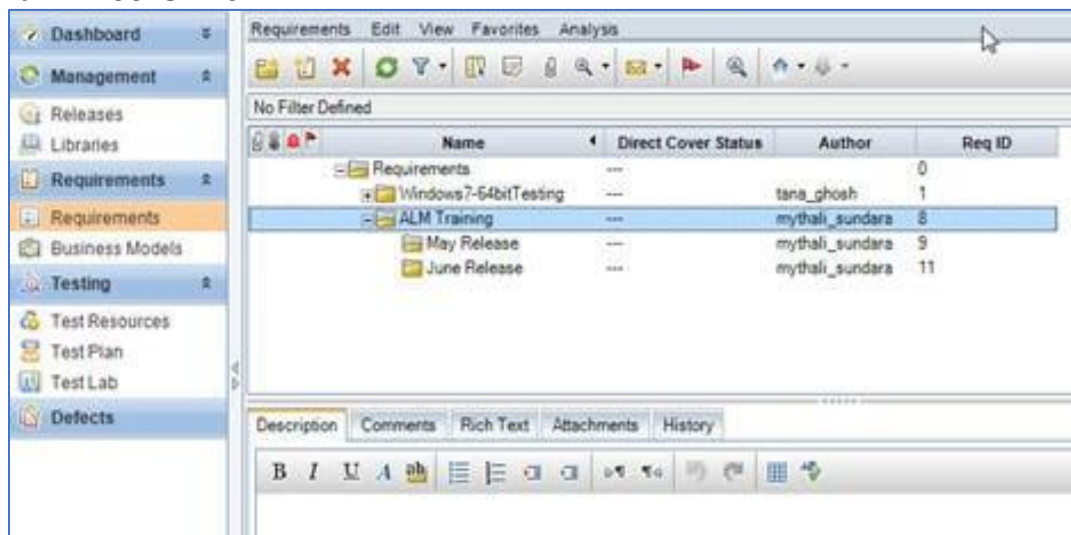The Status attachment displays the progress of the release:
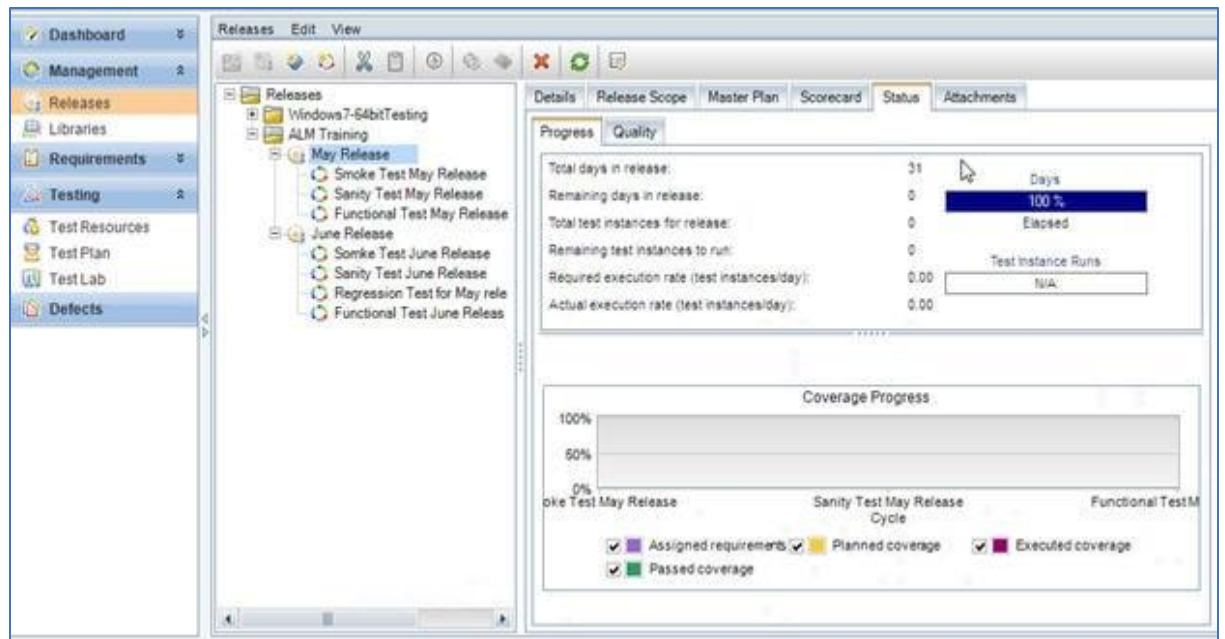
How to Create Requirements in HPALM

Step #1: Go to "Requirements->Requirements" option from the ALM sidebar.

Step #2: Create new requirement folder. Here we go with the name ALM training and May release & June Release are subfolders. Enter the name and click OK.


It will looks like

Step #3: Adding Requirements: Click on "New Requirement" icon from the menu while choosing the folder under which you want to add the requirement. The author name gets auto-populated. Enter the name and choose the relevant requirement type from the drop-down. I am going to choose "Testing".
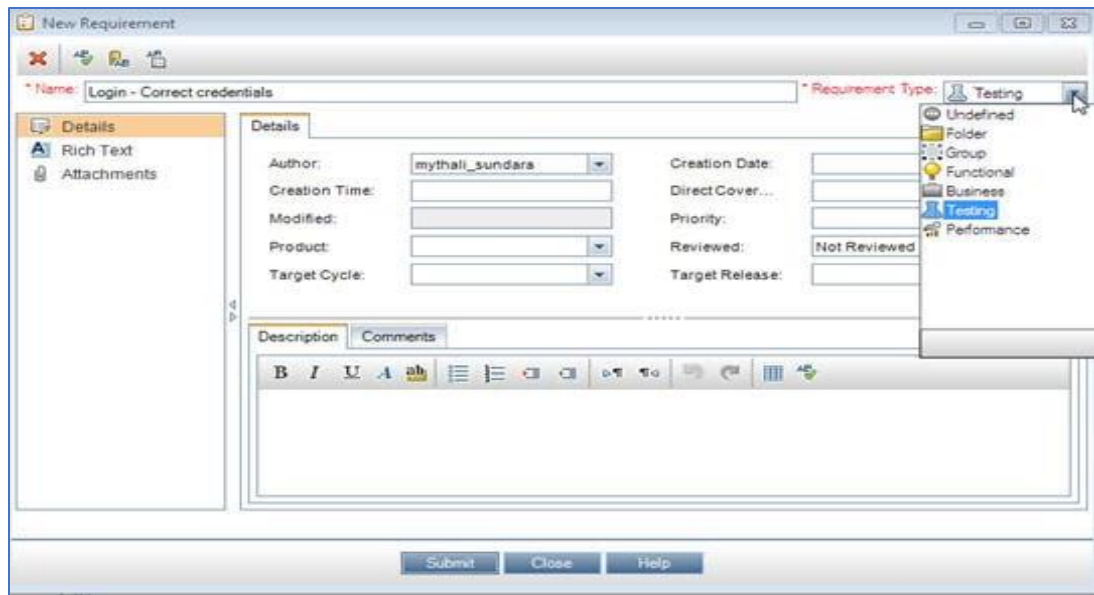
Step #4: Link the requirement to a cycle and release: Once you have added the requirement name and other details, you can now link it to any release and cycles as desired. You can do that by clicking on the "Target Release" drop down and selecting the release information. Since in our example this belong to the may release I am going to choose the same from the drop-down.
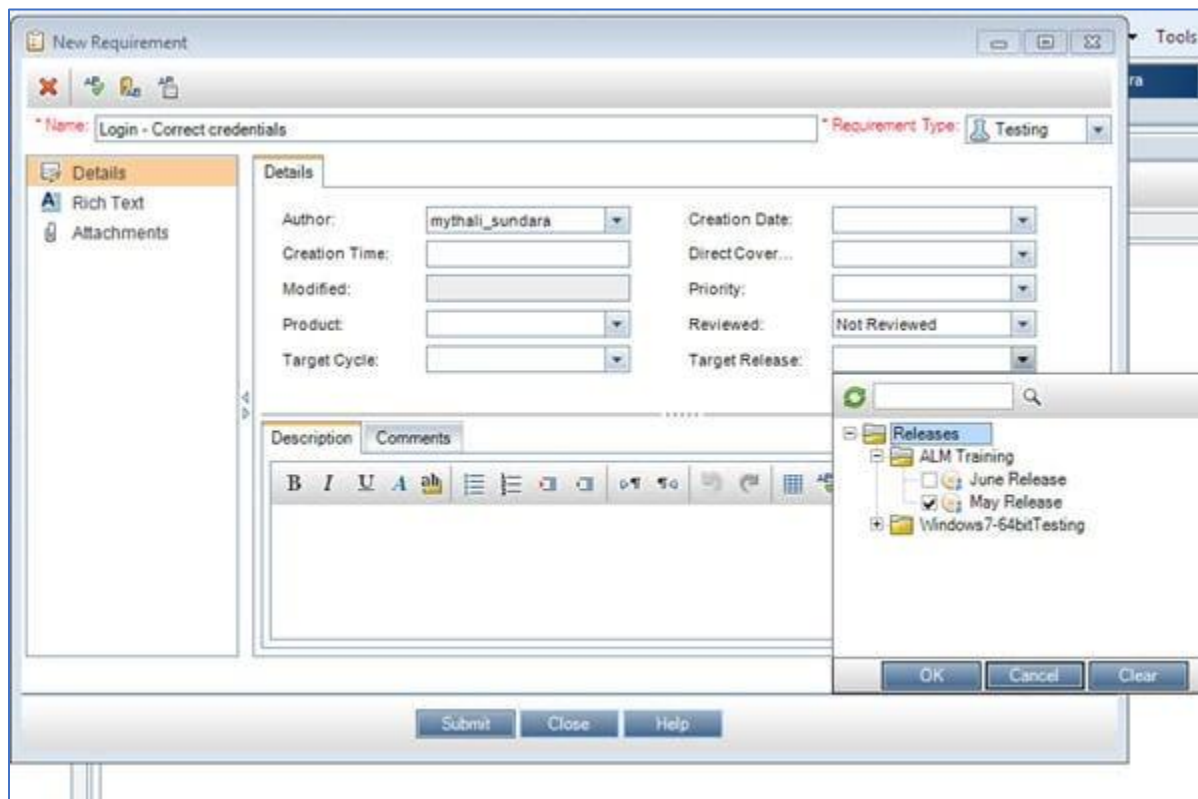
Note: You can associate a requirement with more than one release.

Step #5: To choose the Cycle: Click on "Target Cycle" drop down and choose the required Cycle. Since our login is a crucial function, I would like to perform it in every cycle. So I am going to map it to all 3 cycles under the May release. Here is how I do it.
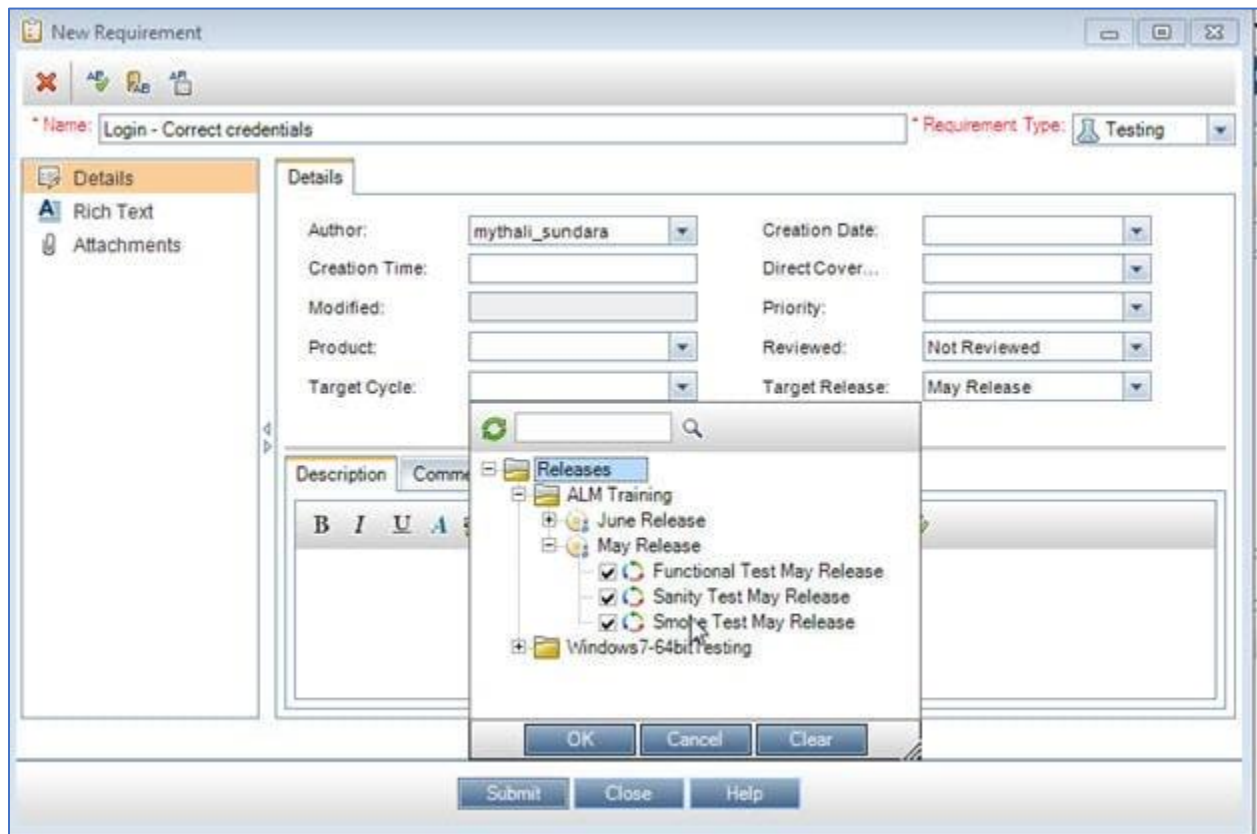
Step #6: You can then assign additional details like the priority, provide attachments and other details before you Submit. The requirement gets added.

Step #7: If you need to modify or update the requirement you can do so, by double-clicking from the tree view. The following window opens up:

For every requirement a 'Req. ID" gets auto-generated. In this case, it is "7". Also there are other features like requirement traceability, test coverage, etc in the sidebar of the "Requirement Details" dialog.

Requirements and Release Statistics:
Now that we created one requirement and linked it with a Release and Cycle, let us see how this linking effect the "Release" and "Cycle" properties for the ones we created earlier.

1) Navigate back to "Management->Releases" from the sidebar.

2) Select one of the cycles we added earlier. Notice the properties:
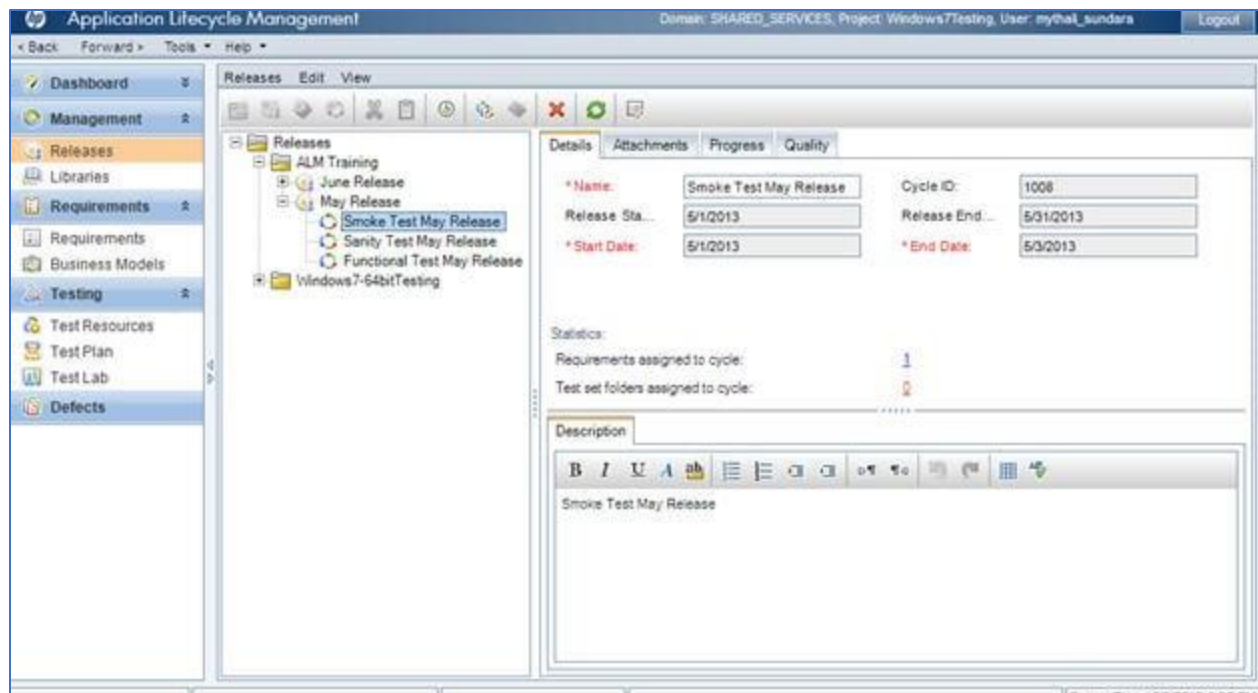
3) Notice the statistics section, it shows "1" for the "Requirements assigned to cycle". It now clearly indicates how many requirements are associated with this cycle.

4) Same thing with the Release. Hit the refresh button if the statistics don't get updated immediately.
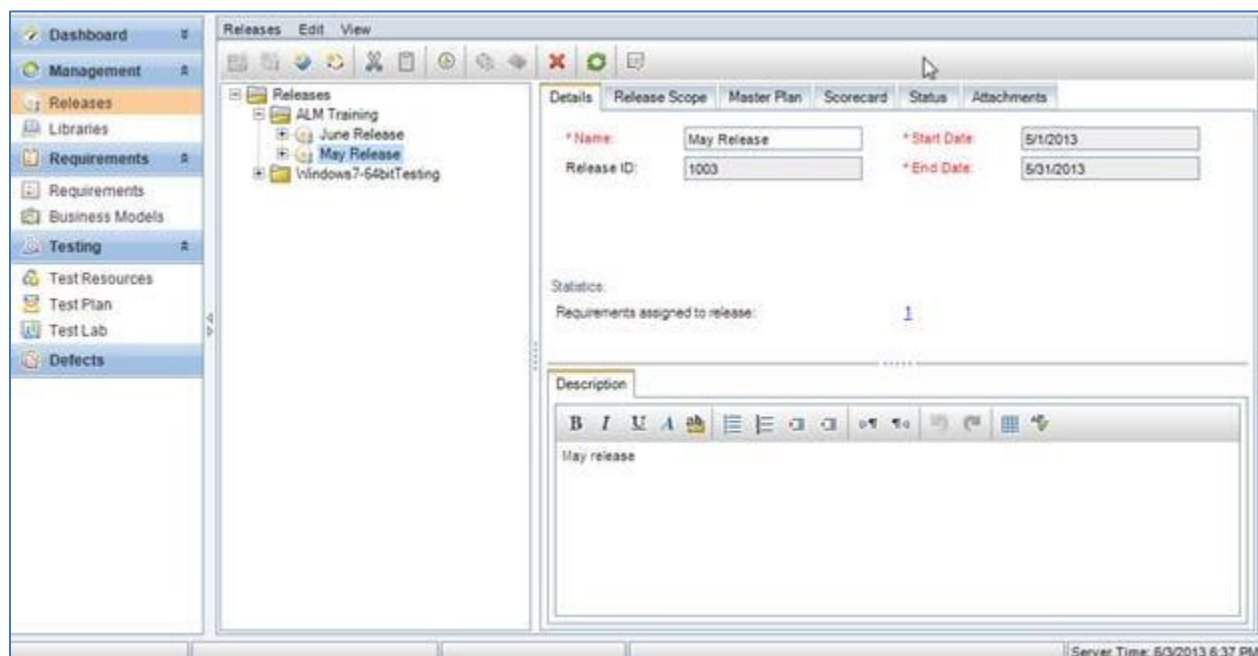
Creating and Managing Test Cases

- How to create test cases in Quality Center
- How to link test cases to requirements
- Creating test suites in Quality Center

If the following are the test conditions that you came up with for each of our features in the May release:

1) Login – with correct credentials
- a) Launch Gmail, Enter correct username, enter correct password and click login
- b) Launch Gmail, Enter correct username, enter correct password, select "Stay signed in" and click login

2) Login – incorrect credentials
- a) Launch Gmail, Enter correct username, incorrect password and click Login
- b) Launch Gmail, Enter incorrect username, correct password and click Login
- c) Launch Gmail, enter an incorrect username, incorrect password and click Login.

How do you write a manual test case for the same? Either you would use a word doc or an Excel sheet. I used an excel sheet to write the 1(a) test case as an example:

| Test Case #	Test Case Description	Step #	Test Data	Steps to Perform	Expected Result	Actual Result	Comments
1-a	1. Login - with correct credentials	1	url: www.gmail.com	Launch URL	Gmail.com page should open up		
		2	Username: Test	Enter Username	The username is entered into the username field		
		3	Password: ALM Test	Enter Password	The password entered into the Password field and characters are hidden as dots		
		4		Click Sign In button	The user is logged into gmail.com page and inbox is displayed		

Test Plan Tab in ALM
**Steps to create test cases under Test Plan tab:**
Step #1: Login to ALM into the right project. Create the release, cycles and requirements as described in the previous tutorials.

Step #2: Go to the Test Plan tab by choosing "**Testing->Test Plan**" from the sidebar.
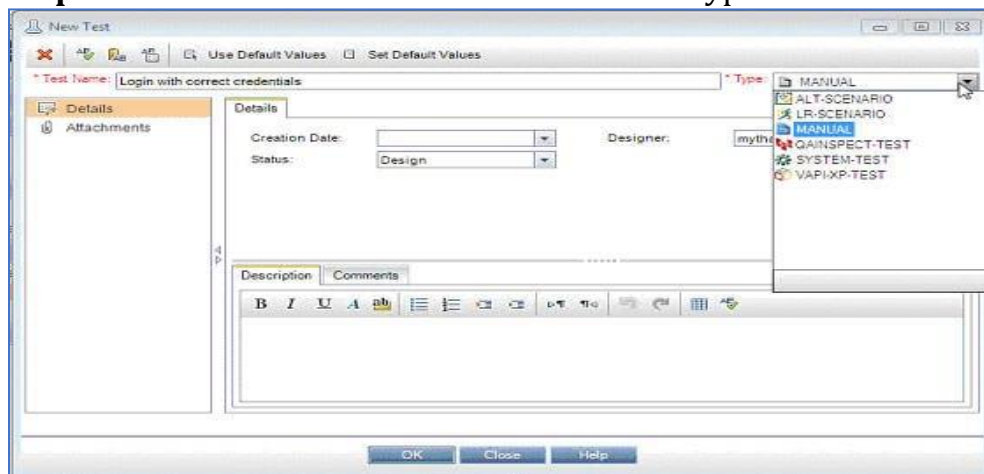
Step #3: Choose "Subject" as your home folder and create a subfolder "ALM training" under it. I am going to create "May Release" and "June Release" Subfolders under it.
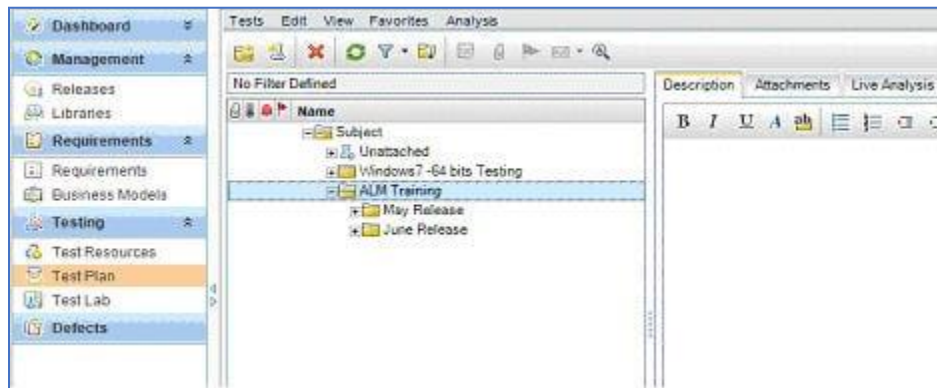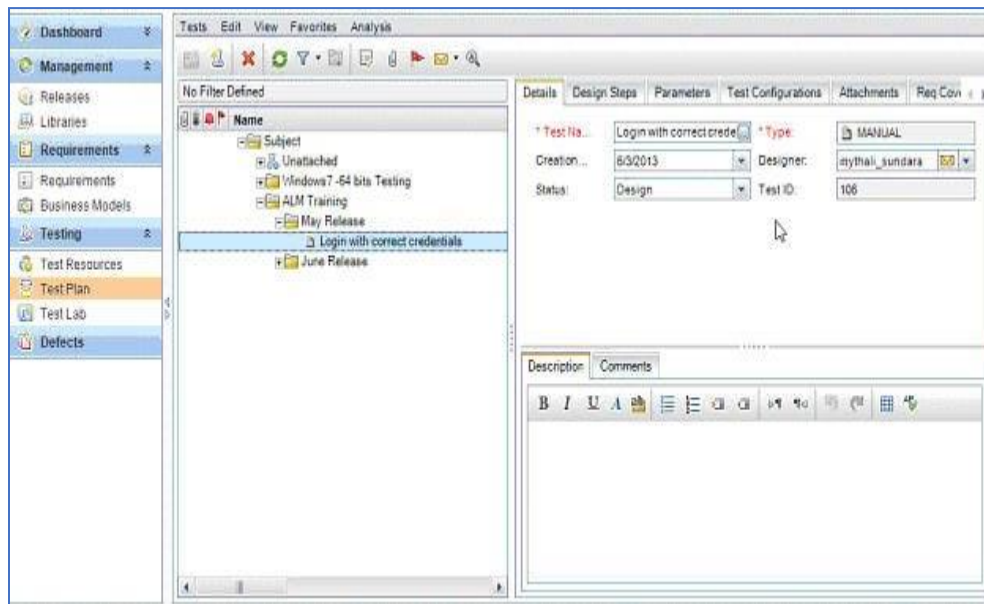

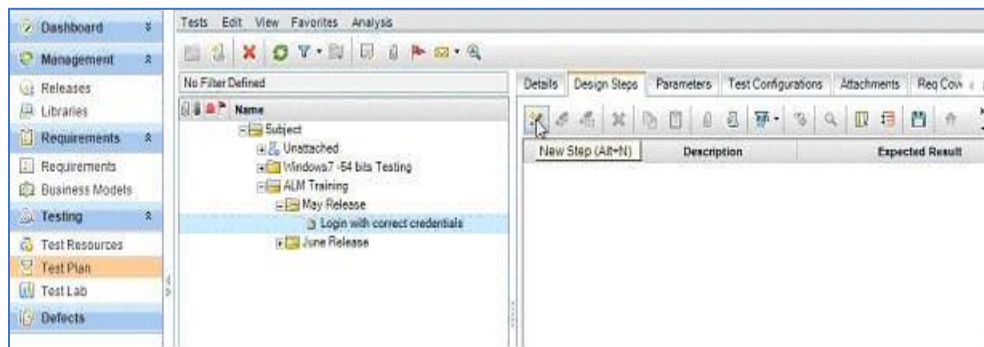**Step #4:** Go to May Release folder and choose the option to create a new test.
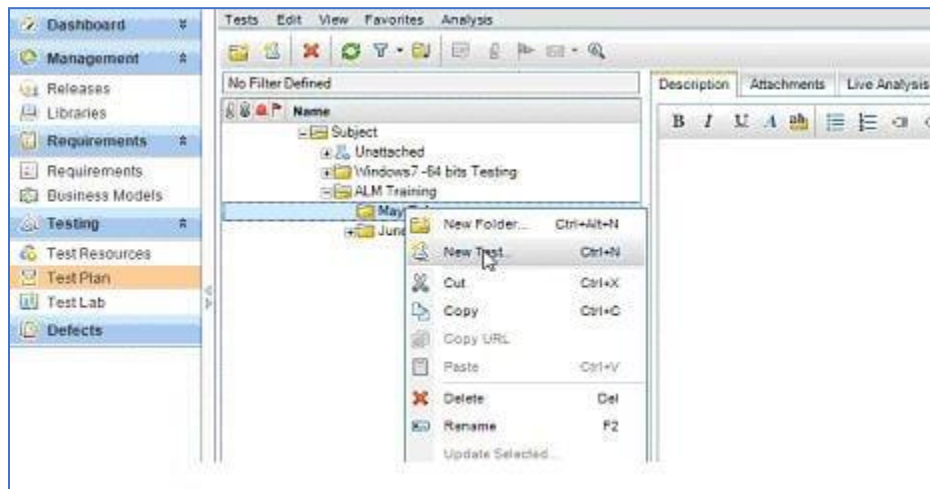
**Step #5:** Enter the name and then choose the "type". Choose "manual"

Step #6: Enter the other details. The designer name will be auto-populated based on your login credentials. Click OK. The test gets added.
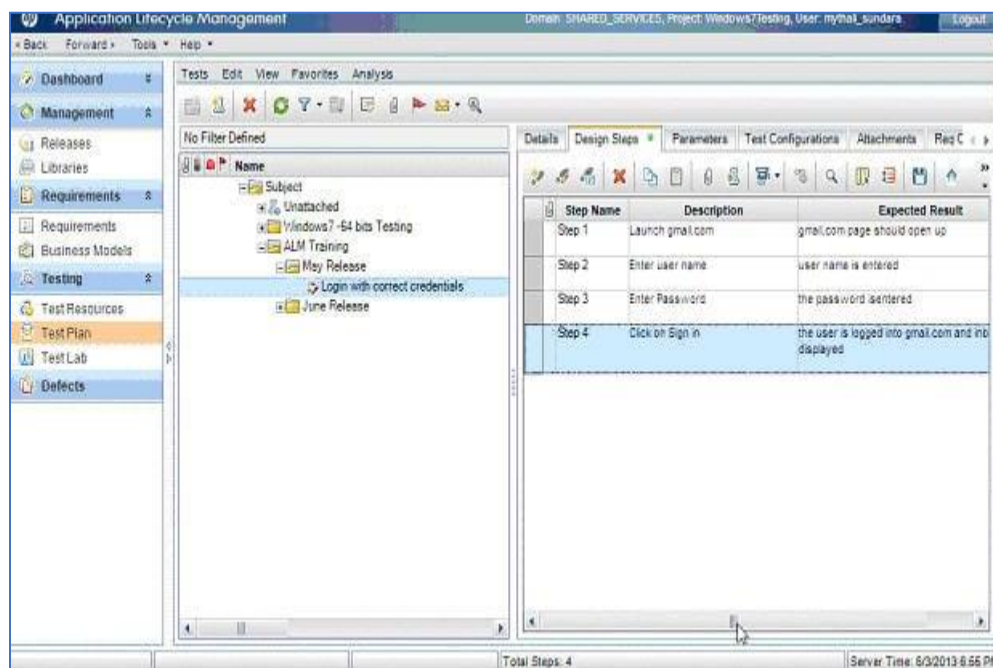

Step #7: Now you can add your steps. Click on the "Design Steps" tab. Click on "New Step" icon.

Step #8: Enter the step details. The description and Expected Results fields come up complete text editing features that are self-explanatory.
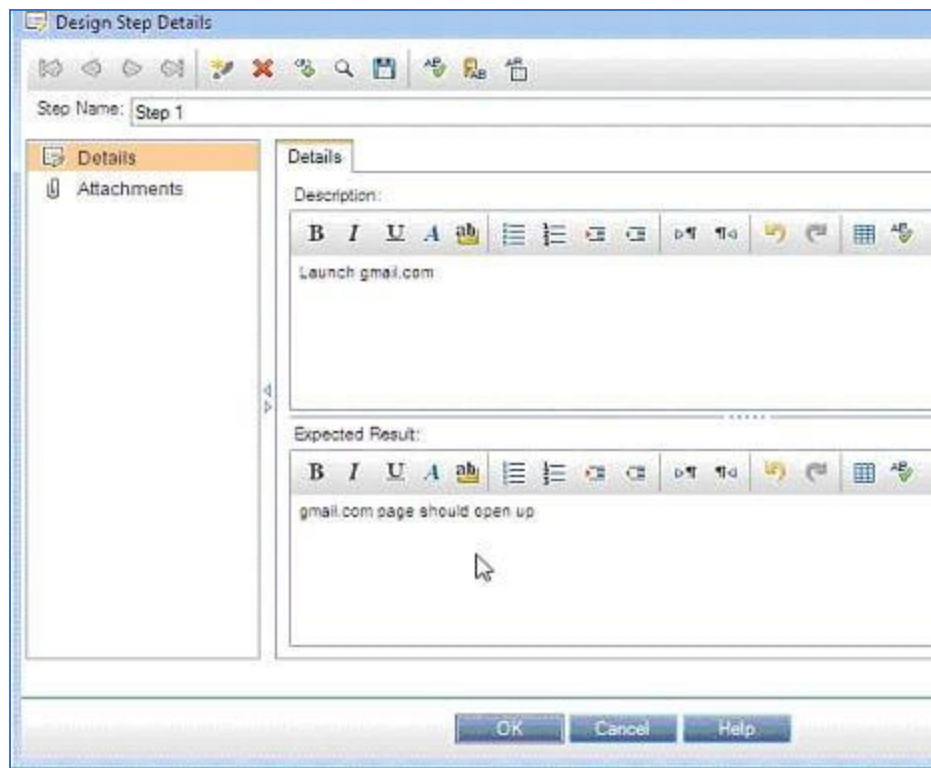
Step #9: I am going to create all the steps as shown above. This is how the completed test case looks like:

This completes the process of adding test cases and steps to them.

Step #10: Under May release I am going to add some more test cases.
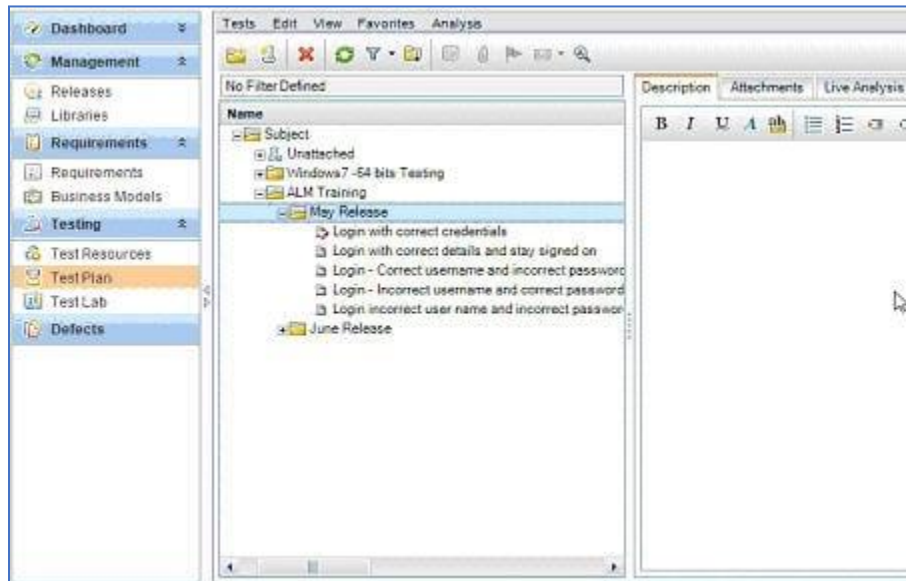
Linking Test Cases to Requirements:
Steps to link test cases and requirements:

1) Select a test case created and click on it. All the properties get displayed in the right-hand side tab. Go to "Req coverage" tab and click on "Select Req"
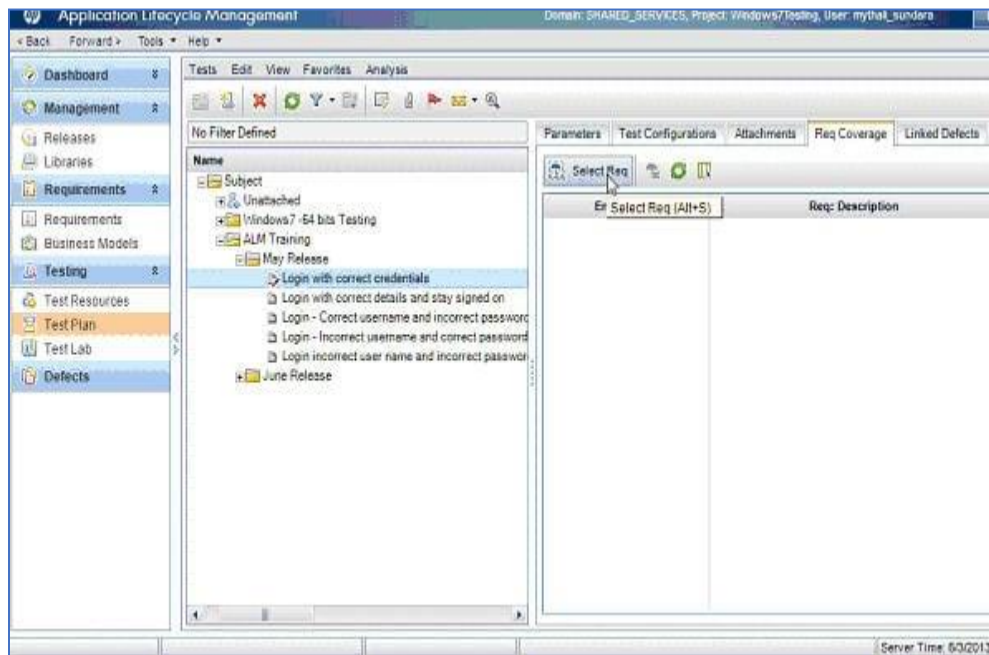
2) The requirements tree gets displayed on the side. Expand the tree and select the needed requirements.
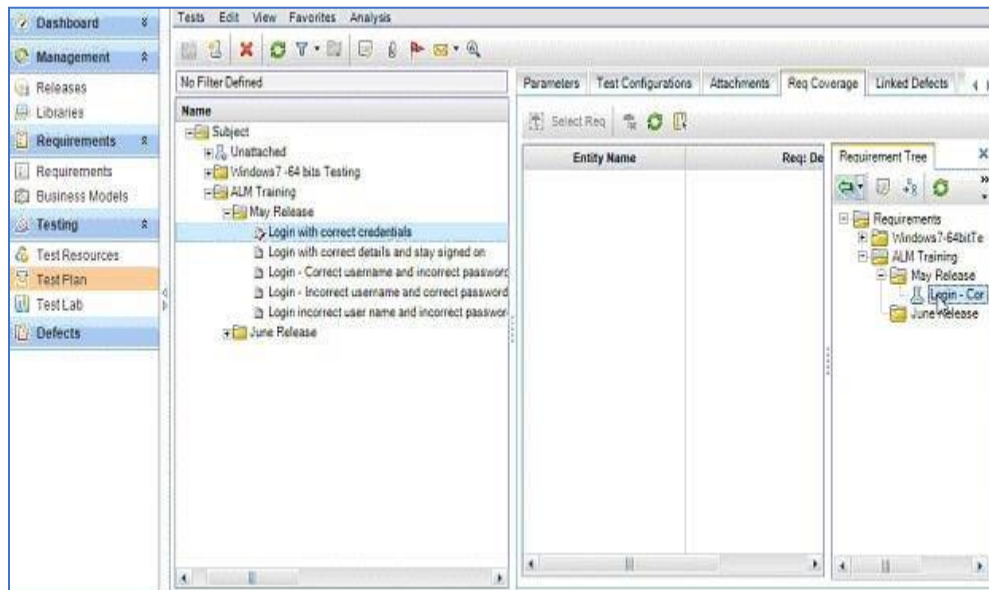
3) Once done, close the requirement tree. You can link a test case to as many requirements as you would like. This is how the added requirement looks.
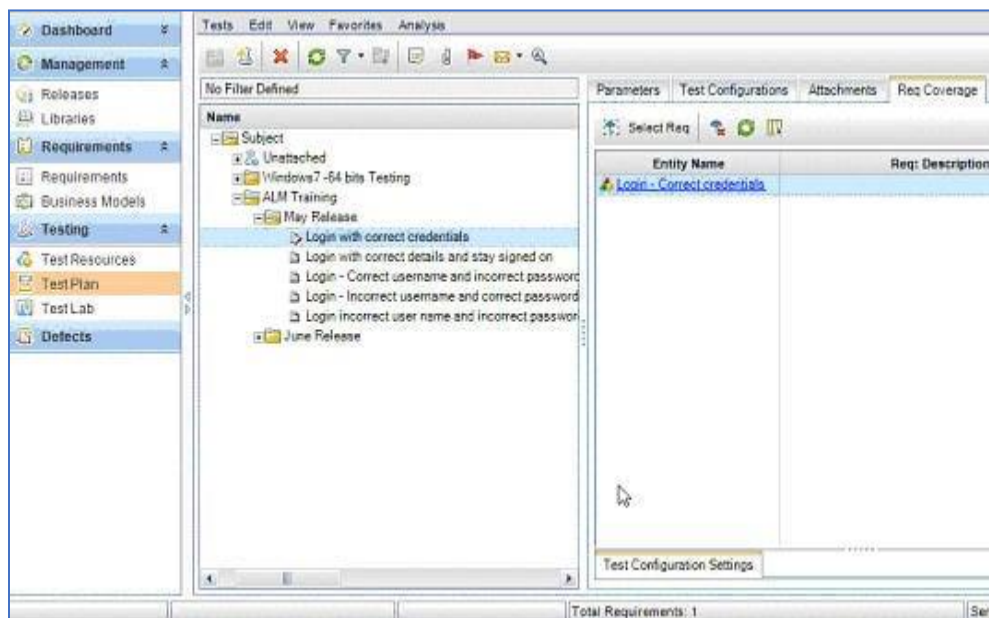
4) Let us now check, how this mapping effects the requirement. Go to Requirements tab from the sidebar. Double click on the requirement that you just mapped and notice the "Test Coverage" details:
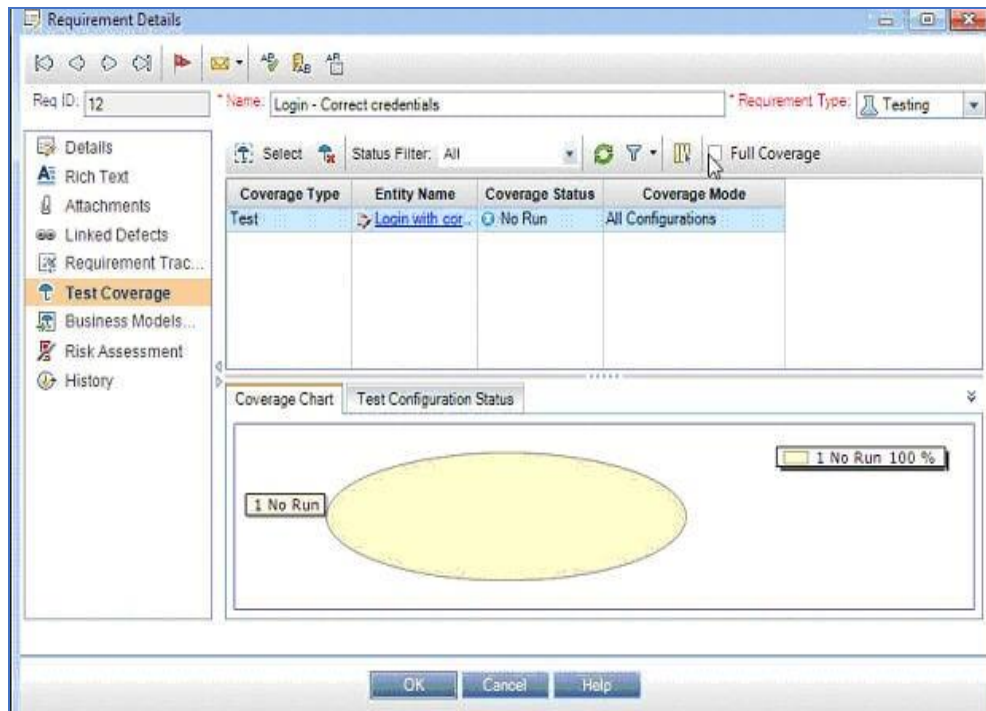
You see how the test details and it's the test's status is displayed. Since this test was just created and never run, the coverage status shows as "No Run". Let us now move on in our tutorial and learn how to run a test.

"Test Lab" tab in ALM:

Imagine we have just begun the May release testing phase. The first cycle is Smoke test. We are not going to execute all the test cases we have.

- Briefly, a smoke test is a high-level test performed by the QA team on an AUT as soon as the code is deployed to make sure the application did not break. So we are only going to execute test cases 1-a and 2-c.
- Similarly for sanity testing, which is checking the key functionality of the AUT. We will execute 1-a, 1-b and 2-e
- Functional testing is everything.

Test lab tab will help us create test sets that contain the test cases that we need to execute in each phase. This is where the tester can execute the tests and record the test results. Let's see how.

Steps to create test suites in Quality Center:

Step #1: Go to Test lab tab by navigating from the sidebar. Create the folders as shown below:
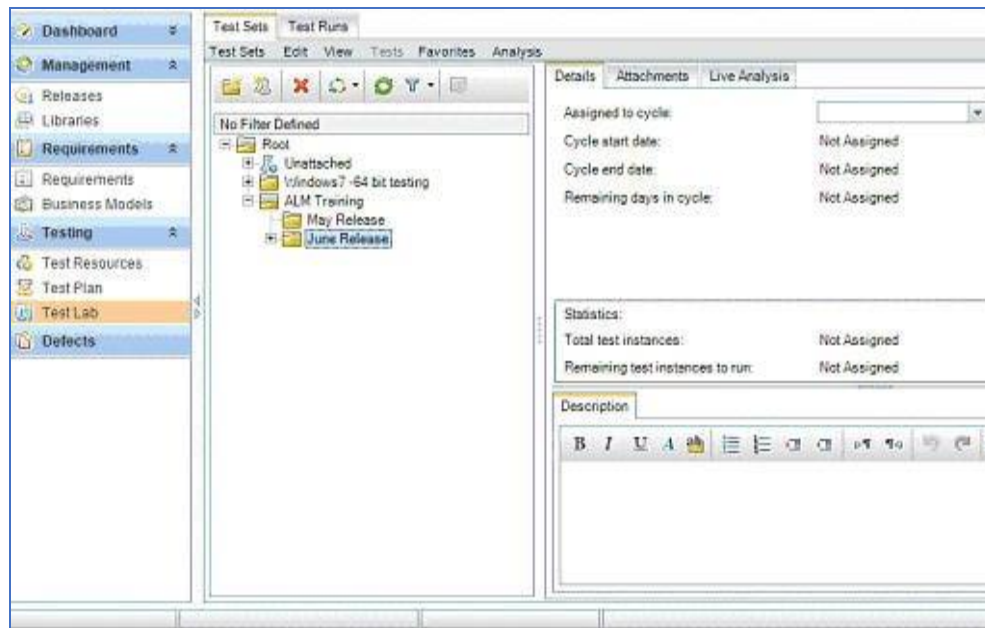
Step #2: Under May release, choose the option to create a new test set
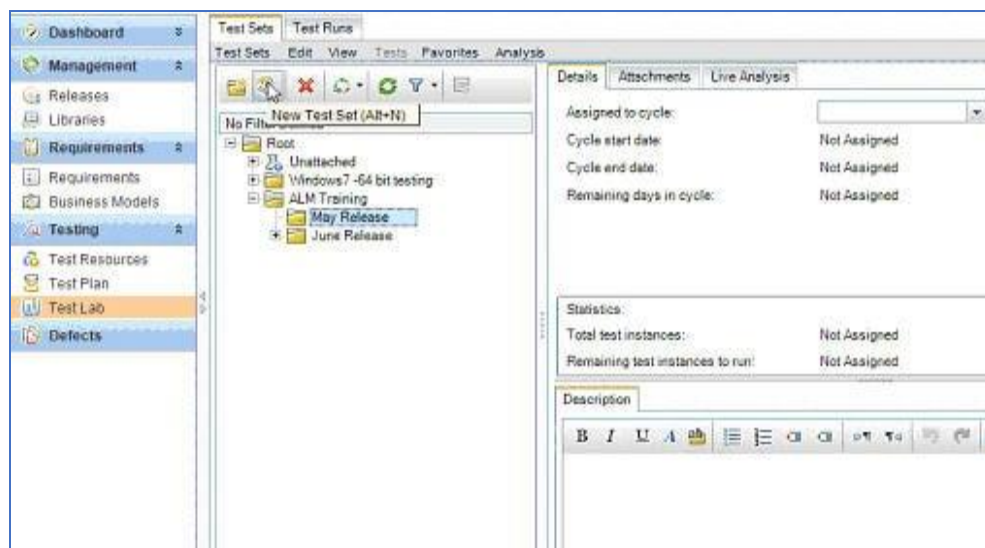
Step #3: Enter the test set name. Click OK.
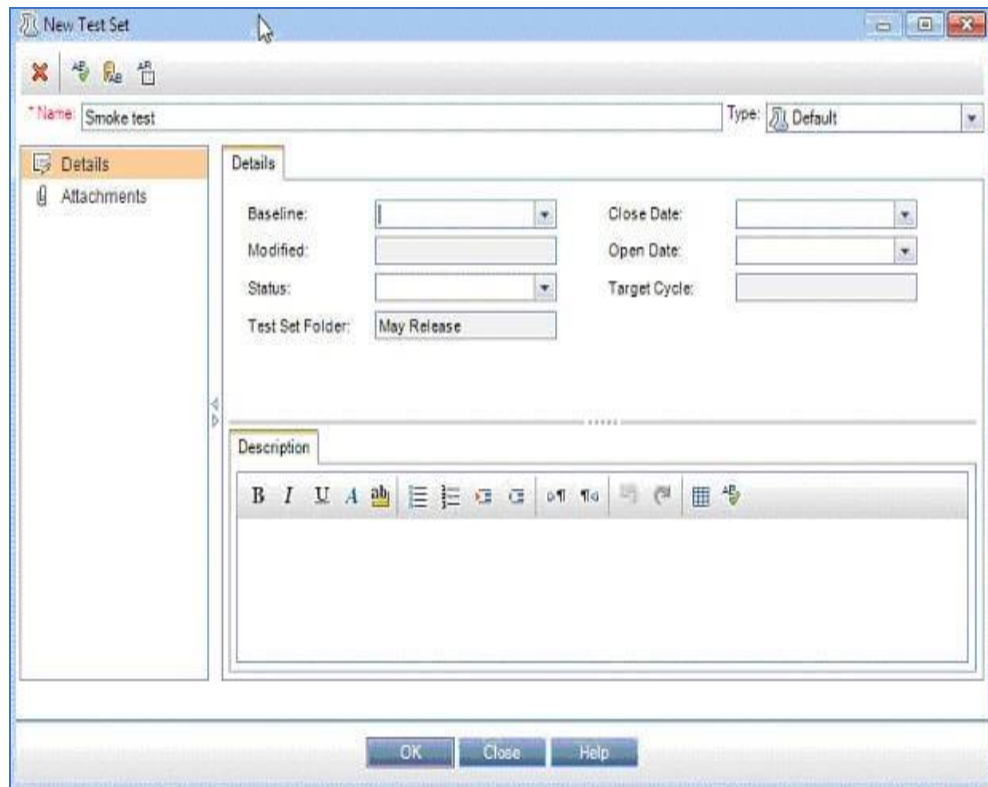
Step #4: Once it is created. Click on "Select Tests" from the menu
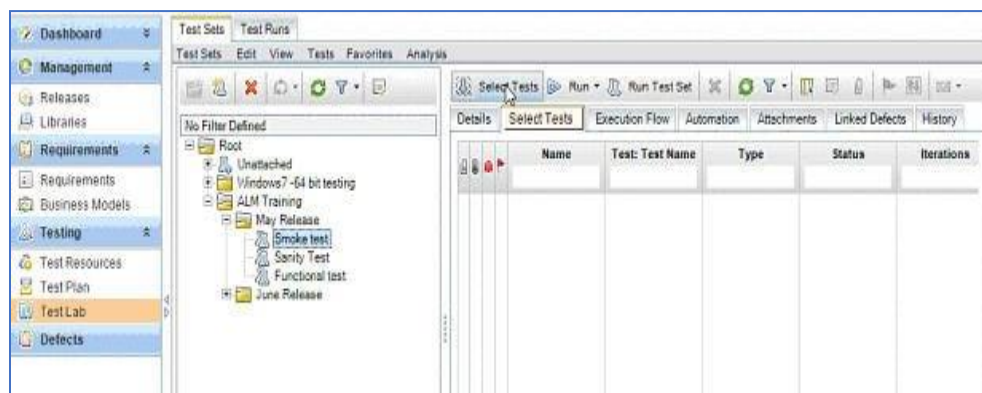
Step #5: Select the tests as required
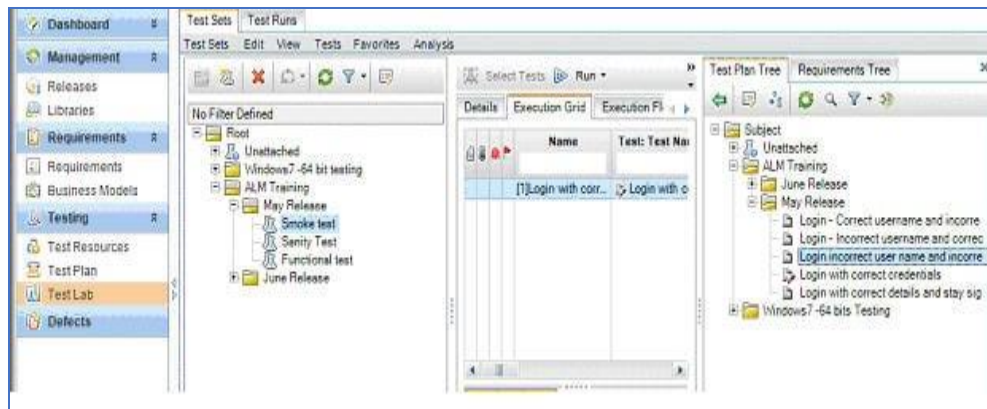
Step #6: Alternately if you choose the "Requirements Tree" tab, you can choose requirement and all the tests that are linked to it get added to your test set.
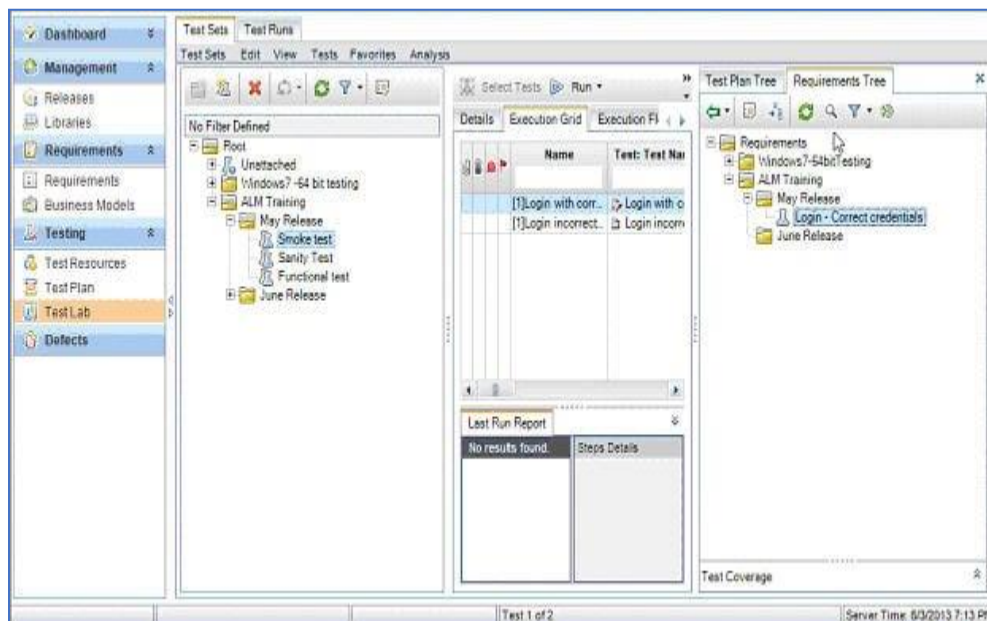
Step #7: Go ahead and create all the test sets. As you can see from the above screenshot I have created a test set each for each cycle.

Step #8: Tip: You can choose to add the same test multiple times in a test case. In that case, the second instance of the test will appear with a prefix [2].

Executing Test Cases

Step #1: In the Test lab tab, choose the test set that you would like to run and click on "Run Test" or "Run Test Set". Run Test- will execute the test set selected and the "Run test set" will run the entire set one test after the other until the end. Click on "Being Run".

Step #2: If it is an automation test and the tool is integrated, then it launches and runs it in the testing tool. In that case, it auto-populates the test result.
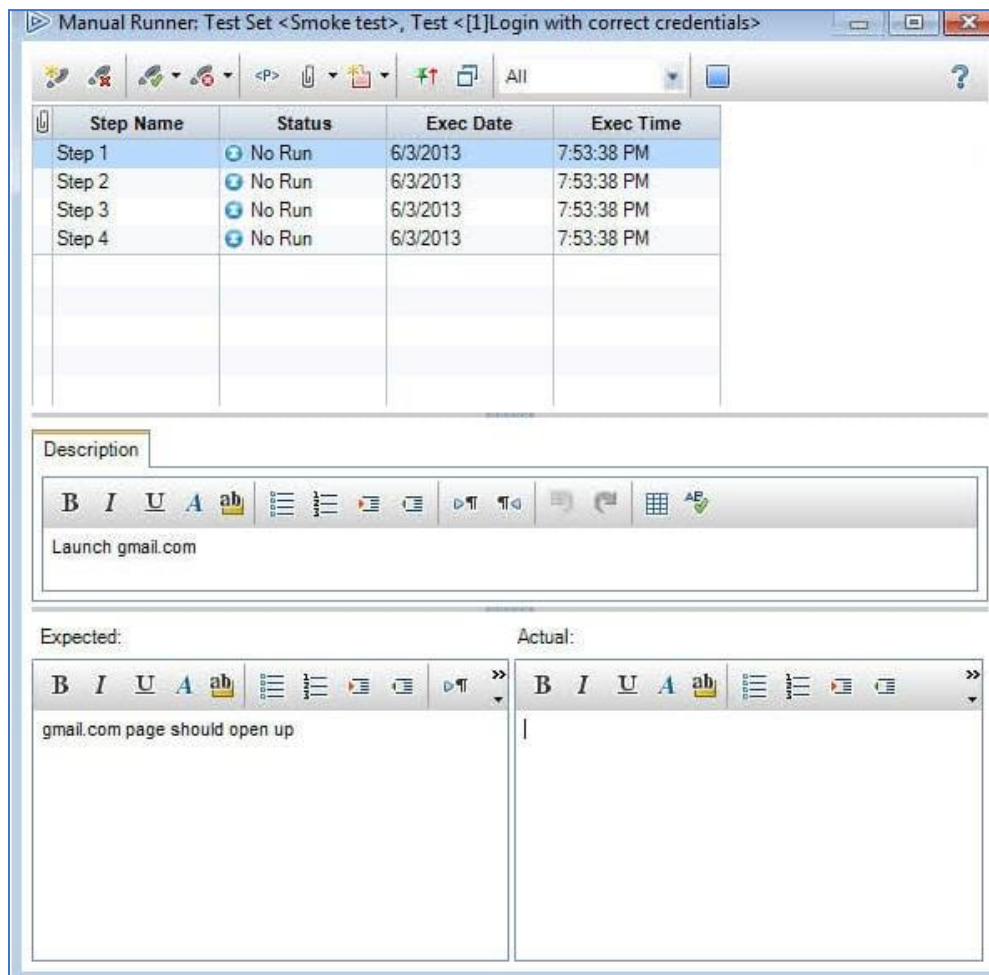
Step #3: Since ours is a manual test, we will have to execute the steps manually on our AUT and set the results. Go to the test status field and click on it to set it to a certain value. You can also enter the actual result in the space provided.
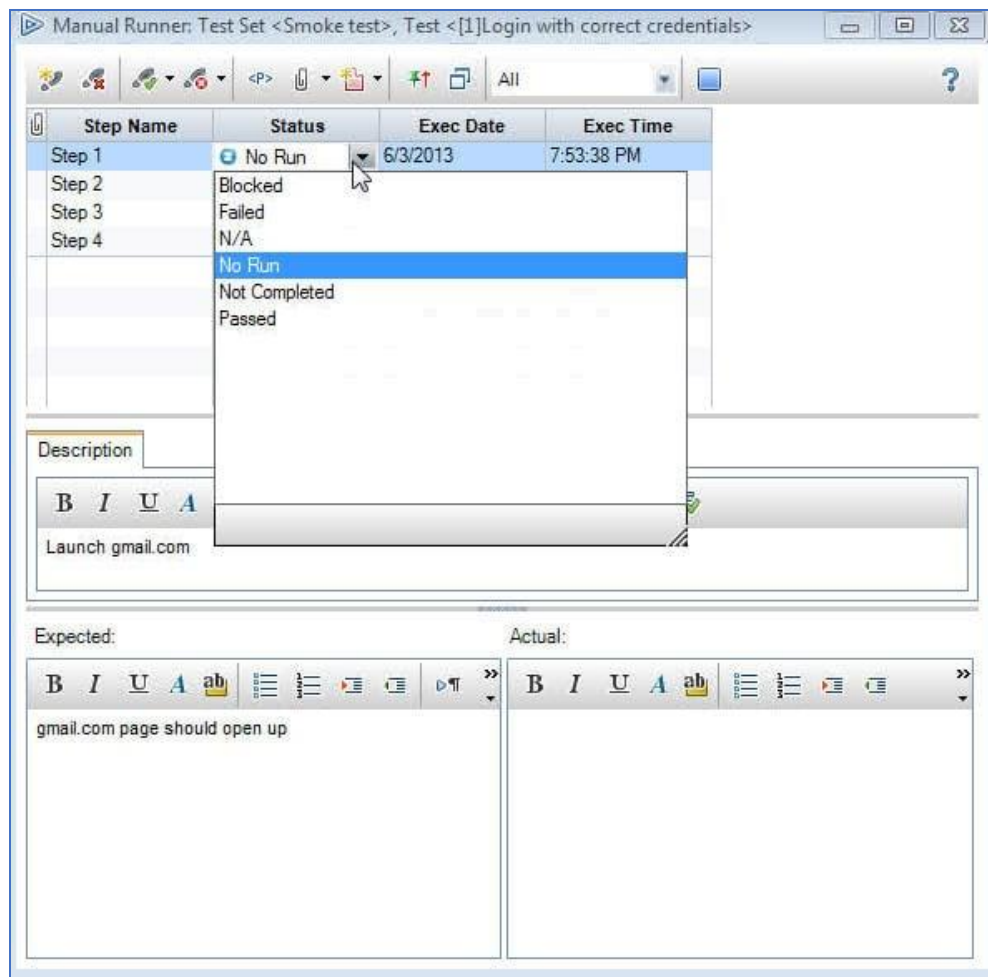
Step #4: I am going to choose "Passed". And am going to do the same for all the steps.
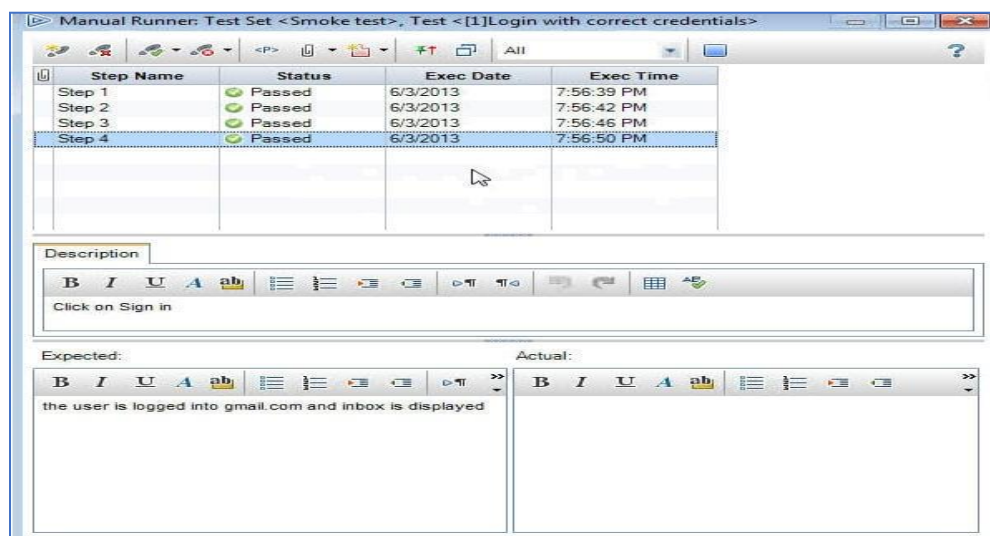
Step #5: When done, click on the cross button to the dialog. The following confirmation message is displayed. Click Yes
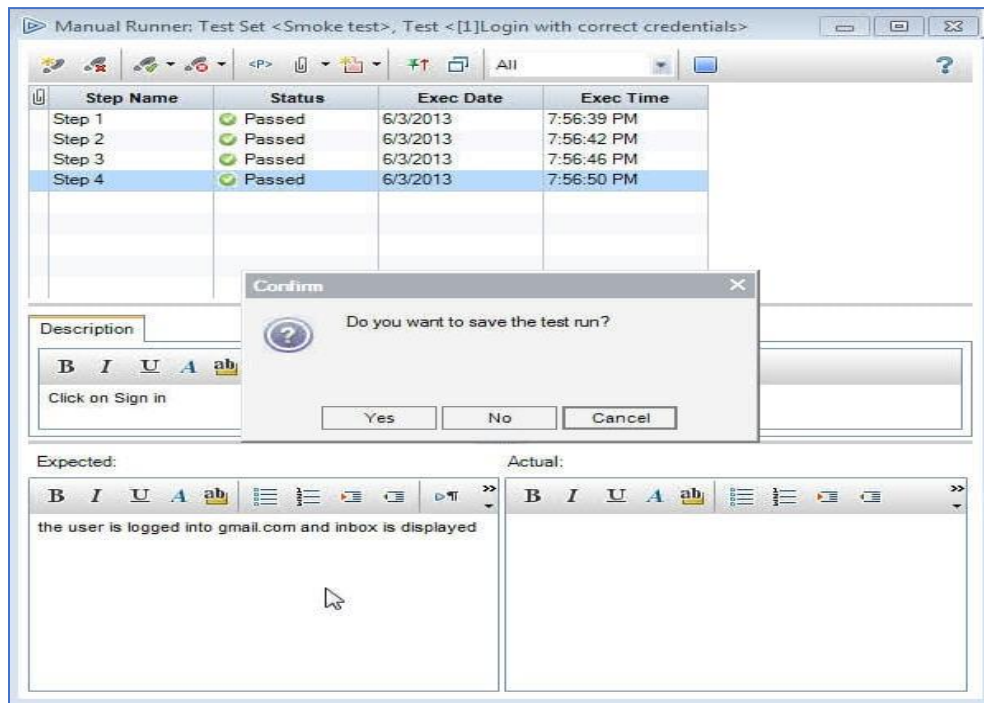
Step #6: Now you see, the status of the test is marked as passed.
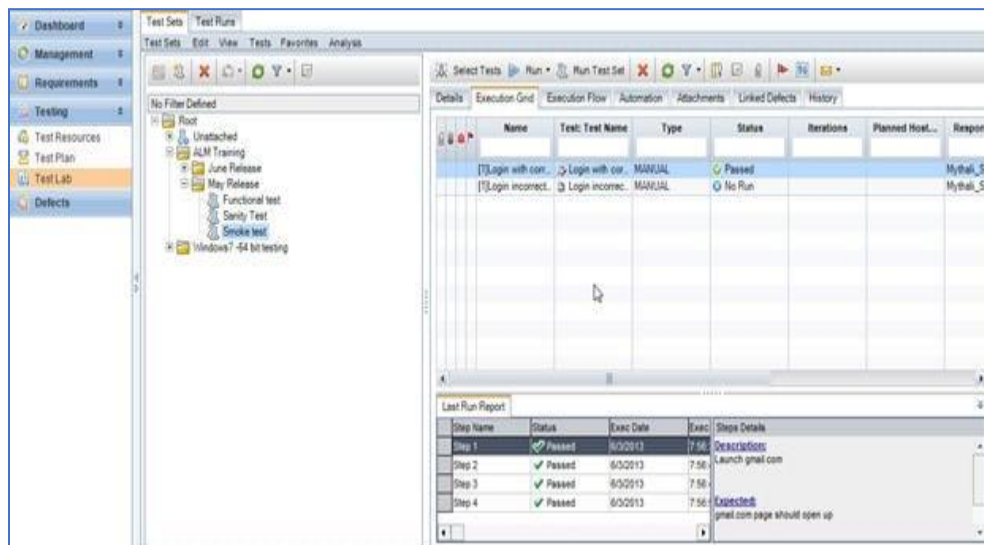
Step #7: Let us execute the next test in the list. I will follow the same steps and fail just one of the steps. The status of the test goes to failed if any one of the steps fails.
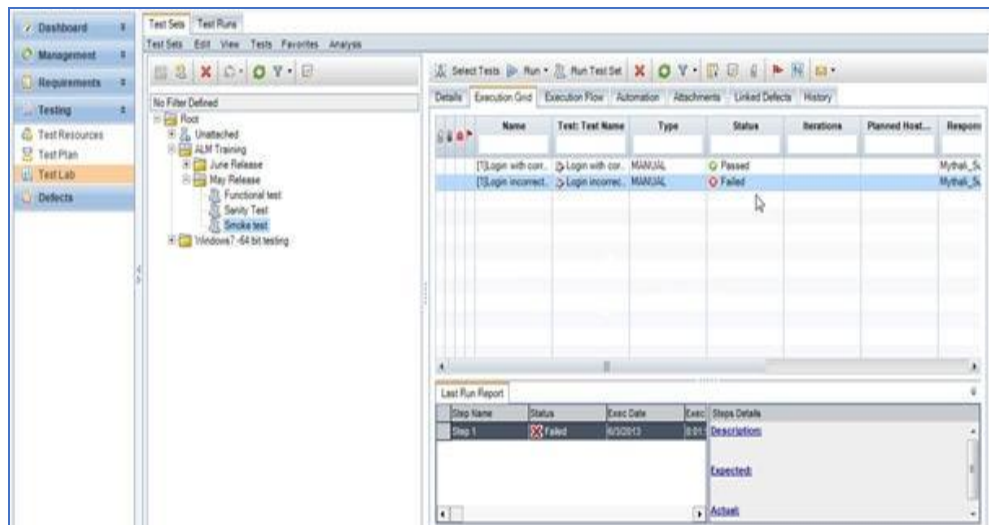
Tip: You can change this status any time you wish by clicking on the status column and setting the desired value.

Check the execution status in the Test Plan tab:
Once you have executed the test case, go back to the test plan tab and open the corresponding test case. Go to Test Configurations tab and the following is how the execution status gets reflected.
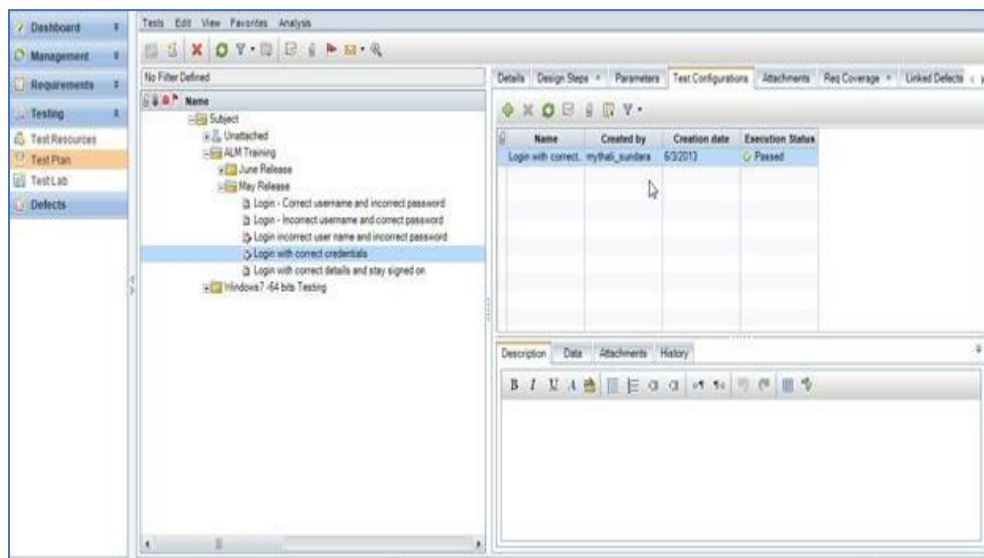
Check the execution status in the Requirements tab:
As you can see, the corresponding requirement's direct cover status has changed to "Passed".
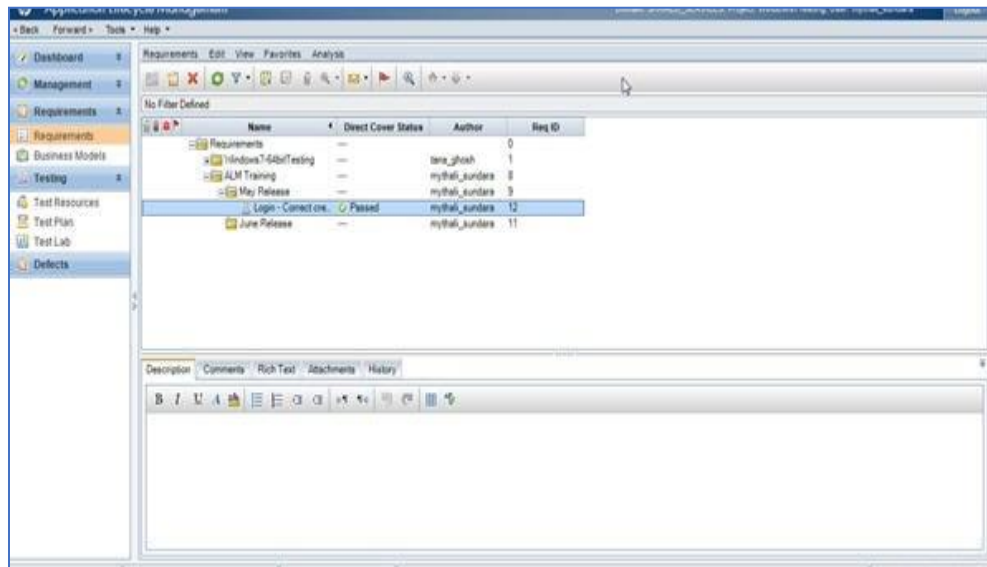
Double click on the requirement and go to "Test Coverage Status"
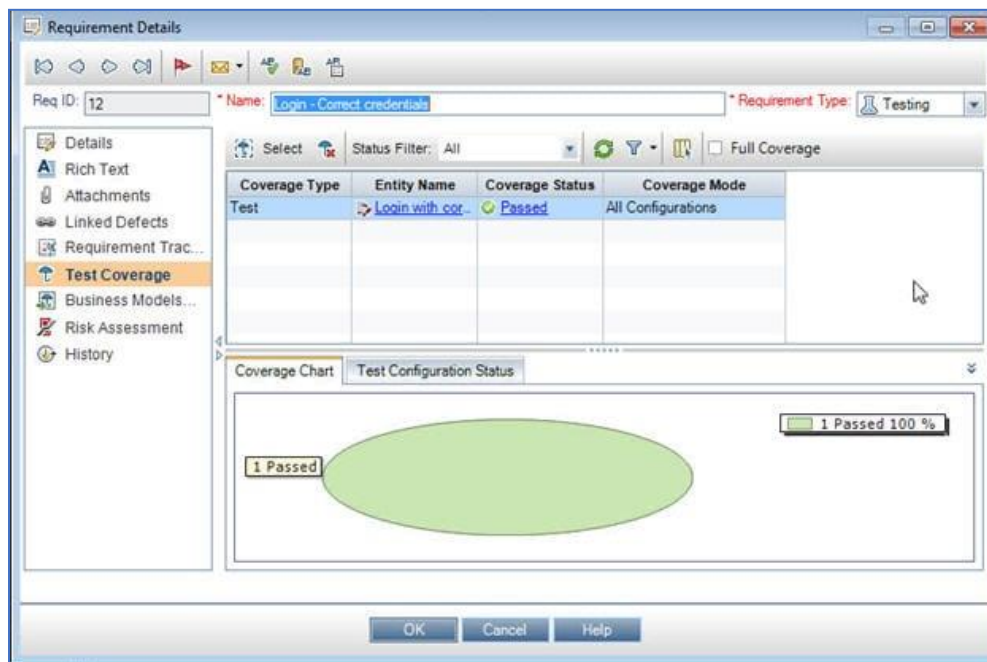
Points to note:
1) The different states of a test case execution can also be customized by the Admin.
2) You can choose to parameterize a manual test by adding parameters to it. When the test is run, the actual test data can be entered.
3) At every step in your ALM, you can send email through it. To do so, find this icon in your ALM window and click on it. For example, in the test plan tab, I am clicking on it.
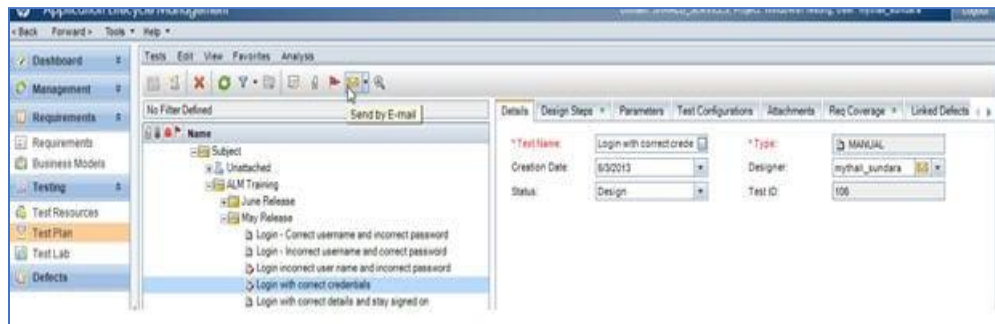
Once you click on it, the following dialog opens. You can enter the required details and send an email.

Defect Management in HPALM

Defects can be:
1. Variation in expected and actual results
2. Documentation errors
3. Un-testable requirements that you want to report and track
4. Environment failures that prevent you from testing

How to add a defect to ALM

Step #1: Login to ALM to the right project and go to "Defects" tab by navigating from the sidebar. The lists of defects under the project are displayed in a list here.

Step #2: Click on "New Defect". Enter the required details. As you can see all the fields in red are mandatory to enter.

Step #3: Choose defect type

Step #4: Choose severity

Step #5: Enter other details and describe the defect in the "Description" box. You can provide attachments. The other tabs in this dialog are for additional details. Again, project specific.

Step #6: This defect will now appear in the list. It has a unique ID to be identified with.

Step #7: You can now change its status.

Step #8: Assign it to another user:

Step #9: Or if this defect is linked to any other defect or you can do so, by choosing "Linked Entities" from the left sidebar and choose the other defect that is causing or affecting this defect.
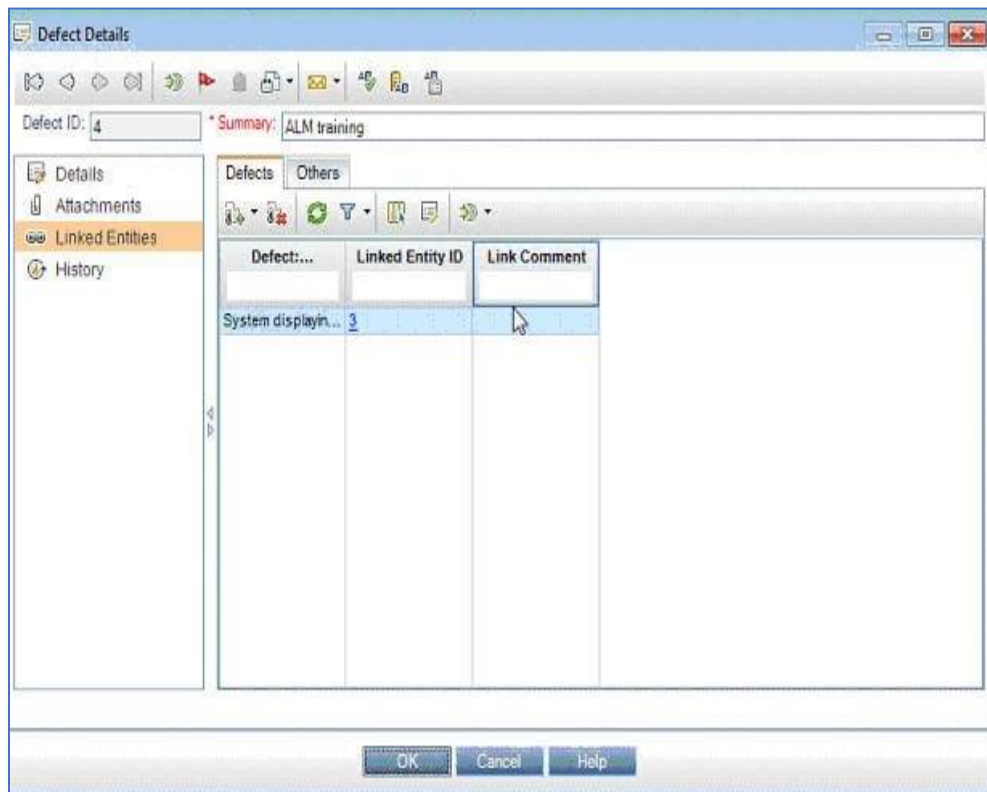

How to link the defect to a test case:

Step #1: Go to Test lab tab and choose the test that failed and the defect is related to that failure.
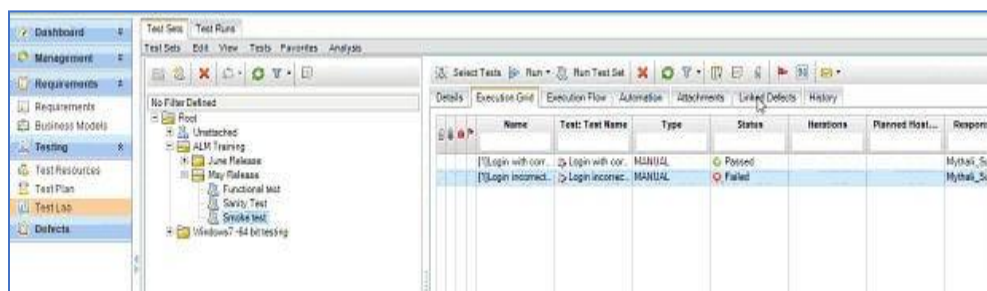
Step #2: Click on "Linked Defects". Here you can either add a new defect and link it by click on this icon: If you do so, follow the steps that you did in the above section and the defect created will get linked.
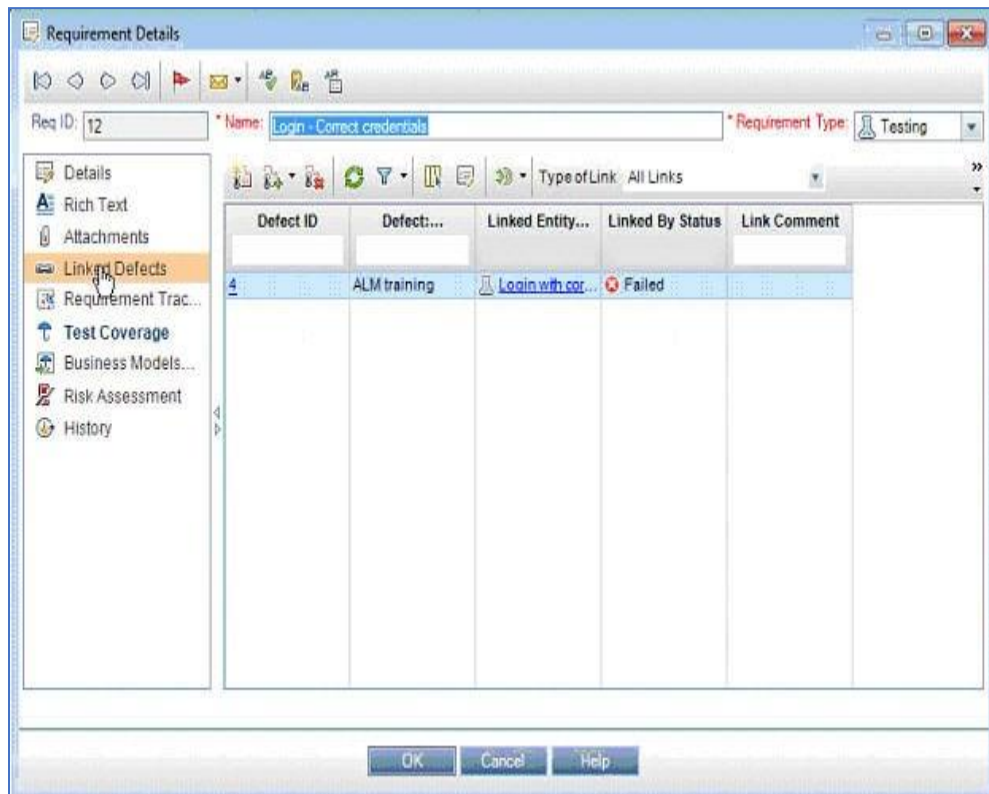
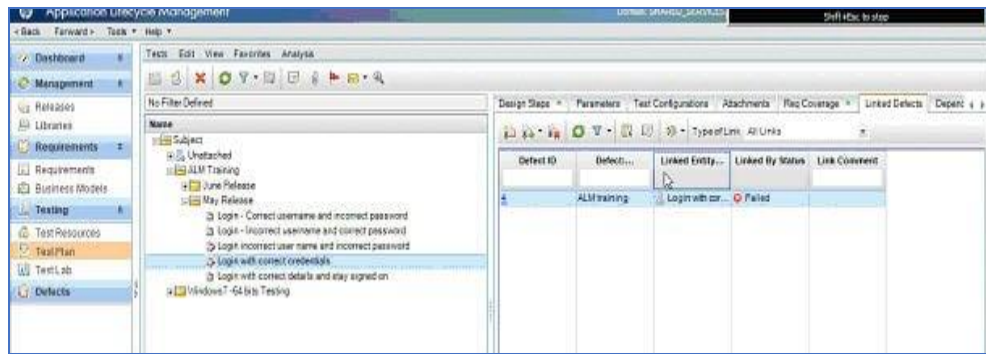**Step #3:** I am going to choose the icon: To link already created defect
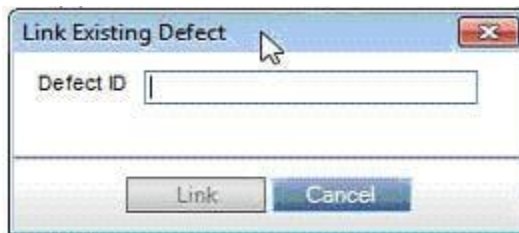
Step #4: Enter the ID and Click "Link". The defect gets linked.

Step #5: The linked defect can be seen in the test plan as well as requirements.

That finishes our end to end flow from Release to defects.

Points to note:
1) We have worked with adding a new cycle under a release in the tutorial number 3 and it is mainly a testing related activity. Similarly, you can add a "New Milestone" signifying a certain step in your Project Management Activities.
2) Even though ALM is test management tool, the development and other support teams also have access to it. One of the reasons is to update the defect status.
3) The attachments for a defect are not mandatory but always provide a screenshot of the error in the attachment whenever applicable and possible.
4) The mandatory fields to be entered during the creation of a defect are defined by your Admin and may differ from project to project.
5) The other drop-down values are also defined by your admin.