Hit the ground running using the IBM Rational Quality Manager (RQM) v2.0

Leveraging the Rational Quality Manager and Rational Functional Tester integration for remote testing, and more

Skill Level: Introductory

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IBM® Rational® Quality Manager solution is the IBM Rational division's most recent quality management environment. Built on the Jazz platform, the Rational Quality Manager tool offers a plethora of new features that help enable you to create test plans, test cases, test scripts, test execution functions, plus defect logging and reporting.

Introduction

The IBM® Rational® Quality Manager solution is IBM Rational division's newest quality management environment. Built on Jazz platform, Rational Quality Manager is a flexible tool that offers a plethora of options. This article will show you how to enable the integration available between the Rational Quality Manager and the IBM® Rational® Functional Tester environments. In addition, you'll get a high level overview of some of the Quality Manager solution's features including creating of test plans, test cases, manual test scripts, test executions, plus defect reporting and generating test reports. (Although this article focuses on the Rational Functional Tester tool integration, the Quality Manager solution also offers integrations with other IBM environments such as these products:

- IBM® Rational® Performance Tester

- Service Test
- Robot
- IBM® Rational® AppScan® Tester Edition
- Other Rational test products

In addition to IBM Rational products, the Rational Quality Manager solution also offers the ability to integrate with other vendor test automation solutions. Moreover, the Rational Quality Manager tool helps enable your team to leverage remote test execution without any performance degradation.

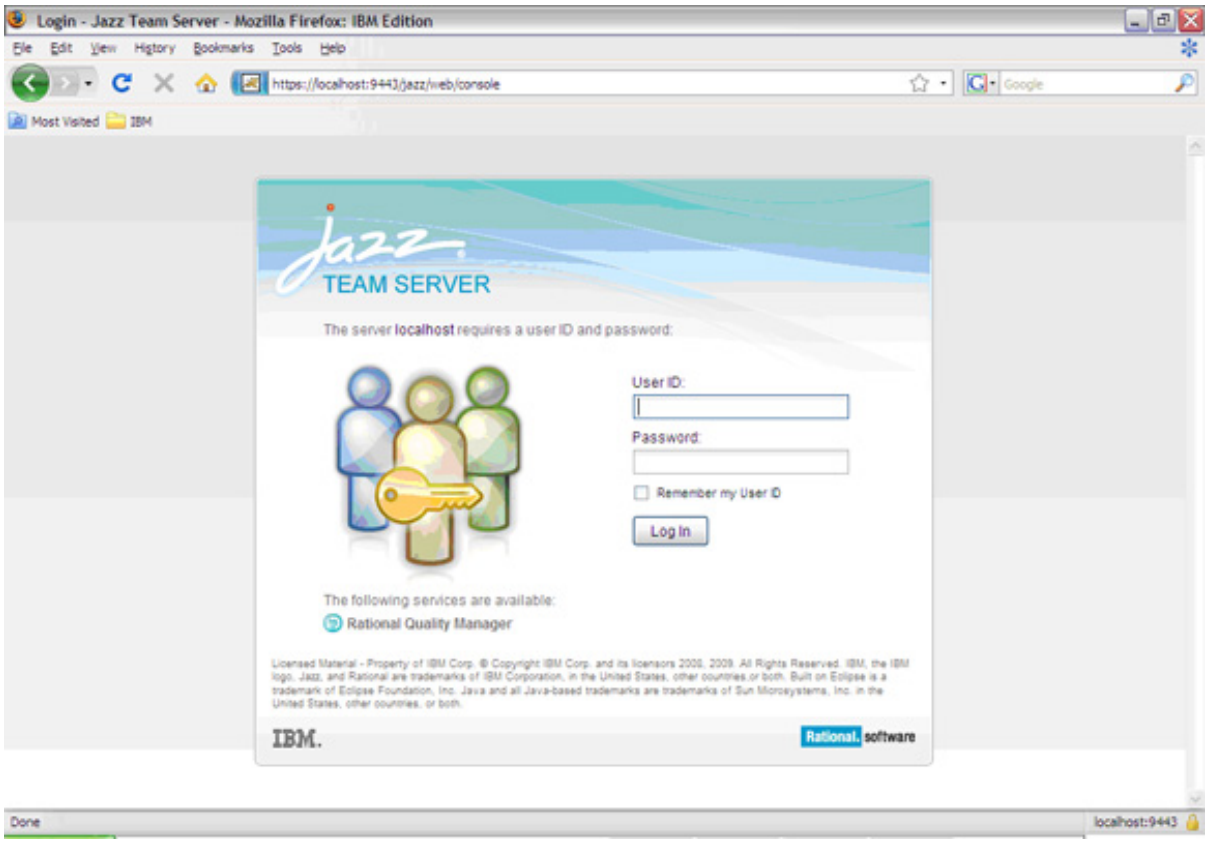
Prerequisites

- IBM® Rational® Quality Manager V 2.0 Express Edition installed.
- IBM Rational Functional Tester v 8.1.0.1 installed. Sample scripts must be created in Rational Functional Tester.

User Administration

First, you need to start the Rational Quality Manager server. To do this, navigate to Start > All Programs > IBM Rational Quality Manager, and click on Start IBM Rational Quality Manager Server. Wait until the server gets started. Once the server gets started, navigate to Start > All Programs > IBM Rational Quality Manager, and click on IBM Rational Quality Manager. You should see a screen as shown below in Figure 1.

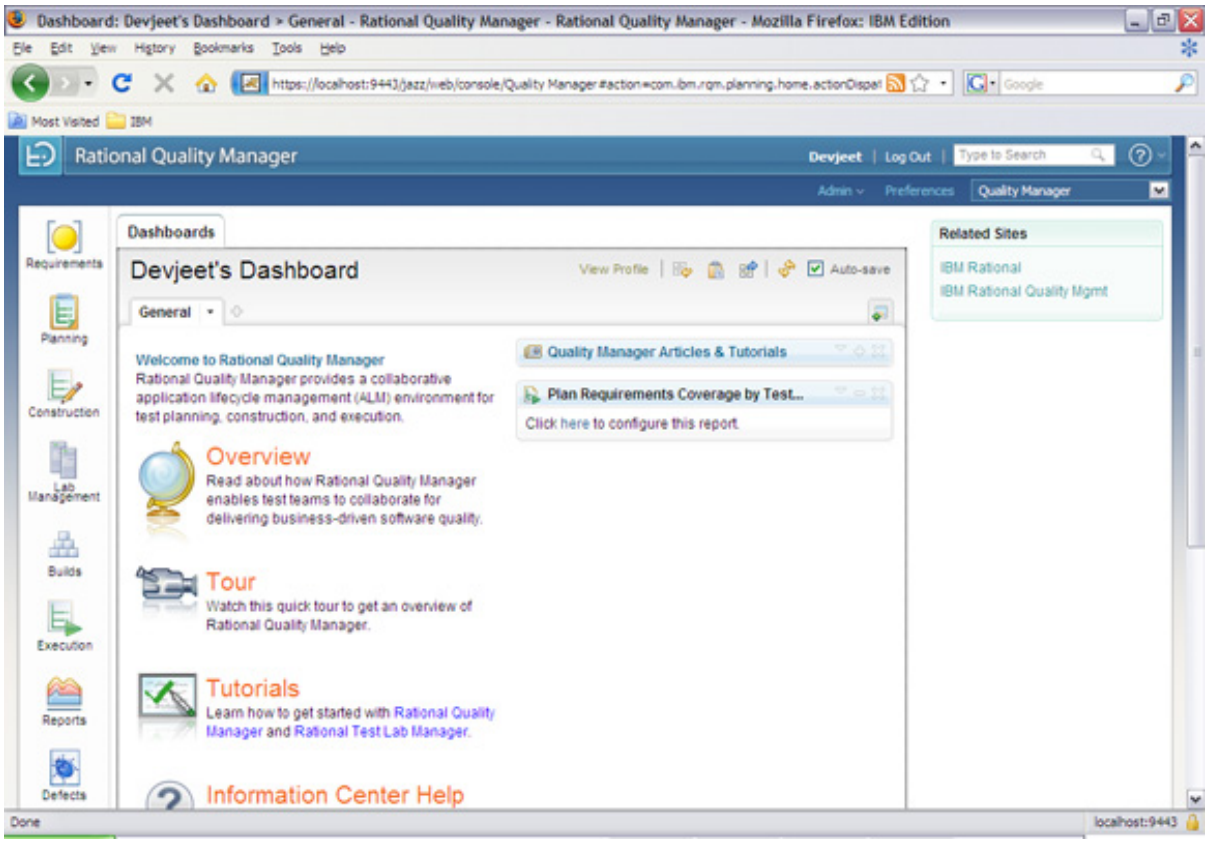
Figure 1. Log in window



Larger view of Figure 1.

Login using the User ID name ADMIN, and the password is ADMIN. Once you are logged in, you will be prompted to set up another User ID and Password with administrator access. Follow the screens to set up a new profile. Once complete, you can see the dashboard view, which is also shown in Figure 2.

Figure 2. Dashboard view

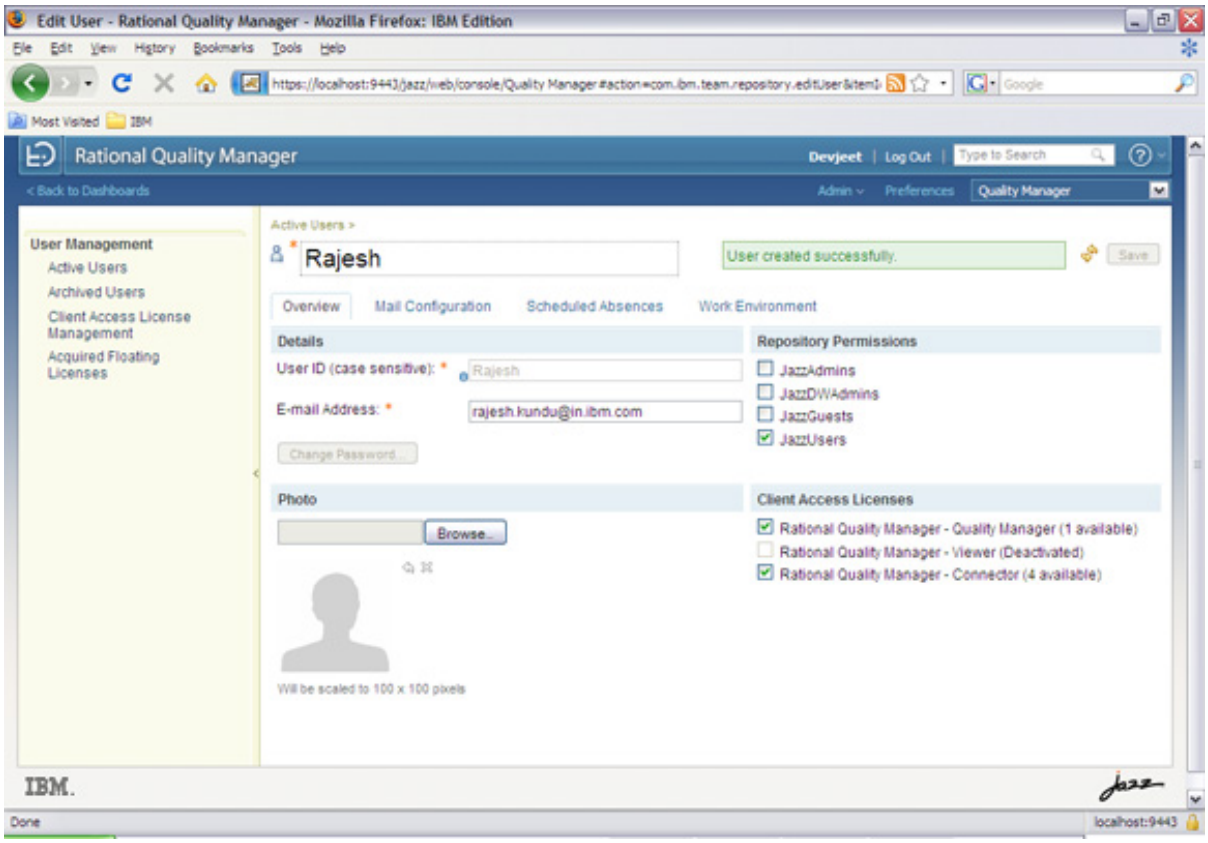


Larger view of Figure 2.

Notice that there are a number of tabs on the left hand side containing Requirement, Planning, Construction, Lab Management, Build, Execution, Reports and Defects tabs. But before proceeding further we need to create some users, project and add the user to the project -- which will essentially cover the administrative tasks necessary to do this.

To do this, click on Admin > Jazz User Administration, then click Create User. Enter your name, User ID and your email address. Check the Jazz Users checkbox in Repository Permissions section and also check the Rational Quality Manager - Quality Manager and Rational Quality Manager - Connector checkboxes in the Client Access Licenses section, and click Save, as shown in Figure 3.

Figure 3. New user window

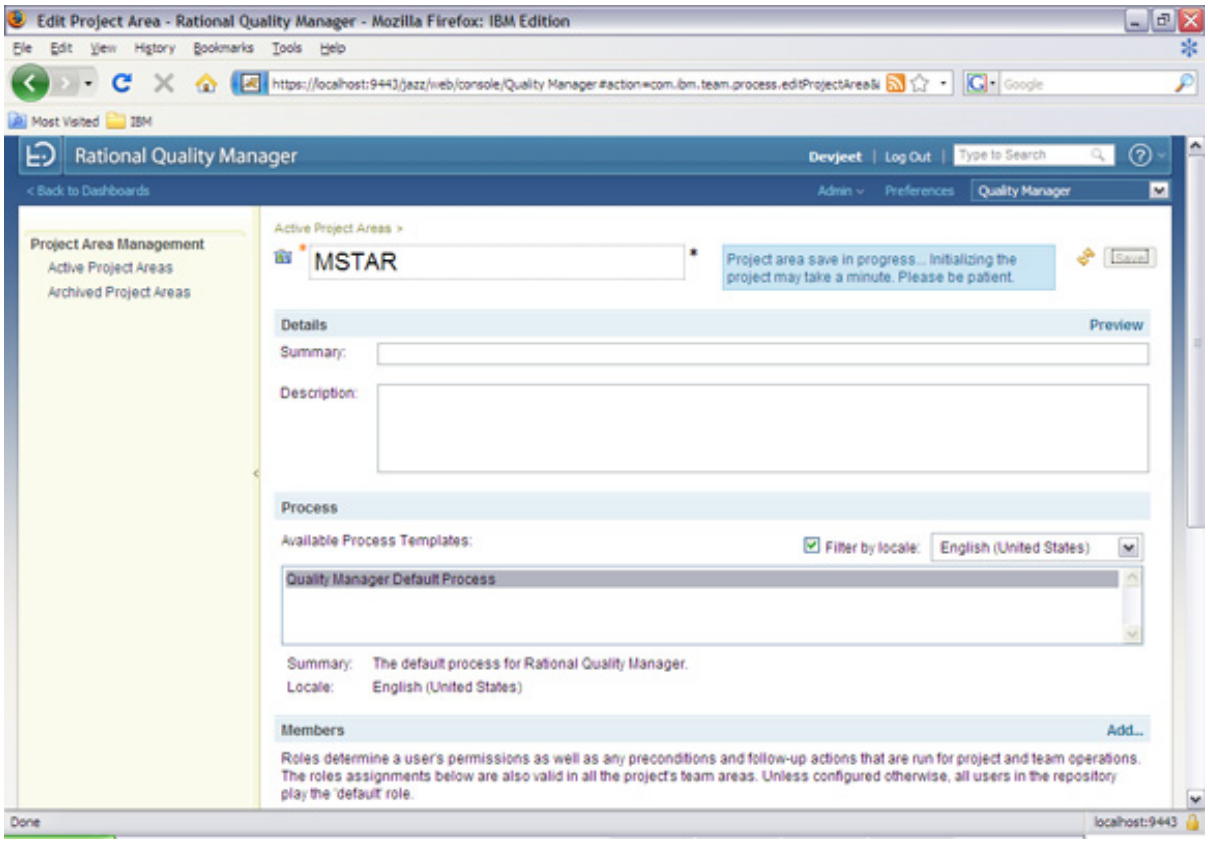


Larger view of Figure 3.

Create project and log in using new user

To create a project and a log in using the new user, start by clicking on Admin > Create Jazz Project Administration. Next, click on the Create Project Area and provide a name for the project. In the Members section, click on Add and search the user by including the first few characters of the name in the Search Text box; now select the name and lick on Add and close. Finally, click Save. If you have setup email setting during installation, proceed with the next screens, otherwise, click Cancel as shown in Figure 4.

Figure 4. New project window



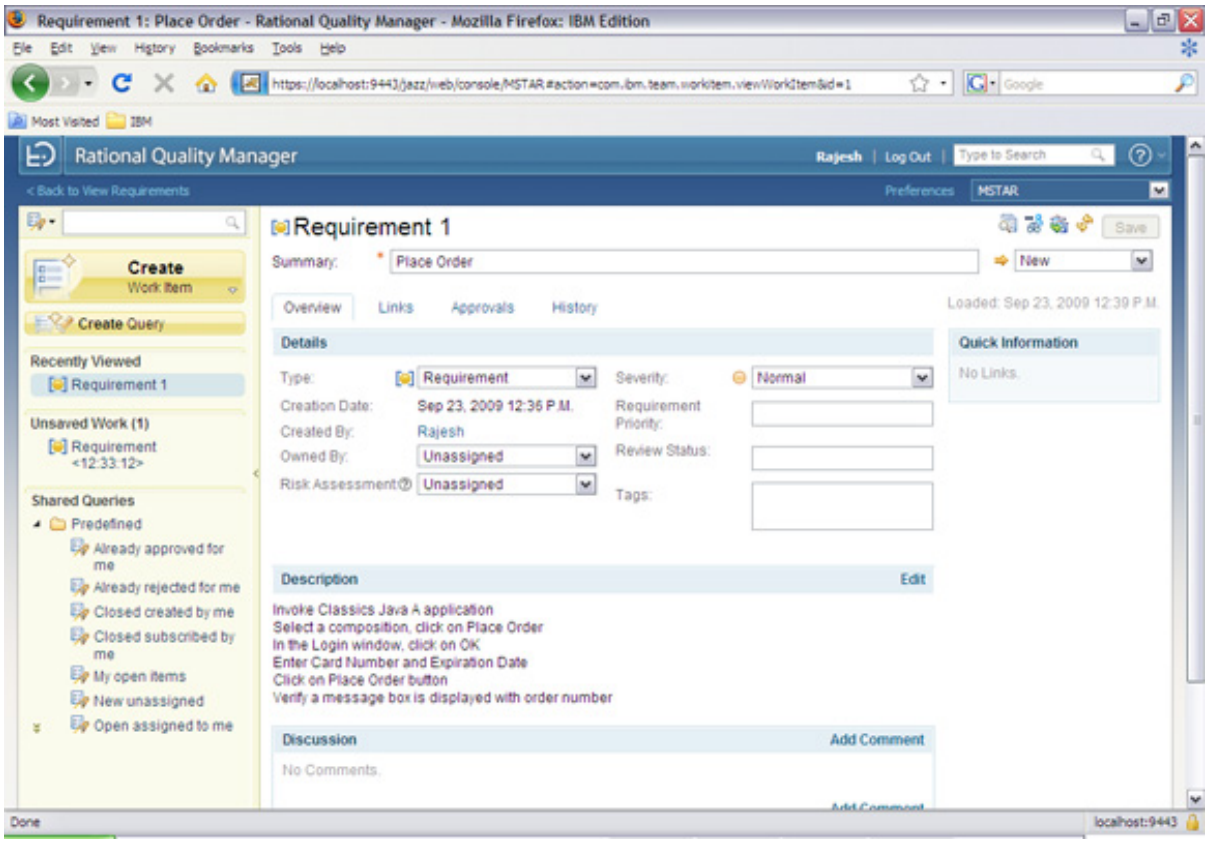
Larger view of Figure 4.

Log out from the ADMIN user. Now log in with the User ID created above. (Remember that your password is the same as your User ID). A dashboard (as shown in Figure 2) will be displayed.

Create requirement

Let's begin with the tabs that are available on the left hand side of your screen, starting with Requirements tab. Requirements should be populated by the business analyst; for simplicity, however, we will create a sample requirement. Move your mouse over the Requirements icon and click Create Requirement. A Requirements form is displayed. Enter your summary, description and click Save, as shown in Figure 5.

Figure 5. Saved requirement



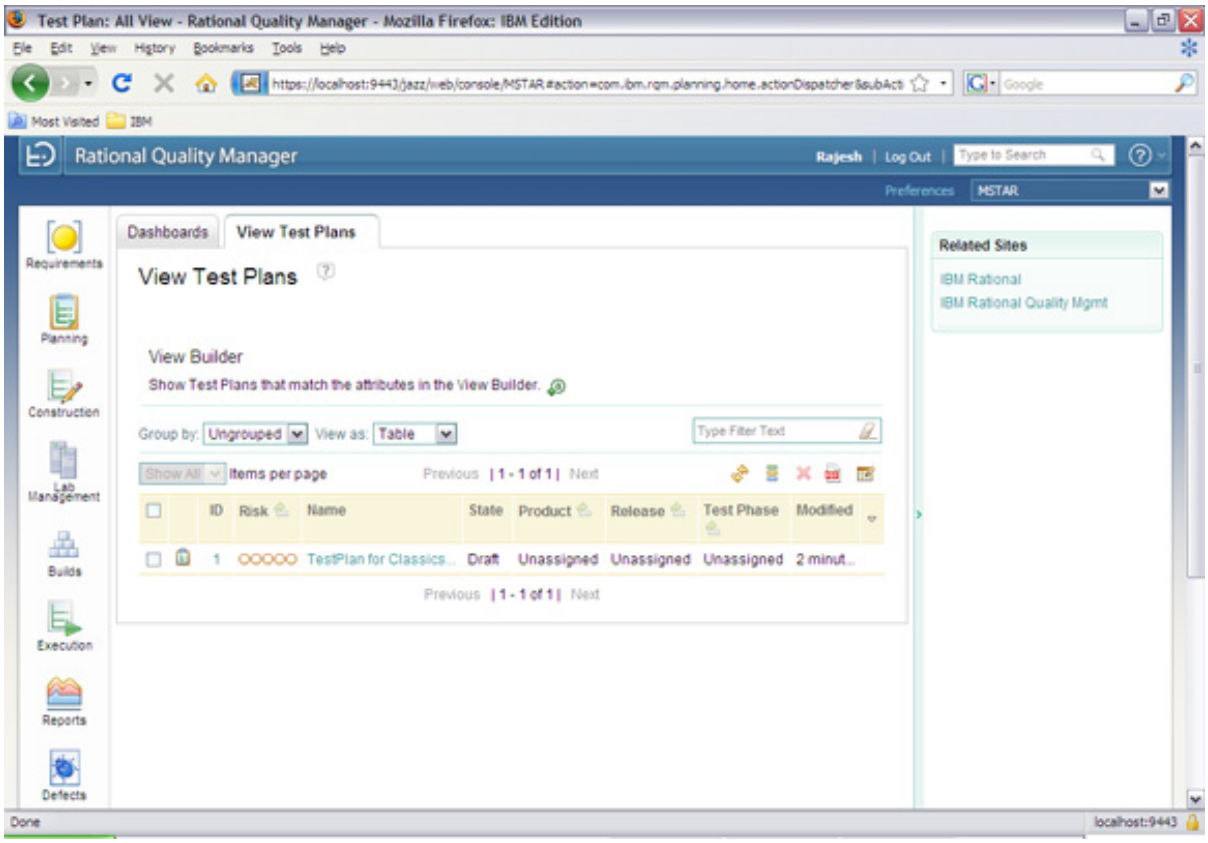
Larger view of Figure 5.

Click on the breadcrumb link to go back to the Rational Quality Manager home page.

Create a test plan

Let's move over to the Planning Tab, where we will create a test plan, which triggers all testing activities. Rational Quality Manager has a number of links within the Test Plan that captures a number of information. Move your mouse over the Planning – Create Test Plan icon. Enter the name of the test plan. You can enter other details, if required, like business objectives, entry criteria, select the requirement. Click the Formal Review link and select a reviewer from the list. Once the relevant information is added, click Save. You can view the test plan by mousing over the Planning button and then clicking on View Test Plan to look inside this function; see Figure 6 for an example.

Figure 6. View Test Plan window

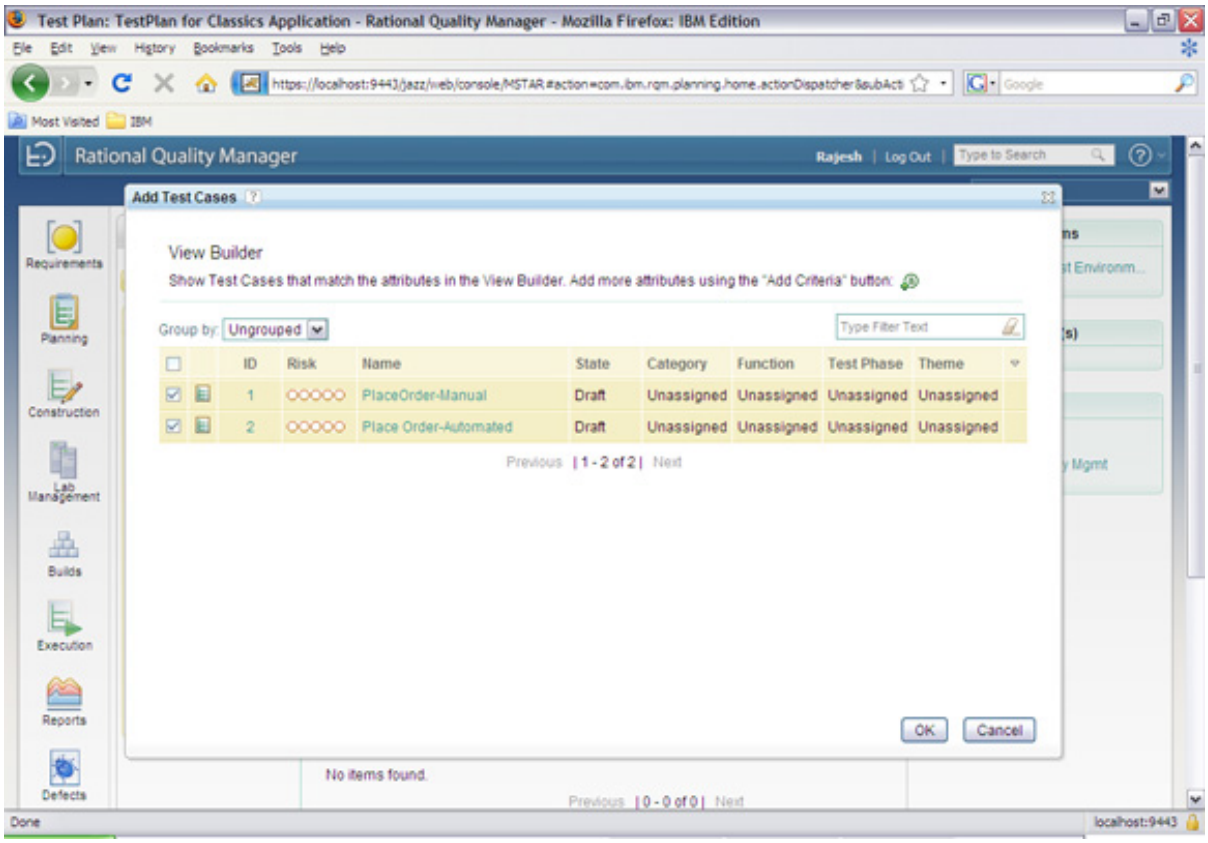


Larger view of Figure 6.

Create test case

Now let's create a test case template of. For simplicity we will create one manual and one automated test case. Hover your mouse over the Construction icon and click Create Test Case. Enter name of the test case and click Save. Once the two Test Case templates have been created, go to the Planning tab, and click View Test Plan. Click on the name of the Test Plan. Click on the Test Cases link in Table of contents section. Click on the + (plus) icon to add test cases. The two test cases should be displayed. Check the two test cases; see Figure 7 for an example of this process.

Figure 7. Adding test cases to your test plan



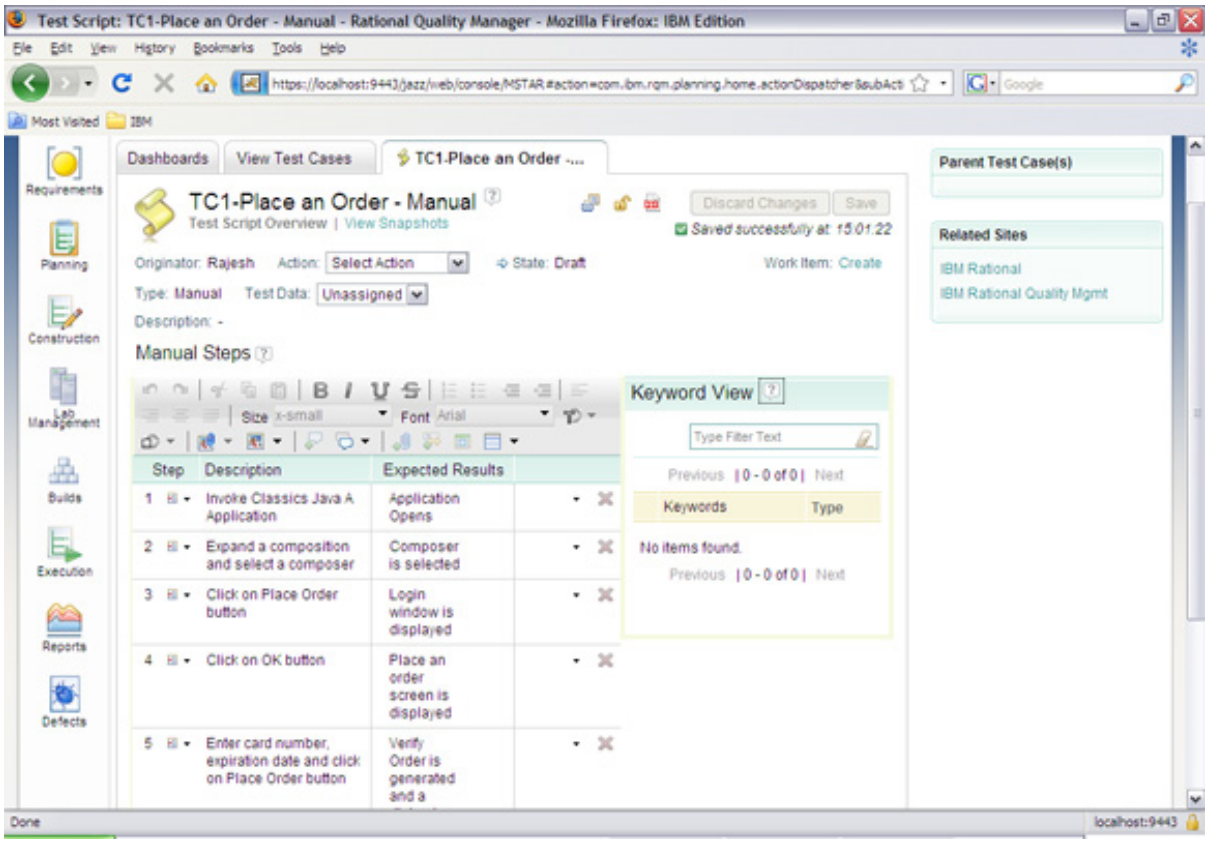
Larger view of Figure 7.

Click OK and save your test plan. Later we will revisit these test cases to attach test scripts and create a test execution record.

Create test script

We will begin with creating two sample test scripts, where one is manual and the other is automated. To create a manual test script, hover the mouse over the Construction icon and click Create Test Script. The create test script tab is displayed. Enter the name of the test script; by default, the notice type is set to manual. We will retain this for the first test script. Click the "Click to add step" link in the Manual Steps section. The Rational Quality Manager v2.0 tool uses a format to enter a step Description and the Expected Results section is listed side by side the Description area. Enter your Step, Description and the Expected Results. Use a reporting step at the end of the script (which can be selected by clicking on the step link and selecting from the dropdown list). Once complete, save your script, which will look similar to what is shown in Figure 8.

Figure 8. Saved manual test script



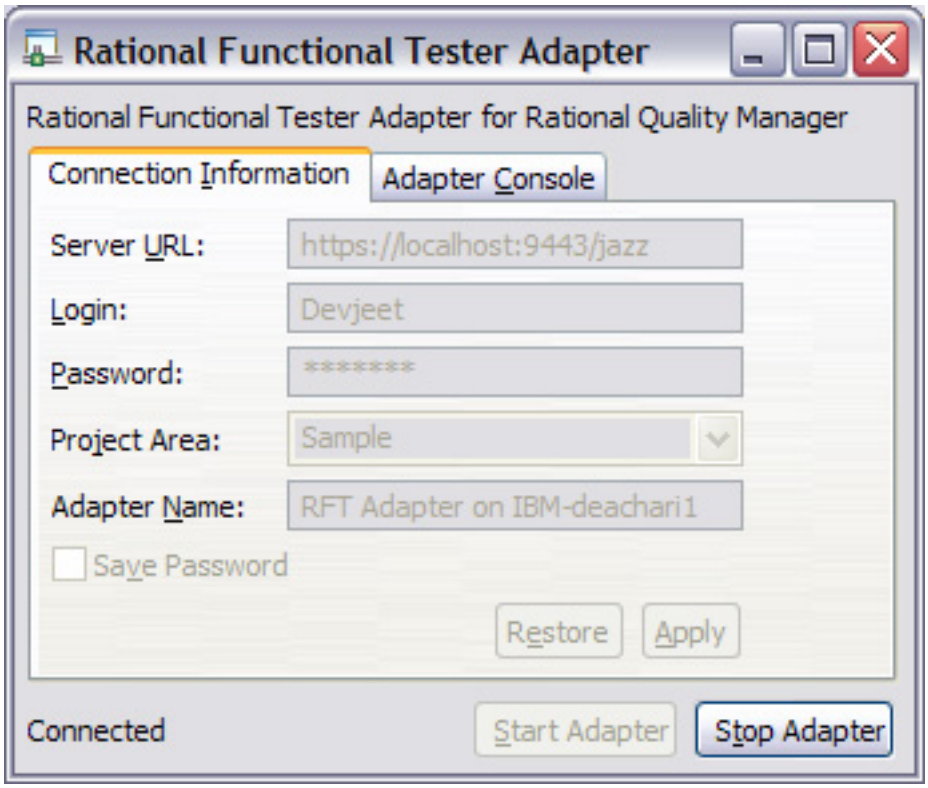
Larger view of Figure 8.

Now we need to create an automated test script. This test script will be created in the Rational Functional Tester environment. If you are unfamiliar to creation of test scripts in Rational Functional Tester check out some of the Web resources available at the end of this article. For the sake of simplicity, the assumption is that there is at least one automated test script in Rational Functional Tester in your local drive. In order for us to access this script from the Rational Quality Manager solution, you need to configure the Rational Quality Manager adapter for the Rational Functional Tester tool. Navigate to Start > All Programs > IBM Software Delivery Platform > IBM Rational Functional Tester >Adapter to Rational Quality Manager, and click the Configure Adapter. Enter the following information:

- Server URL: `https://localhost:9443/jazz` (Considering you are having Rational Quality Manager on local system)
- Login: Enter your log in credential
- Password: Same as log in
- Project Area: Select the appropriate project from the dropdown
- Adapter Name: Will be pre-populated

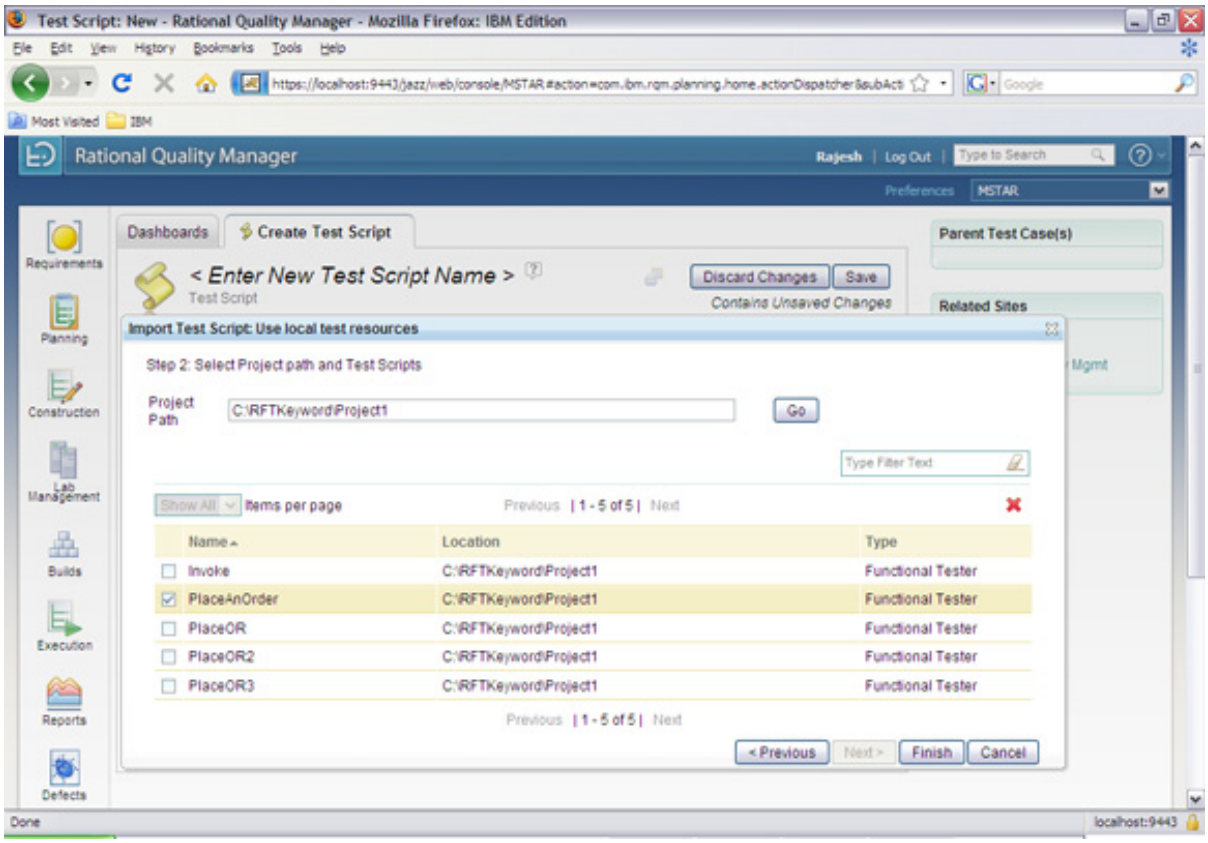
You need to test the connection, and this can be done by clicking the Start Adapter. Once you see the message connected, the adapter is configured, as shown in Figure 9.

Figure 9. Configuring Rational Functional Tester adapter for the Rational Quality Manager solution



Navigate to Rational Quality Manager, mouse over the Construction icon and click on Create Test Script. Enter the test script name, select Functional Tester from the Type dropdown menu. Click the Radio button and select "Use test resources that are local to a test machine". Click the Select Adapter button. A window is displayed where the Adapter details are displayed. Click the Next link. Paste the path of your project in the textbox and click the Go button. The list of test scripts within that project is displayed, and you can check the one needed, as shown in Figure 10.

Figure 10. Importing Rational Functional Tester script into the Rational Quality Manager solution



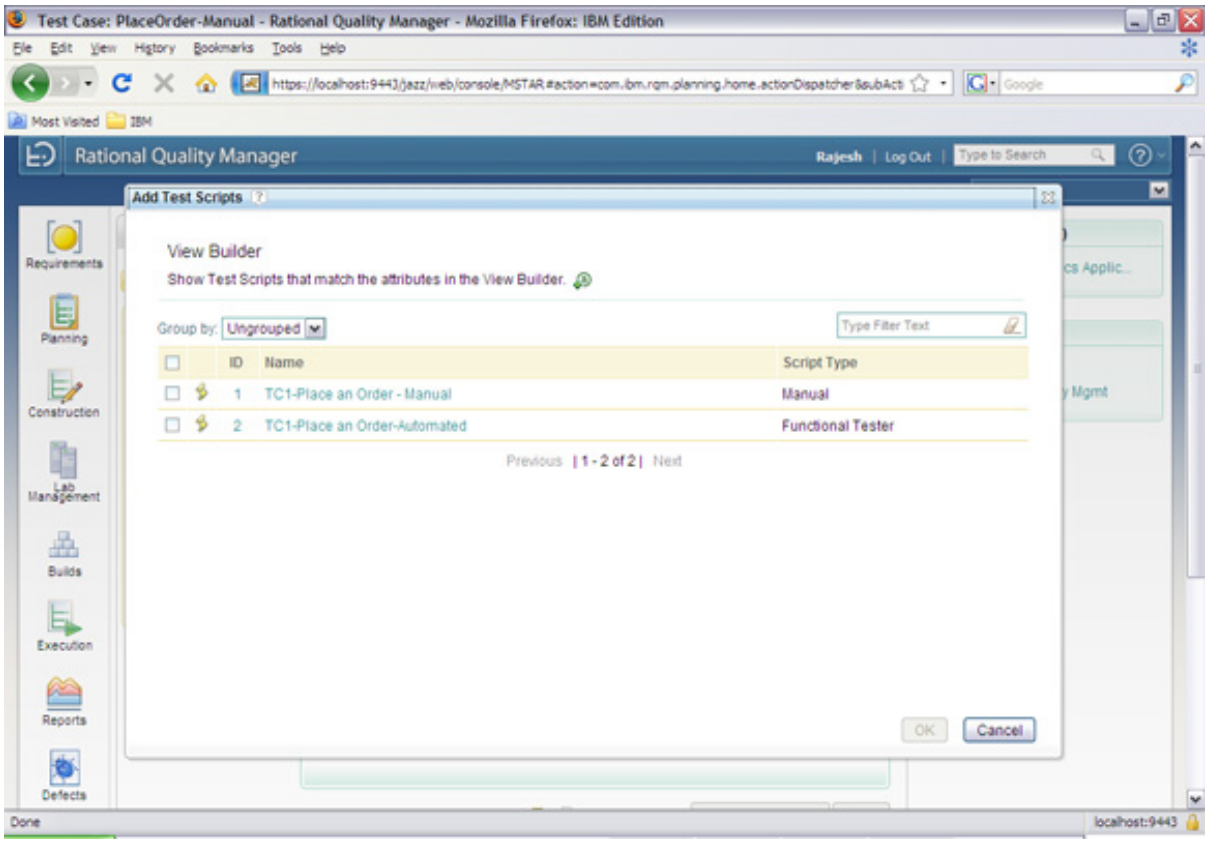
Larger view of Figure 10.

Click the Finish button and save the test script.

Execute test case and view test log

Before we proceed to executing the test cases, we have some tasks pending. One is to associate the test scripts to test cases, and the other to define the test execution record. To do so, start by mousing over the Construction tab and click on View Test Cases. The two test cases should be visible. Click on the manual test case link first. Navigate to the Test Script section and click the "+" symbol (Add existing test scripts). A light window is displayed. The two scripts will be displayed, select the checkbox for a manual test script as shown in Figure 11.

Figure 11. Associating a test script to a test case

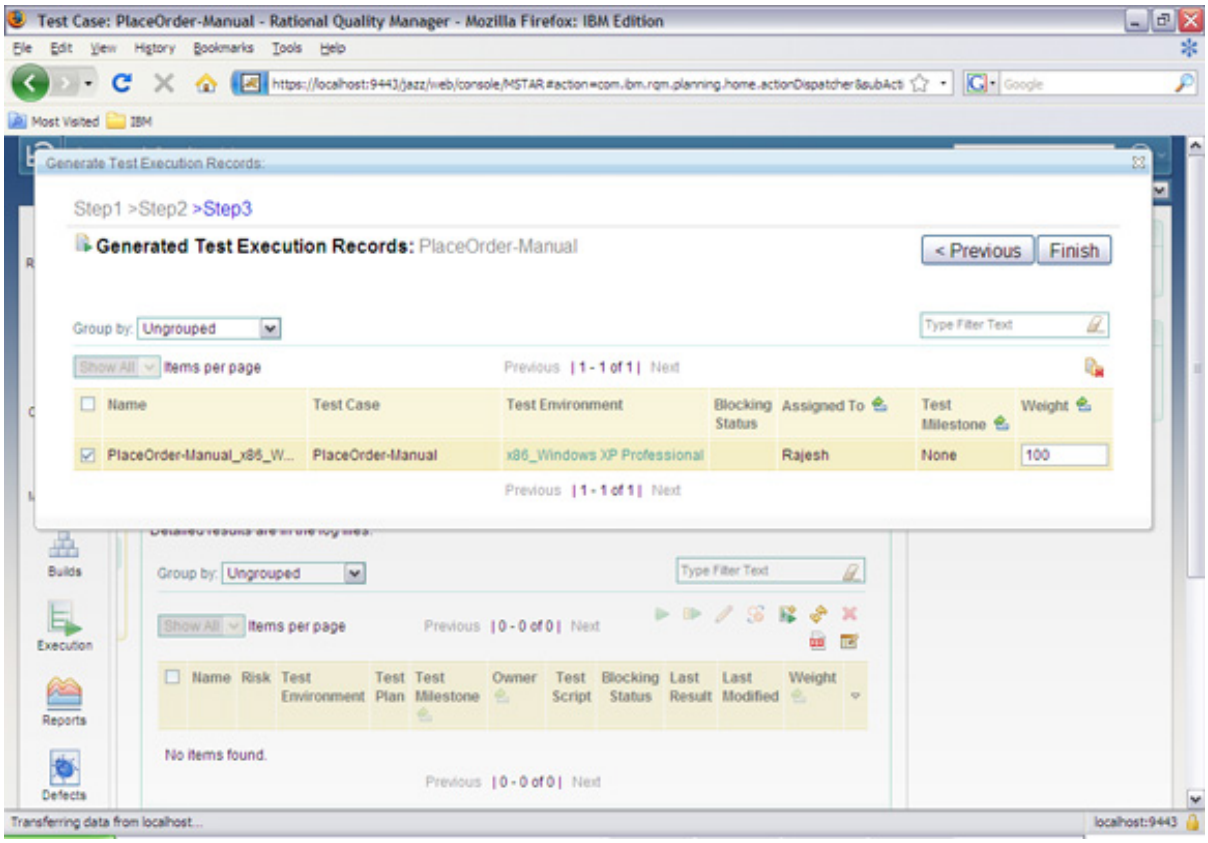


Larger view of Figure 11.

Click OK and Save.

Now, click on the Test Execution Records link. Click on the icon "Generate New Test Execution Records" (this icon is available below Type filter text box). A light window is displayed. Select the Test Plan from the dropdown menu. Select the environment, click Next and select the checkbox created related to selections made in environment screen, click on the Next button and select the checkbox. This is shown in Figure 12.

Figure 12. Create new test execution record

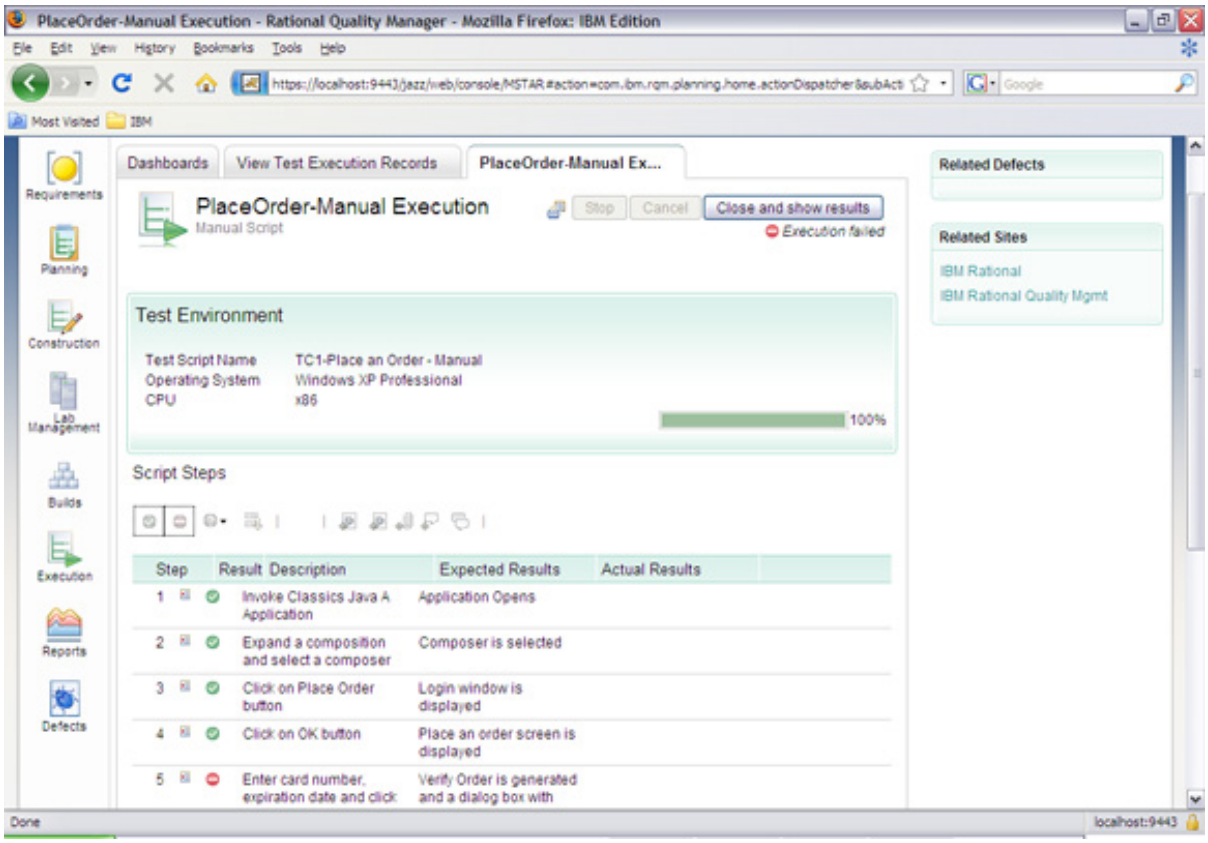


Larger view of Figure 12.

Lastly, click Finish and save the test case. Perform the same steps for the automated test case.

At this point you are ready to begin execution. Mouse over the Execution tab and click the View Test Execution Record. The two execution records created will be displayed. Select on in the manual test execution record box. Observe that the Run button gets enabled. Click the Run button to on. The execution window is displayed. Now you need to perform the steps in the application under test as per the test steps, selecting the appropriate buttons for Pass, Fail or Inconclusive. Once the test execution is completed, you can see the verdict as shown in Figure 13.

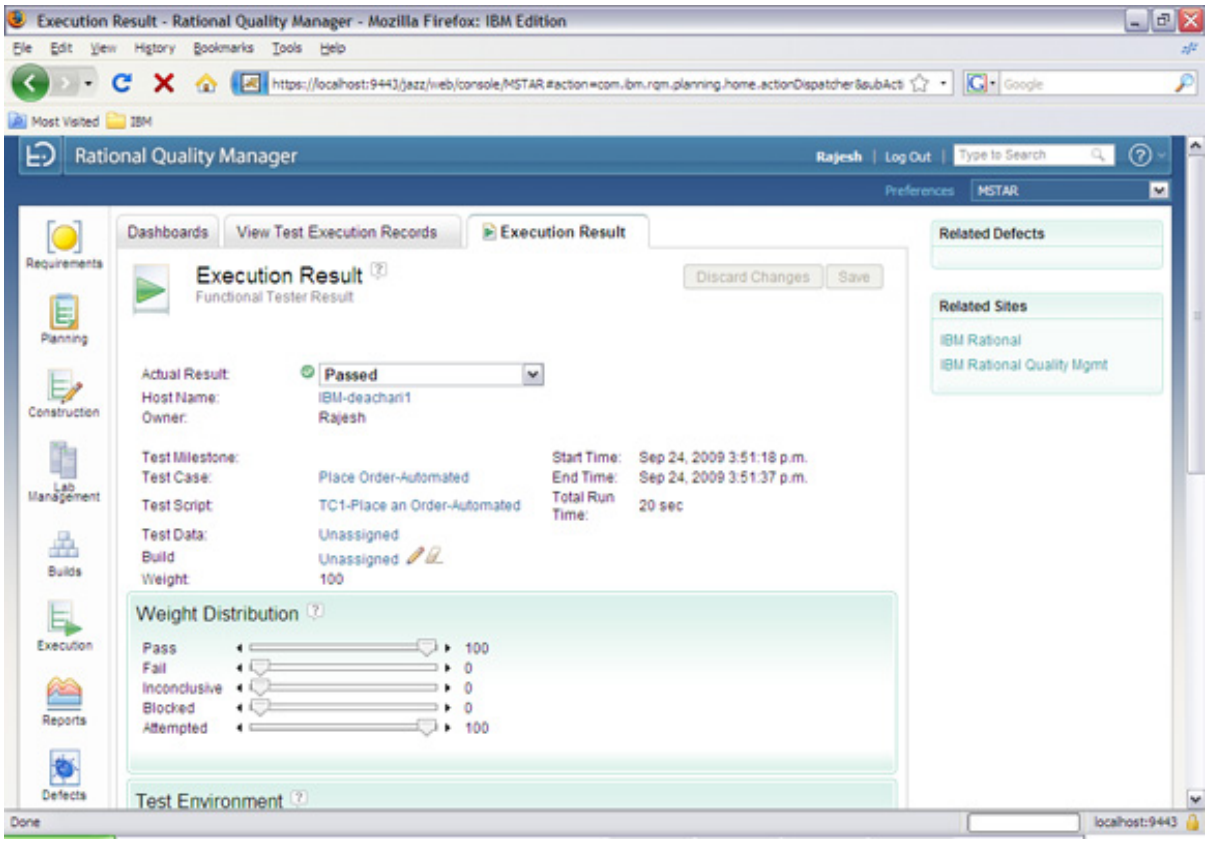
Figure 13. Manual test execution window



Larger view of Figure 13.

Execute the automated test case next. The test is executed, whereby Rational Functional Tester script is invoked from the Rational Quality Manager tool. Once the test is executed, click Close and View Results. The Test Results Page is displayed, as illustrated in Figure 14.

Figure 14. Automated test execution window

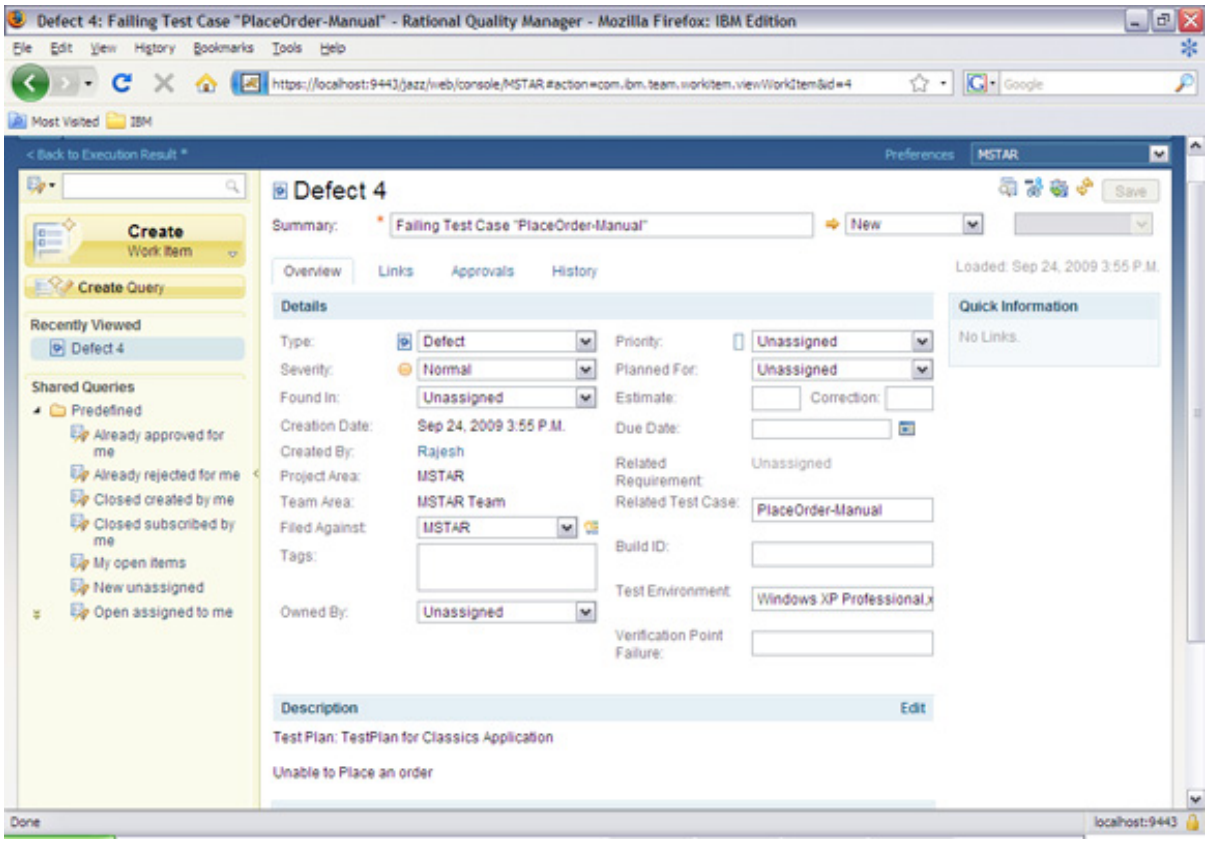


Larger view of Figure 14.

Submit defect

When you view the test log and you find that a test has failed, it is possible to submit defects at that stage. Simply mouse over the Execution icon and click on View Execution Results. Click on the name field to view the execution result. Scroll down to the defect section and click the Add New Defect icon. The defect form is displayed on a light view window. Enter the relevant details like Summary, Description, Severity, etc and click Save. Click on the ID number generated to view the defect; see Figure 15 for an example.

Figure 15. Saved defect



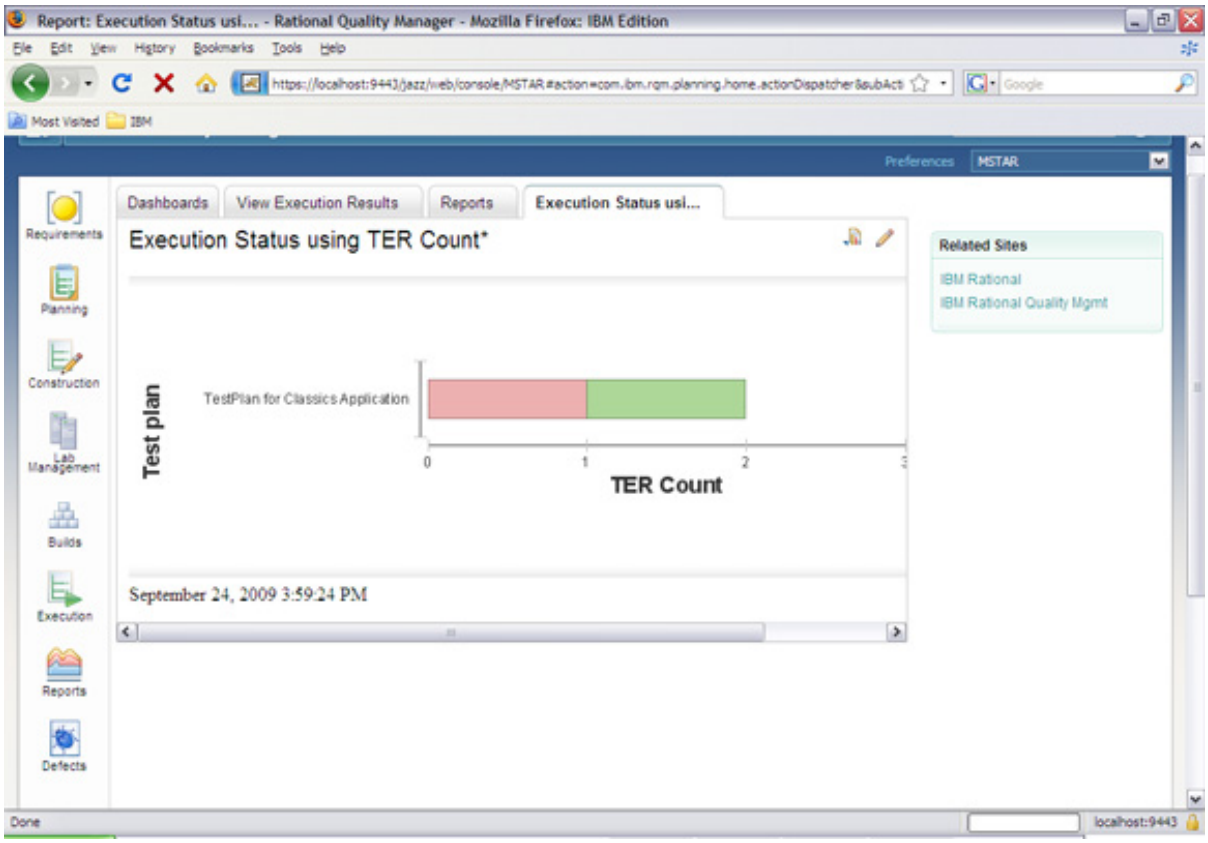
Larger view of Figure 15.

Click Back to Execution Record using the breadcrumb link and Save your Test Result.

View reports

The final part of a test management solution deals with generation of various test reports that allows project stakeholders to understand the testing progress, the health of the application, and other important details. To start this, mouse over the Reports tab and click the All Reports tab. The Rational Quality Manager solution allows you to view reports pertaining to defects, execution, lab manager, requirements, scorecard, summary and test cases. Let's start by checking out the "Execution Status using TER Count". Click the link "Execution Status using TER Count". On the next page, select all the test cases in the Test Case list box and click Run. The summary is displayed in graphical format showing the test execution status based on the test execution results. For an example, see Figure 16.

Figure 16. Test execution summary report



Larger view of Figure 16.

Click Save, you can save this query for later viewing.

Summary

Now that you have followed the steps outlined in this article, you have successfully accelerated your introduction to the Rational Quality Manager tool. With this strong beginning, you can begin leveraging the numerous benefits available to your development process when you use the Rational Quality Manager solution — the topics covered in this article are a small subset of the features that this solution contains. Stay tuned for new articles that will show you other exciting opportunities that the Rational Quality Manager can offer your organization.

Resources

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Devjeet Achari has 5 years testing experience with the IBM Corporation. Achari is certified in the Rational Functional Tester and the Rational Performance Tester products, plus the Rational Unified Process. In addition, Achari has presented papers at Rational software conferences.

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