

HP Sprinter

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Windows ®

User Guide

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Table of Contents

Welcome to HP Sprinter	11
HP Sprinter User Guide Overview	11
How Do I Find the Information That I Need?	12
Additional Online Resources	14
Chapter 1: Using Sprinter - A Story	15
Using Sprinter for the First Time	15
Mirroring Tests	37
Chapter 2: Sprinter at a Glance	43
Concepts	
Sprinter Overview.....	44
How User Information is Maintained	47
Tasks	
How to Get Started with Sprinter.....	50
Reference	
Welcome Dialog Box.....	53
ALM Connection Dialog Box	56
Main Window.....	57
Settings Dialog Box.....	60
Chapter 3: Creating Tests and Business Components	71
Concepts	
Test and Component Authoring Overview	72
Tasks	
How to Author a Test or Component	73

Reference

Plan Area.....78
Open HP ALM Test/Business Component Dialog Box82
Save/Save As Dialog Box.....84
Check Out Dialog Box.....87
Check In Dialog Box88
Definitions Group (Test/Component Tab)89
Steps Tab.....99
Capture Sidebar113
Captured Steps Sidebar115

Chapter 4: Running Tests..... 119

Concepts

Tests with Steps120
Exploratory Tests.....121
Power Mode Overview121

Tasks

How to Run a Manual Test in Sprinter122
How to Run an Exploratory Test in Sprinter131

Reference

Run Setup Area133
Open Dialog Box143
Run Setup Definitions Group.....145
Run Control Sidebar150
Steps Sidebar157
Generate Test Dialog Box.....170
Running Tests in Power Mode172

Chapter 5: Detecting and Submitting Defects, and Using Tools..... 177

Concepts

Detecting and Submitting Defects Overview.....178

Tasks

How to Detect and Submit a Defect183

Reference

Tools Sidebar186
Annotation Tools Sidebar.....196

Chapter 6: Run Results	201
Concepts	
Run Results Overview	202
Tasks	
How to Review Run Results	203
Reference	
Results Group	207
Storyboard Window	215
Chapter 7: Power Mode	221
Concepts	
Power Mode Overview	222
Tasks	
How to Prepare a Test to Run in Power Mode	226
Reference	
Power Mode Group	229
Application Pane (Power Mode Group)	231
Chapter 8: Data Injection	247
Concepts	
Data Injection Overview	248
Tasks	
How to Inject Data into your Application	251
Reference	
Data Injection Pane (Power Mode Group)	253
Data Injection Sidebar	257
Chapter 9: Macros	261
Concepts	
Macros Overview	262
Tasks	
How to Record and Run Macros	263

Reference

Macros Pane (Power Mode Group)265
Macros Sidebar266

Chapter 10: Scanners273

Concepts

Scanners Overview274

Tasks

How to Scan Your Application For Potential Defects277
How to Add or Remove Words From a Dictionary278
How to Create a Custom Scanner280

Reference

Scanners Pane (Power Mode Group) / Scanner Settings Dialog Box 281
Scanners Sidebar286
Scan Results Viewer291

Chapter 11: Mirroring Tests.....295

Concepts

Testing on Multiple Machines - Overview296
Rules Overview301

Tasks

How to Prepare a Test for Mirroring306
How to Run a Test with Mirroring308
How to Resolve Differences During a Run312
How to Handle Replication Errors During a Run.....315

Reference

Mirroring Pane (Power Mode Group)317
New Machine/Machine Details Dialog Box319
Mirroring Rules Pane (Power Mode Group)328
Health Console.....329
Sprinter Agent333
Machines Sidebar333
Machines Viewer339
Differences Viewer.....341
Rules Manager Dialog Box347
Rule Wizard - Rule Details Page349

Appendix A: Using Web Extensibility Packages.....	361
Web Extensibility Package Content	362
Installing a Web Extensibility Package	362

Table of Contents

Welcome to HP Sprinter

Sprinter is HP's solution for manual testing. Sprinter provides advanced functionality and tools to make manual testing more efficient and effective.

This chapter includes:

- ▶ HP Sprinter User Guide Overview on page 11
- ▶ How Do I Find the Information That I Need? on page 12
- ▶ Additional Online Resources on page 14

HP Sprinter User Guide Overview

This user guide provides both basic and in-depth information of all the functionality available in HP Sprinter.

- ▶ To read a user story about working with Sprinter, see "Using Sprinter - A Story" on page 15.
- ▶ For an overview of Sprinter features see "Sprinter Overview" on page 44.
- ▶ For an overview of the documentation structure, see "How Do I Find the Information That I Need?" on page 12.



How Do I Find the Information That I Need?



Within this guide, each subject is organized into topics. A topic contains a distinct module of information for that subject.

This structure is designed to create easier access to specific information by dividing the documentation into the different types of information you may need at different times.

The topic types used in this guide are described in the following table. The topic types are differentiated visually using icons:

Topic Types

Topic Type	Description	Usage
Concepts 	General Concepts. Background, descriptive, or conceptual information.	Learn general information about what a feature does. Learn why or when you may want to use the feature.
Tasks 	Instructional Tasks. Step-by-step guidance to help you work with the application and accomplish your goals. Some task steps include examples, using sample data. Task steps can be with or without numbering: <ul style="list-style-type: none">➤ Numbered steps. Tasks that are performed by following each step in consecutive order.➤ Non-numbered steps. A list of self-contained operations that you can perform in any order.	<ul style="list-style-type: none">➤ Learn about the overall workflow of a task.➤ Follow the steps listed in a numbered task to complete a task.➤ Perform independent operations by completing steps in a non-numbered task.

Topic Type	Description	Usage
Reference 	General Reference. Detailed lists and explanations of reference-oriented material.	Look up a specific piece of reference information relevant to a particular context.
	User Interface Reference. Specialized reference topics that describe a particular user interface in detail. Pressing F1 in the product area generally open the user interface topics.	Look up specific information about what to enter or how to use one or more specific user interface elements, such as a window, dialog box, or wizard.
Troubleshooting and Limitations 	Troubleshooting and Limitations. Specialized reference topics that describe commonly encountered problems and their solutions, and list limitations of a feature or product area.	Increase your awareness of important issues before working with a feature, or if you encounter usability problems in the software.

Note: The *HP Sprinter User Guide* does not contain any index entries. Use the **Search** functionality to find all the information on a specific topic.

Additional Online Resources

Troubleshooting & Knowledge Base accesses the Troubleshooting page on the HP Software Support Web site where you can search the Self-solve knowledge base. The URL for this Web site is <http://h20230.www2.hp.com/troubleshooting.jsp>.

HP Software Support accesses the HP Software Support Web site. This site enables you to browse the Self-solve knowledge base. You can also post to and search user discussion forums, submit support requests, download patches and updated documentation, and more. Choose **Help > HP Software Support**. The URL for this Web site is www.hp.com/go/hpsupport.

Most of the support areas require that you register as an HP Passport user and sign in. Many also require a support contract.

To find more information about access levels, go to:

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1

Using Sprinter - A Story

This chapter provides a general overview of how to work with Sprinter, in a user-story form. The purpose of this story is to introduce you to Sprinter's features so that you can quickly get started using Sprinter. As you work with Sprinter you can then explore its features in depth as needed.

This story is intended to be read in full and does not require that you have the program open as you read. It is not a step-by-step guide to working with Sprinter, and does not provide full coverage of the features. Other chapters of this guide describe Sprinter features in depth and are designed to be read as needed, while you are working with the application.

Using Sprinter for the First Time

Today is the first day you are using Sprinter to test your application. You are testing a travel agency's Web application that allows users to find and book domestic and international flights.

You will be running an ALM test, but you know you can load your ALM tests in Sprinter, so you decide to run your test completely through Sprinter.



You sit down at your computer, double-click the **Sprinter** icon on your desktop, and Sprinter opens.

Connect to ALM



To start using Sprinter to run ALM tests, you need to connect Sprinter to ALM. You click the ALM Connection button in the main window to configure your connection.

You enter the necessary information. Since you always work on the same ALM server, you select the **Reconnect on startup** check box.

Create a Test



You enter **Plan** Mode. This mode lets you manually create or edit a test.



Click the **New** button in the Tests and Components list to create a new ALM test.

In the **Tests** tab, in the **Details** pane, provide information for the test, such as a description and comments. Add an attachment and parameters that will be used for the test.



In the **Steps** tab, click the **Add** button to add a test step. You provide a description, expected results, and other relevant information in the step's fields. You format the text in these fields using rich-text capabilities, using the formatting tools in the ribbon. You add an attachment and a screen capture for this step. Insert a parameter that you defined in the **Test** pane, into a step.

Repeat the above to create multiple steps.



Click the **Save** button to save the test in ALM.

Open Your Test and Prepare it for a Run



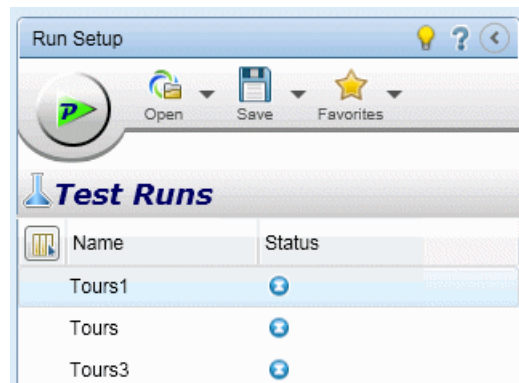
After you create a test in **Plan** mode, open ALM and add it to a test set in the **Test Lab** module. Return to Sprinter and switch to **Run** Mode.



Click the **Open** button in the Run Setup area to open your ALM test. You see the Test Sets tree and the information from the Execution tab. You select the tests you want to run and open them.

<ul style="list-style-type: none"> Root <ul style="list-style-type: none"> Unattached Flight_book Flight_buy Flight_find Flight_select <ul style="list-style-type: none"> Find NY SF 	<table border="1"> <thead> <tr> <th>Name</th> <th>Test: Test Name</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> [1]Tours</td> <td>Tours</td> <td>No Run</td> </tr> <tr> <td><input type="checkbox"/> [2]Tours</td> <td>Tours</td> <td>No Run</td> </tr> <tr> <td><input type="checkbox"/> [1]Tours_select1</td> <td>Tours_select1</td> <td>No Run</td> </tr> <tr> <td><input type="checkbox"/> [1]Tours_select2</td> <td>Tours_select2</td> <td>No Run</td> </tr> </tbody> </table>	Name	Test: Test Name	Status	<input type="checkbox"/> [1]Tours	Tours	No Run	<input type="checkbox"/> [2]Tours	Tours	No Run	<input type="checkbox"/> [1]Tours_select1	Tours_select1	No Run	<input type="checkbox"/> [1]Tours_select2	Tours_select2	No Run
Name	Test: Test Name	Status														
<input type="checkbox"/> [1]Tours	Tours	No Run														
<input type="checkbox"/> [2]Tours	Tours	No Run														
<input type="checkbox"/> [1]Tours_select1	Tours_select1	No Run														
<input type="checkbox"/> [1]Tours_select2	Tours_select2	No Run														

The tests appear in the **Test Runs** list inside the **Run Setup** area, in the main window of Sprinter.

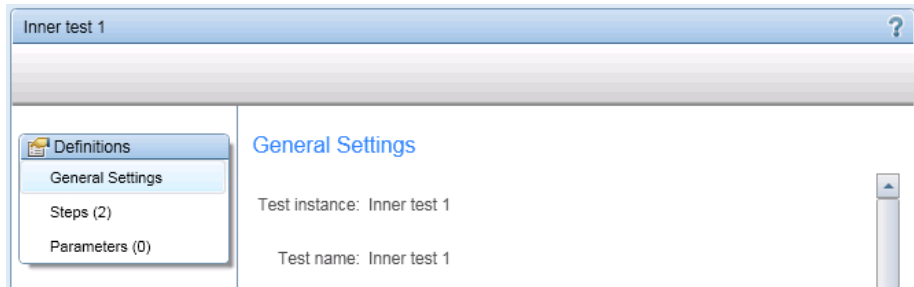


The **Test Runs** list displays tests that you can include in your next run. At this point you can add or remove tests in the **Test Runs** list or you could use the right-click options to change the order of the tests in your list or leave a test in the list but not include it in the next run.

For now you decide not to modify the list of tests and you check the **status bar** to confirm how many tests from the **Test Runs** list will be included in the next run.

Tests: 3 | Active Tests: 3

At this point, you can review your test and run information. This information is displayed in the right pane of the main window when you select a test in the **Test Runs** list and select a node in the **Definitions** group.



You review the **General Settings** node which displays the same information that you would normally find in ALM, including: the name of the test, the name of the test set, the name of the configuration, the test owner, the test description, and the name of the run.

You confirm the steps in your test by reviewing them in the **Steps** node of the **Definitions** group.

You review the parameters in your test in the **Parameters** node of the **Definitions** group. You modify the relevant actual values to meet your current testing needs.

Decide if You Want to Run Your Test in Power Mode

When you work with **Power Mode**, you have access to Sprinter's advanced functionality. This includes **data injection** (automatically entering data into fields in your application), **macros** (recording and replaying a set of user actions), **mirroring** (replicating user actions on multiple computers), and **scanners** (checking that various aspects of your application behave correctly).

When you are in Power Mode, Sprinter also captures each action you perform on your application and stores the list of these **user actions** (the actions you perform in your application) in the form of descriptive sentences. For example:

```
"Enter "My User" in the "userName" edit field."  
"Enter the encrypted password in the "password" edit field."  
"Click the "Sign-In" image."  
"Select the "New York" item from the "fromPort" combo box."  
"Select the "February" item from the "fromMonth" combo box."  
"Select the "Paris" item from the "toPort" combo box."  
"Select the "March" item from the "toMonth" combo box."
```

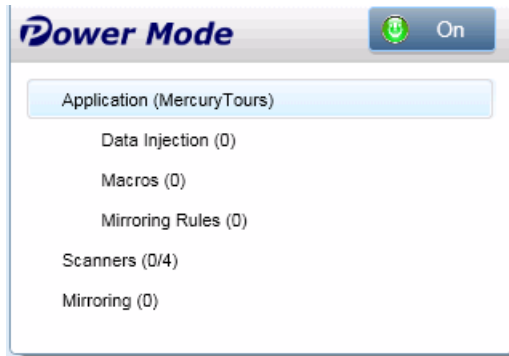
You can view these user actions in your run results or in the Storyboard viewer at the end of your run, which displays each action you performed in your test. You can also include a list of the relevant user actions in any defect you submit, to let Sprinter automatically insert a defect scenario for you.

If you run your test with Power Mode and do not configure data injection or macros, Sprinter will still learn all your user actions, which you can include in defects and view in the Storyboard in the test results.

Once you configure Power Mode to test an application, Sprinter remembers your settings every time you test that application.

You decide that the data injection and macro capabilities will be really helpful during your run. You have several forms that need to be filled out just to get to the main screen you need to test, and it will be very nice to have Sprinter fill them in for you. You can also use macros to quickly run through some of the initial screens in your application for you and get to the area that requires rigorous testing.

You turn Power Mode by clicking the Power Mode button in the **Power Mode** group under the **Test Runs** list.



To use Power Mode, you need to define the **application** for your test. This is the application that you will be testing. By defining an application for your test, Sprinter is able to learn the objects and screens in your application in order to work with the Power Mode features described above.

When you define an application for your test, Sprinter associates all your Power Mode configurations with that application. That means that whenever you run a test in Power Mode and select an application for your test, all the data injection data sets, macros, and rules that are associated with that application are automatically available for your test.

You select the **Application** node in the Power Mode group to display the Application pane and define the application for your test.

The travel agency application you will be testing is currently running on your computer, so you click **Quick Add**, select you application from the list and Sprinter automatically defines the application for you.

Using Data Injection

During the test you are going to run, you will need to enter data into a few forms in your application. To make the data entry process faster and less error-prone, you configure **data injection** so it can automatically fill the forms in your application with the data from your spreadsheet.

To use data injection, you need to create one or more files (data sets) that contain the data you want to use in your application. The column headings in the data set must match the field names of the fields in your application where you want the data injected. For example, to create a column for a field labeled **First name** in your application, the column header should be **First name**.

The data set can be stored in the form of an **.xml**, **.xlsx**, or **.csv** (Comma Separated Values) file. You then associate this file with your application in the **Data Injection** pane of the Power Mode group.

Now that you've associated this data set with this application, the data set will be automatically available for any test that is configured to use this application.

Using Macros

During the testing process, you may have parts of your test that require performing a series of actions that you want Sprinter to perform for you. There may also be parts of your test that involve performing the same set of actions in multiple areas of your application. **Macros** perform a series of actions and run them as a single command, which can save testing time and reduce errors.

To create a new macro for your current application, you record the macro while you are performing your test. It will then be available for your current test and for any test that is configured to use this application.

You can view and manage the list of available macros for your application in the **Macros** pane of the Power Mode group.

Using Scanners

Sprinter's scanners enable you to check whether strings in your application are spelled correctly, whether the application conforms to Web Standards (Web applications only), if there are broken links, or whether the user interface of your application is translated correctly.

You can turn the scanners on or off as needed. Use the **Scanners** pane (Power Mode group) to turn on the relevant scanners. During the test run, you use the **Scanners** sidebar to begin a scan.

Decide if You Want to Work with Mirroring

A common need in manual testing is running the same test scenario on different configurations. You may want to test your application on different operating systems, or in the case of a Web application, with different browsers.

When you work with **mirroring**, every user action you perform in your application on your **primary machine** is replicated on the defined **secondary machines**.

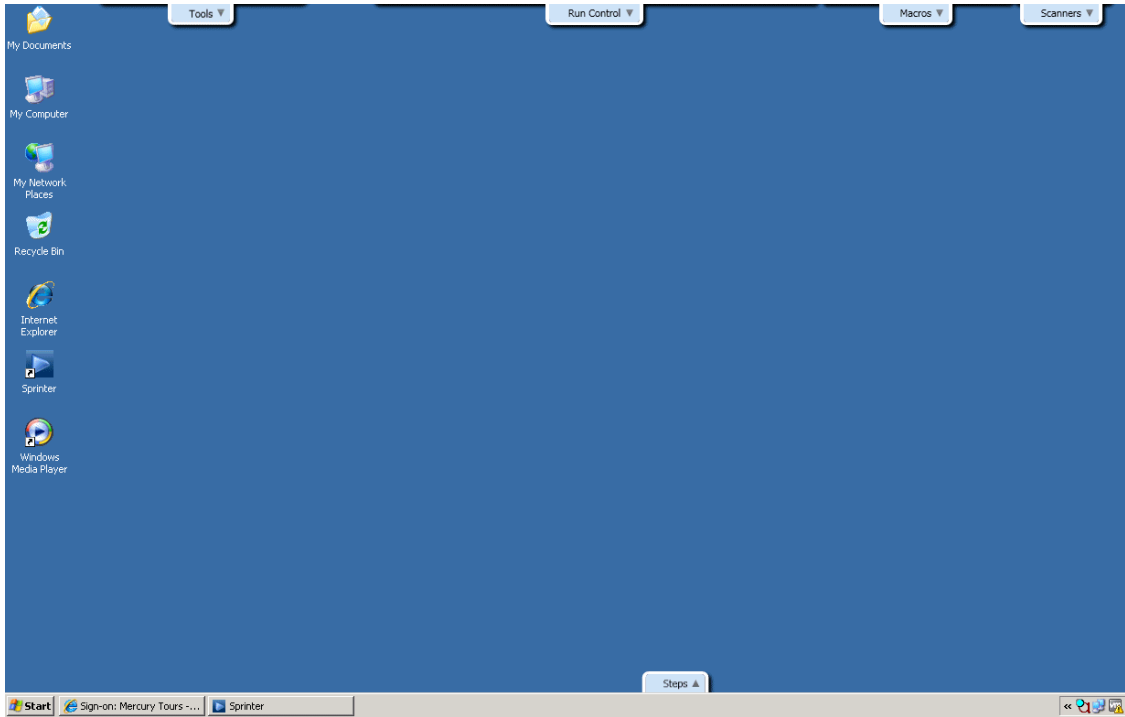
To read more about configuring a test to run with mirroring, see "Mirroring Tests" on page 37.

Begin Your Run



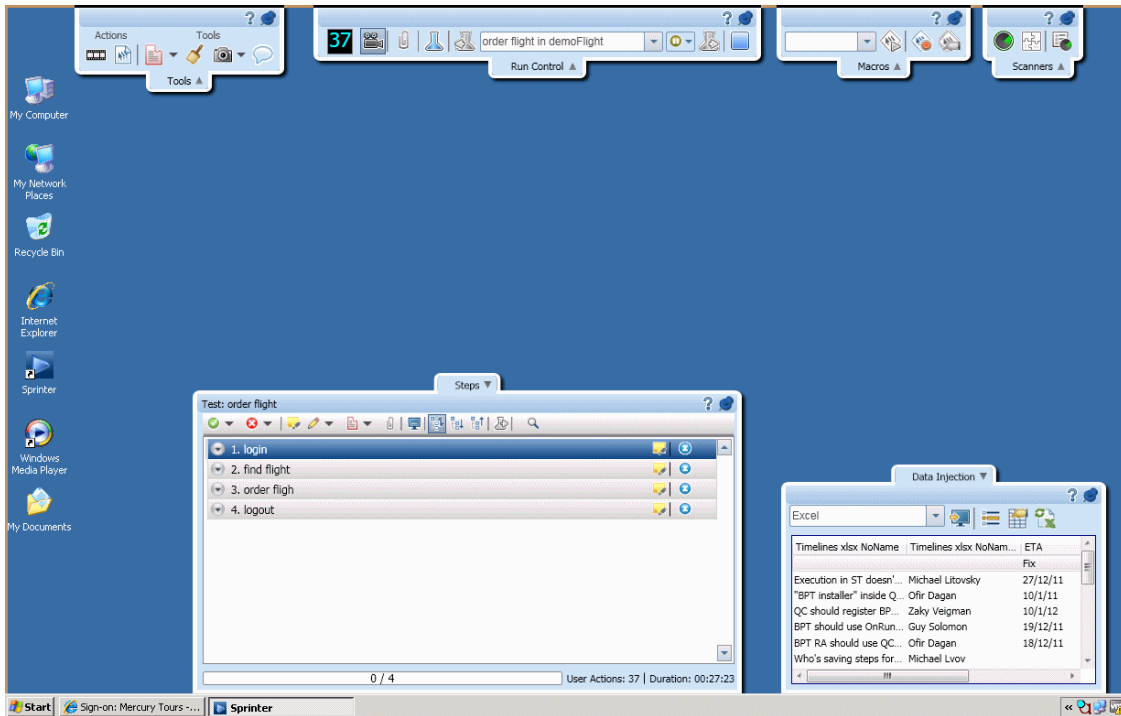
You click the **Run** button in the **Run Setup** area, your run begins and the Sprinter main Window is hidden.

You immediately notice that Sprinter is taking up very little screen space. You see that you access Sprinter's functionality during your run through **sidebars** that are positioned around the perimeter of your display. In the closed position, the sidebars are hidden and only their tabs are visible.



Chapter 1 • Using Sprinter - A Story

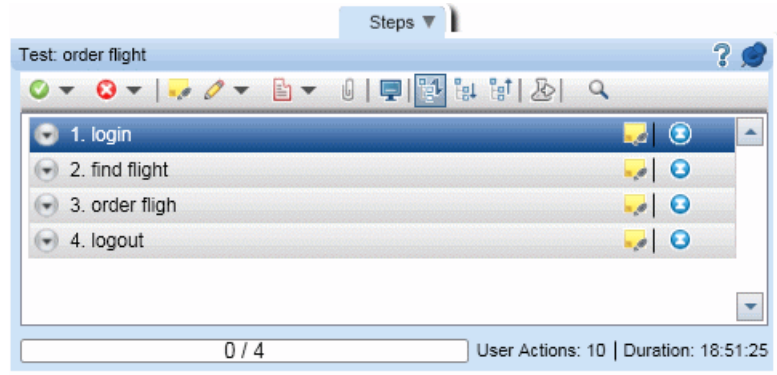
You can open one, several, or all of the sidebars at once by clicking their tabs. Sidebars automatically open and close as you click on or off them, and you can lock them in the open position and reposition them, as needed.



This design provides you with the maximum use of your display to view your application and run your test, and enables you to expose specific Sprinter functionality as needed.

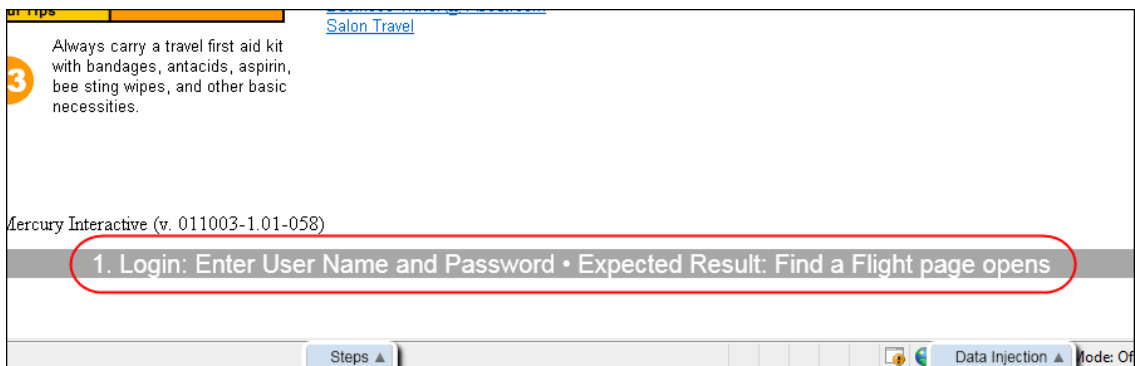
Since you used the **Quick Add** feature to define the application for your test, Sprinter starts your application automatically at the beginning of the run for you.

You click on the **Steps** tab, so that you can view the test steps in the **Steps** sidebar.



You skim the steps in your test and view their description, expected result, and any attachments.

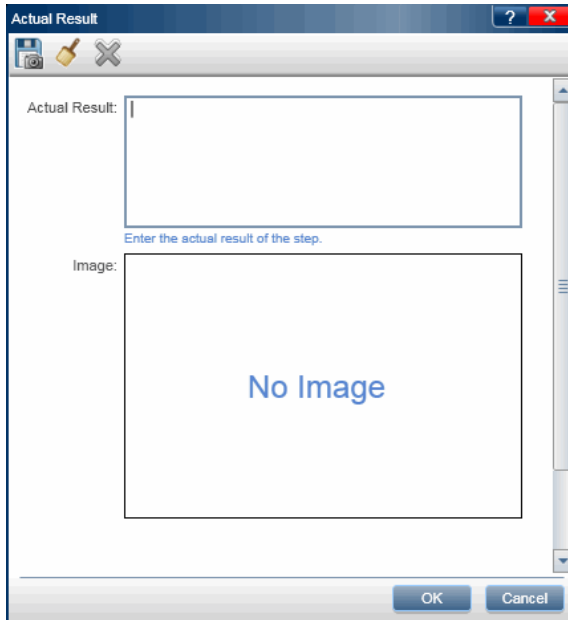
Since you already skimmed through all the steps in your test, you decide to switch to **Subtitles** mode by clicking the Subtitles button in the **Steps** sidebar. Subtitles mode displays the description of each step as a subtitle on your screen instead of the sidebar, and enables you to mark the step's status and add attachments to steps. This provides even more screen real estate, enabling you to view even more of your application.



As you perform the steps in your test, you mark each step's status in the right column, for example **Passed** or **Failed**.

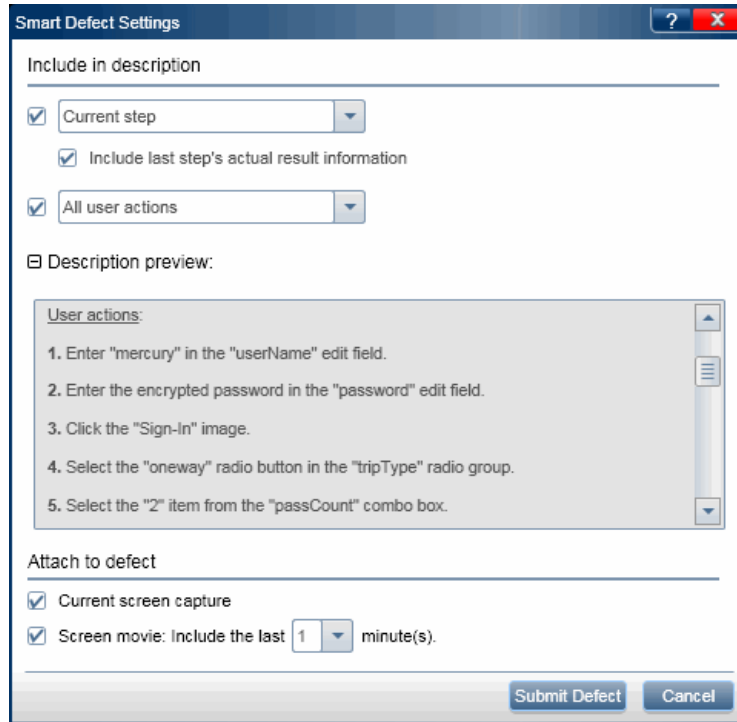
Submit a Defect

You continue performing the steps in your test, and for one of your steps, the actual result is not what is described in the **Expected Result**. First you mark the status as **Failed**. Then click the **Actual Result** button for the step. In the **Actual Result** dialog box, you enter text to describe what actually happened in your application.



From the toolbar in the **Steps** sidebar, you click the **Smart Defect** button.

Since this defect is something the developers have had a hard time reproducing in the past, you include the list of user actions in the defect description as a reproduce scenario and attach a movie of your run to the defect.



The image shows a 'Smart Defect Settings' dialog box with the following sections and options:

- Include in description:**
 - Current step
 - Include last step's actual result information
 - All user actions
- Description preview:**
 - User actions:
 1. Enter "mercury" in the "userName" edit field.
 2. Enter the encrypted password in the "password" edit field.
 3. Click the "Sign-In" image.
 4. Select the "oneway" radio button in the "tripType" radio group.
 5. Select the "2" item from the "passCount" combo box.
- Attach to defect:**
 - Current screen capture
 - Screen movie: Include the last 1 minute(s).

Buttons at the bottom: Submit Defect, Cancel

You continue with your run and discover another defect, although this defect is much more basic. Since you don't want to disrupt the flow of your run by submitting a defect and filling in the required fields in ALM, you decide to create a **Defect Reminder**.

A **Defect Reminder** enables you to summarize the defect in your application. The reminder is included with the test results and can be viewed at the end of your test. You can then submit the defect later from the test **Results**. The same information you have available during the test is also available to you from the results. So you can include annotated screen captures, movies, and step or action information in the defect at that time.

Annotations

In one of your steps you detect another defect in your application. You know that Sprinter lets you capture images and attach them to a step, a run, the actual result, or a defect, but it will be easier for the person who reviews the results if you highlight the problem in the image. So you decide to use the **Annotation Workspace** to annotate the screen capture. You click the **Save Annotation as Actual Result** button in the **Actual Result** dialog box. The **Annotation Workspace** opens and you use the **Annotation Tools** to mark up your screen capture.

You use the **Rectangle**, **Color Picker** and **Arrows** to highlight the problem and then you add some **text** to explain the problem. When you close the Annotation Workspace, the annotated screen capture is attached to the Actual Results of your step.

SELECT FLIGHT

Select your departure and return flight from the selections below. Your total price will be higher than quoted if you elect to fly on a different airline for both legs of your travel.

DEPART
Frankfurt to London 2/5/2010

SELECT	FLIGHT	DEPART	STOPS
<input type="radio"/>	Blue Skies Airlines Price: \$270 (based on round trip) R: 217 G: 255 B: 255	5:03	non-stop
<input type="radio"/>	Blue Skies Airlines Price: \$271 (based on round trip)	7:10	non-stop
<input type="radio"/>	Pangaea Airlines 362 Price: \$274 (based on round trip)	9:17	non-stop
<input type="radio"/>	Unified Airlines 363 Price: \$281 (based on round trip)	11:24	non-stop

RETURN
London to Frankfurt 4/8/2010

SELECT	FLIGHT	DEPART	STOPS
<input type="radio"/>	Blue Skies Airlines 630 Price: \$270 (based on round trip) R: 237 G: 252 B: 255	12:23	non-stop
<input type="radio"/>	Blue Skies Airlines 631 Price: \$273 (based on round trip)	14:30	non-stop
<input type="radio"/>	Pangea Airlines 632 Price: \$282 (based on round trip)	16:37	non-stop
<input type="radio"/>	Unified Airlines 633 Price: \$303 (based on round trip)	18:44	non-stop

CONTINUE

05, Mercury Interactive (v. HG-0.15)

Annotation Workspace:

- Tools: Select, Erase, Text, Lasso, Arrow, Highlighter, Pen, Eraser, Pointer
- Properties: Color selection, Opacity
- Screen Capture: Save, Print, Copy
- Buttons: Clear All, Close

In addition to saving the screen capture with the actual results, you could add it to a defect and use the email option to send it to a coworker who recently mentioned noticing a similar problem.

Use Macros

You continue performing the steps in your test, and you get to the area in your application where you have a series of actions that you want Sprinter to perform for you. You click the **Macros** tab to open the **Macros** sidebar.

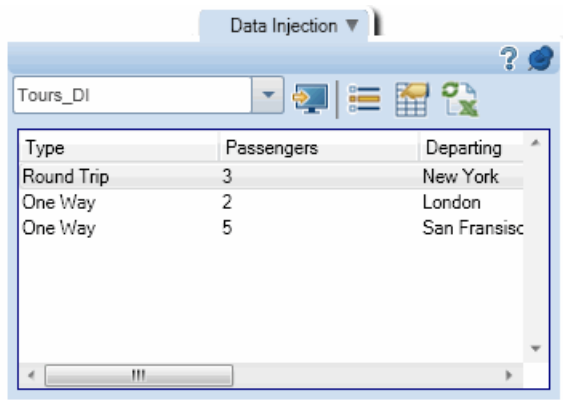


You click the record button and begin performing the actions that you want in your macro. When you are finished with the series of actions, you click the **Stop Recording** button and save the macro.

The macro will be available for this run and for any future test that is configured to use your current application.

Use Data Injection

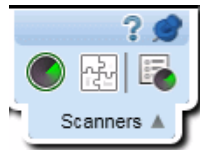
You continue performing the steps in your test, and you get to the area in your application where you need to search for a flight. You click the **Data Injection** tab to open the **Data Injection** sidebar.



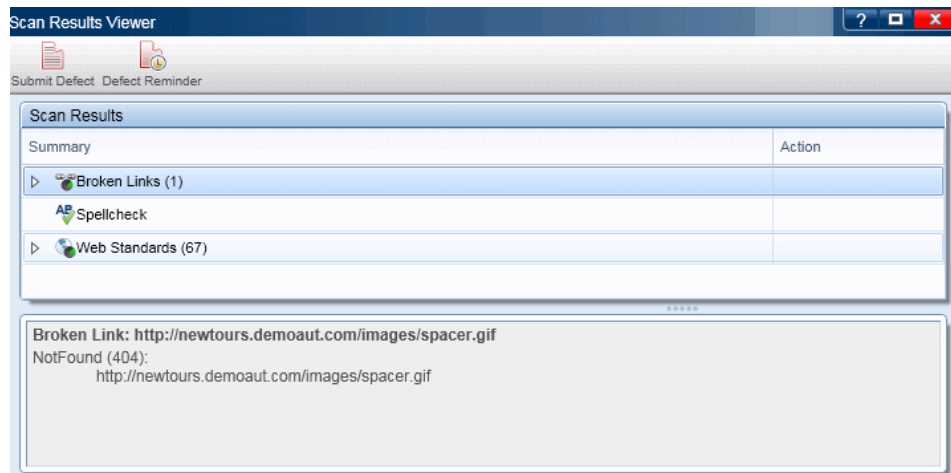
In the **Data Injection** sidebar, you select which data set you want to use in your application. You then select the row of information for the search you want to perform and inject the data into your application. Then you watch as Sprinter sends the data from that row to the relevant locations in the form.

Use the Scanners

When you get to the area in your application where you need to check for broken links or compliance with Web standards (Web applications), proper translations, and misspellings, use the built-in scanners. Click the **Scanners** tab to open the **Scanners** sidebar and then click the **Start Scan** button.



After the scan ends, the Scan Results Viewer opens. Handle the results for each scanner by creating a defect or a defect reminder or by performing a scanner-specific actions, such as adding a word to the dictionary.



View Your Run Results



You click the **Stop** button in the **Run Control** sidebar to end the run. The sidebars close and the **Run Summary** pane opens in the main window. The summary includes: test and run information, the number of actions you performed (Power Mode tests only), the number of defects you submitted, the number of defect reminders you created, the number of comments you added (Power Mode tests only), and the statuses of the steps you performed.

The screenshot shows the 'Run Summary' pane for a test instance named 'Tours1'. The sidebar on the left has two main sections: 'Definitions' and 'Results'. The 'Results' section is expanded, showing 'Run Summary' as the selected item. The main pane displays the following information:

- Test instance:** Tours1
- Test name:** Tours1
- Status:** Blocked
- Run name:** Run_7-14_16-41-22
- Tester:** jeff
- Start time:** 7/14/2010 4:45:34 PM
- End time:** 7/14/2010 5:20:51 PM
- Duration:** 00:35:17

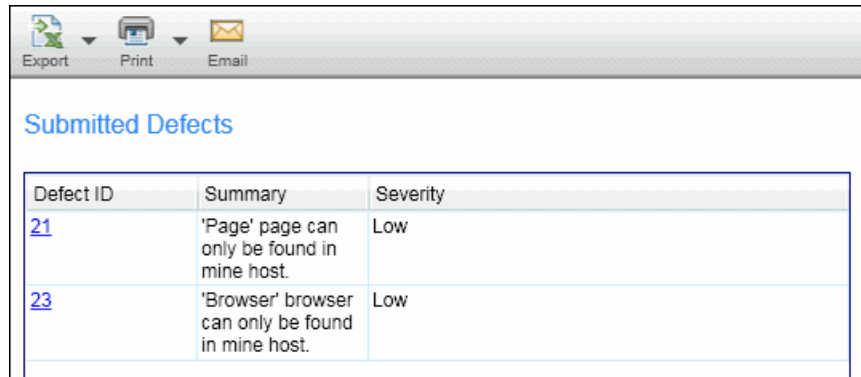
Below the summary information are four summary tables:

Actions	Submitted Defects	Defect Reminders	Comments
4	2	1	2

Steps 4		
Passed	Failed	Blocked
2	1	1

Each of the **nodes** in the **Results** group can be selected to display more details in the right pane.

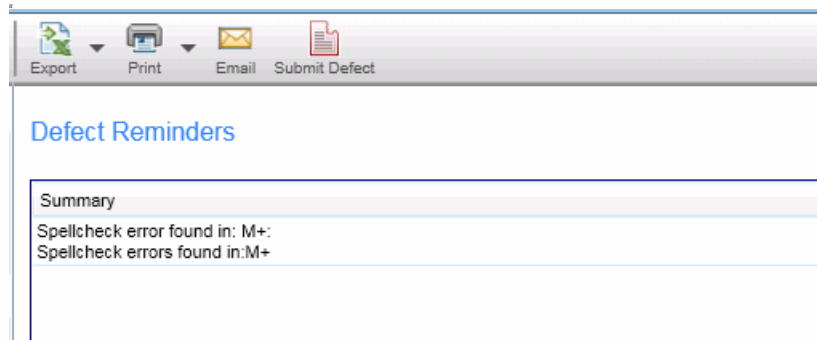
You select the **Submitted Defects** node to view a list of the defects you submitted during your test.



Defect ID	Summary	Severity
21	'Page' page can only be found in mine host.	Low
23	'Browser' browser can only be found in mine host.	Low

You can click the **Defect ID** number to open the ALM Defect Details dialog box for that defect.

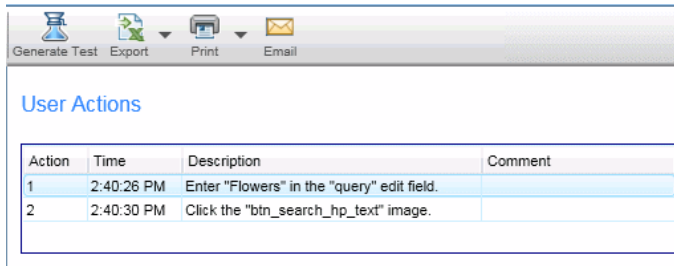
You then select the **Defect Reminders** node to view a list of the defect reminders you created during your test.



Summary
Spellcheck error found in: M+: Spellcheck errors found in:M+

You select a reminder and click **Submit Defect**, to submit the defect to ALM. All the information for the defect is still available in the run results. You can include an annotated screen capture, a movie, the step information or user action information with your defect.

Since you decided to run your test in Power Mode, you select the **User Actions** node and view a list of the user actions you performed during your run.

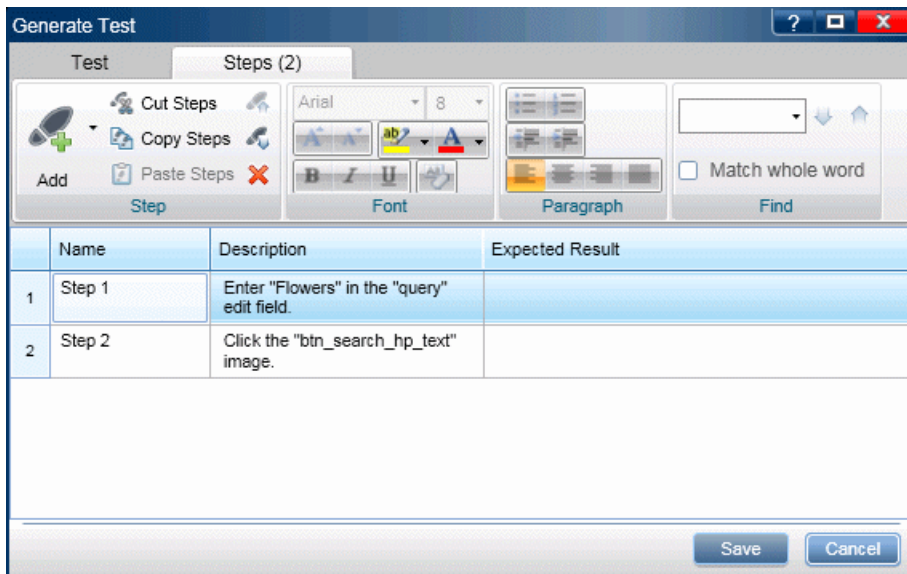


The screenshot shows a window titled "User Actions" with a toolbar at the top containing icons for "Generate Test", "Export", "Print", and "Email". Below the toolbar is a table with the following data:

Action	Time	Description	Comment
1	2:40:26 PM	Enter "Flowers" in the "query" edit field.	
2	2:40:30 PM	Click the "btn_search_hp_text" image.	

This list of user actions can be exported to an Excel spreadsheet.

You click the **Generate Test** button to use the current test run as a template for creating a new manual test.

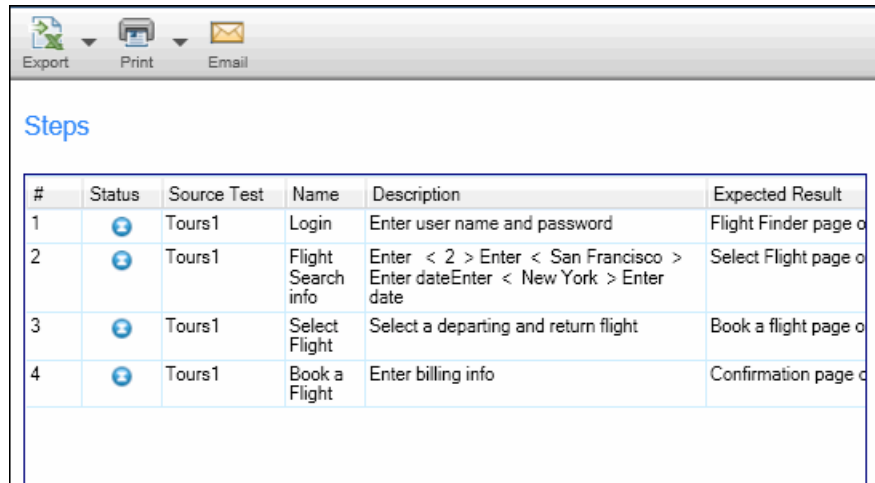


The screenshot shows the "Generate Test" dialog box. It has a "Test" tab and a "Steps (2)" sub-tab. The "Steps (2)" sub-tab contains a table with the following data:

Name	Description	Expected Result
Step 1	Enter "Flowers" in the "query" edit field.	
Step 2	Click the "btn_search_hp_text" image.	

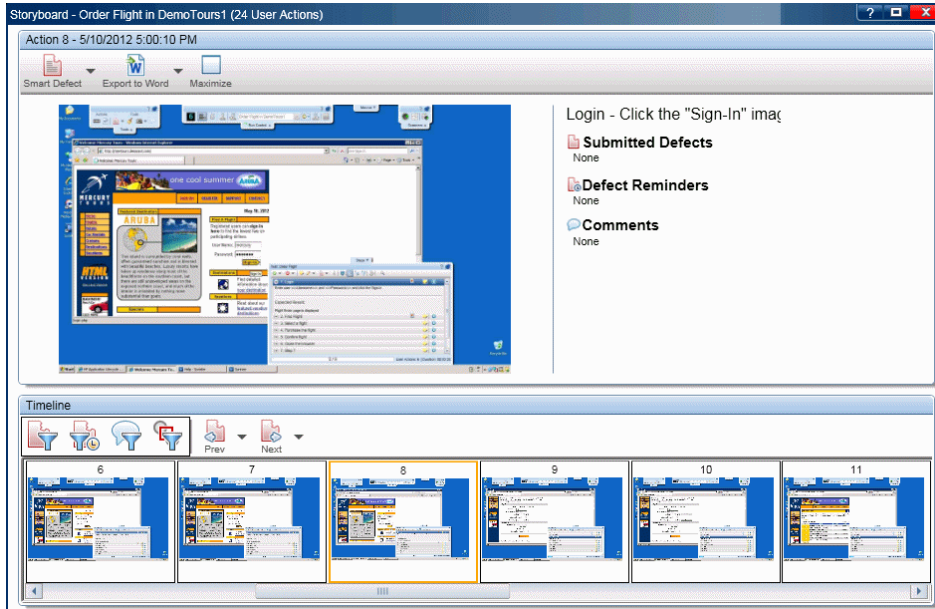
Below the table are "Save" and "Cancel" buttons. The dialog also features a toolbar with "Add", "Cut Steps", "Copy Steps", and "Paste Steps" buttons, and a "Find" section with a search box and a "Match whole word" checkbox.

You open the **Steps** node to see details about each of the steps. The summary includes: Status, Source Test, Name, Description, Expected and Actual Results, Screen Captures, and Attachments.



#	Status	Source Test	Name	Description	Expected Result
1	+	Tours1	Login	Enter user name and password	Flight Finder page o
2	+	Tours1	Flight Search info	Enter < 2 > Enter < San Francisco > Enter dateEnter < New York > Enter date	Select Flight page o
3	+	Tours1	Select Flight	Select a departing and return flight	Book a flight page o
4	+	Tours1	Book a Flight	Enter billing info	Confirmation page c

You then select the **Storyboard** node and the Storyboard opens. The top of the Storyboard displays a screen capture of your application as it appeared after the selected user action in the **Timeline** was performed, and an Action Summary pane. The bottom of the Storyboard displays a **Timeline** of your run.



In the **Action Details** pane you view a description of each action and any defects that were submitted, defect reminders or comments that were added, and if you ran your test with mirroring, any differences that were found between the primary and secondary machines.

You can click the links in the Action Summary pane to open the ALM Defect Details dialog box, create a defect from your defect reminder, or open the Differences Viewer. You can also submit a new defect from the Storyboard.

The bottom of the Storyboard displays the **Timeline** of your test. The Timeline contains a thumbnail screen capture of each user action in your test. You can filter the thumbnails that are displayed in the Timeline to show only those actions where you submitted a defect, only those actions where you created a Defect Reminder, only those actions where you added a comment, or only those actions where differences were found.

Now that you've walked through the basic processes of configuring, running, and viewing the results of this imaginary test, you are ready to get started using Sprinter. Continue reading to learn how to take advantage of the mirroring options.

Mirroring Tests

You decided that you want to run your test with mirroring, because you need to make sure that your online travel agency application will work on all of the popular browsers and the most common operating systems.

Normally the QA team selects a few combinations of browsers and operating systems due to limitations of time and resources. Now with mirroring, you can test many of the combinations at once.

You have arranged for a computer lab to be set up with the combinations of the supported browsers and operating systems and you have access to the machines for a few hours, which is plenty of time since you can test all the combinations simultaneously.

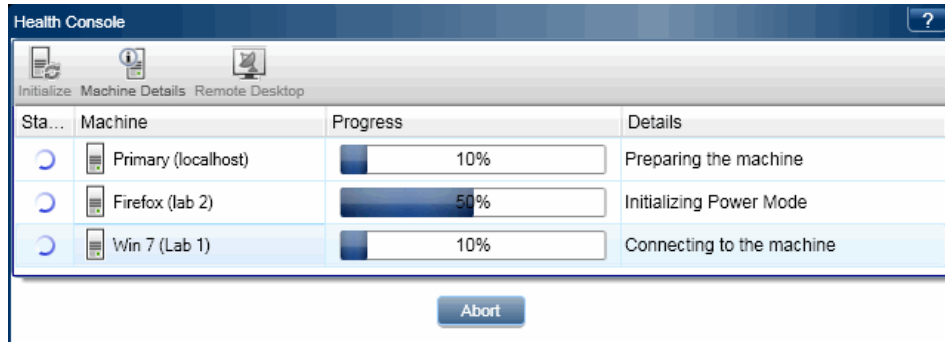
To work with mirroring, you select the Mirroring node in the Power Mode group and configure the secondary machines for your test. You then click the **Add** button to add a new machine for your application.

You provide a machine name or IP address for the secondary machine, and since you are testing a Web application, you define which browser you want to use to run the application on this machine. You decide to also provide the remote desktop connection information, in case you want to open a connection during your test (you can provide that information during the run as well). You repeat this for each machine in the testing matrix.

You need to also set up your secondary machine with the specific configuration and settings you want to test.

Run a Test with Mirroring

When you start your test with mirroring, the **Health Console** displays the status of each machine in your run.



When all the machines are ready, the run begins. You click the **Machines** tab to open the **Machines** sidebar and view the status of your machines.

You perform the user actions in your test and you monitor the **Machines** sidebar to check that all your secondary machines replicated your actions successfully.



After one action, the **Machines** sidebar indicates a replication failure on a secondary machine.



In this case, any subsequent user actions you perform are not replicated on the secondary machine where the failure occurred, until you address the replication problem between the machines.

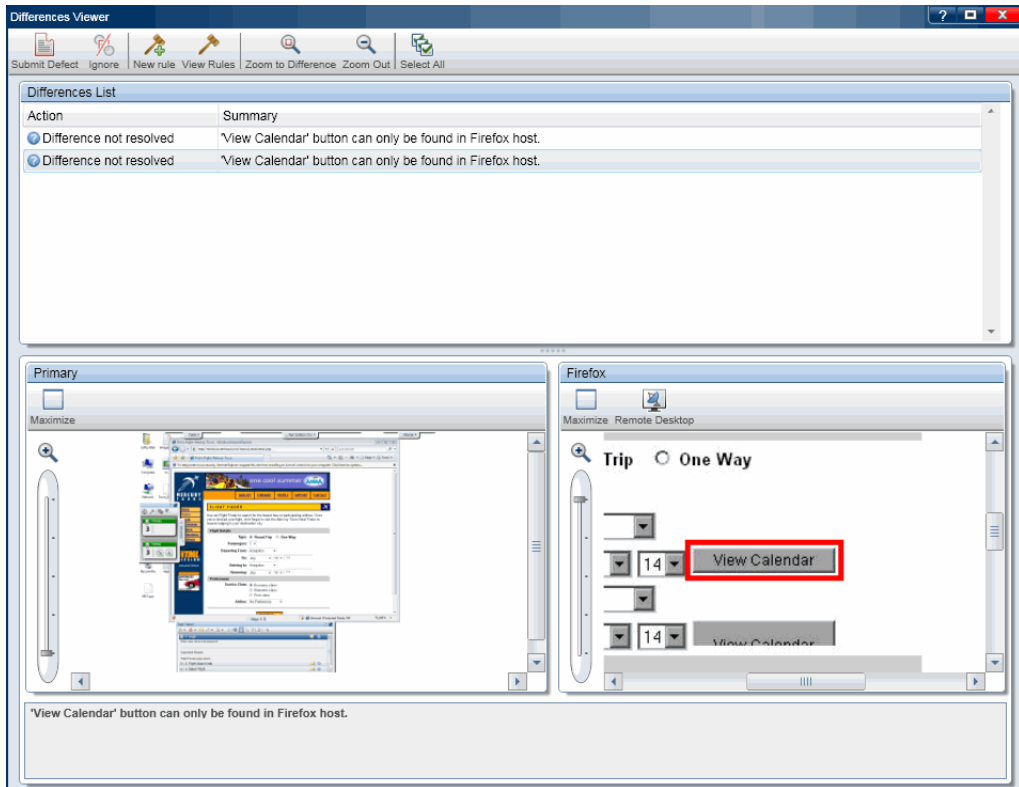
You want to get a sense of what the problem is, so you right-click the secondary machine display and select **Show Screen** from the drop-down list to view a current screen capture of the secondary machine. You notice that on your secondary machine an ActiveX warning appeared in the browser window. Since this is not a defect in your application, you right-click the secondary machine display and open a **remote desktop connection** with your secondary machine and clear the warning. You close the remote desktop connection and from the right-click list you select **Skip**. This tells Sprinter to ignore the replication problem, unlock the secondary machine, and attempt to replicate any pending user actions (actions that were performed on the primary machine while the secondary machine still had differences).



As you continue your run, you come to a screen that has known compatibility problems between browsers. To check that the application is displaying properly, you click the **Compare All** button in the **Machines** sidebar. This compares the current display of the primary machine with the current displays of all the secondary machines and looks for differences between them.

As a result of the **Compare All** operation, one of the secondary machines indicates a comparison problem. You right-click the secondary machine display for that machine and select **Differences Viewer** from the drop-down list.

In the **Differences Viewer** the difference between the machines is highlighted.



You see that the difference is in the display of a user interface element between browsers, so you submit a defect for this difference. Now that you have submitted a defect, you don't want Sprinter to detect this type of difference in the future. So you create a **rule** in the Differences Viewer, instructing Sprinter to ignore differences of this type.

You close the Differences Viewer and return to your run. Once you resolve the difference, the secondary machine is unlocked and any pending user actions are replicated.

Now that you've walked through the basic process running a test with Mirroring, you are ready to get started using Mirroring in your Sprinter tests.

2

Sprinter at a Glance

This chapter includes:

Concepts

- ▶ Sprinter Overview on page 44
- ▶ How User Information is Maintained on page 47

Tasks

- ▶ How to Get Started with Sprinter on page 50

Reference

- ▶ Welcome Dialog Box on page 52
- ▶ ALM Connection Dialog Box on page 54
- ▶ Main Window on page 55
- ▶ Settings Dialog Box on page 57

Troubleshooting and Limitations - General on page 62

Concepts

Sprinter Overview

Welcome to HP Sprinter, HP's solution for manual testing. Sprinter provides advanced functionality and tools to make manual testing more efficient and effective.

Manual testing often requires that you leave your testing application to accomplish tasks related to your test. For example, you may need to use graphic software to take a screen capture of your application, you may want to record a movie of the application during the test, and you need to switch to your defect tracking software to report defects.

Sprinter enables you to accomplish these tasks without disrupting your test flow. With Sprinter, you can also perform many of the repetitive and tedious tasks of manual testing automatically. Sprinter includes many tools to help you detect and submit defects. These features ensure that you can perform all the tasks necessary for your manual test with minimum interruptions to your testing work.

Sprinter also enables you to create, edit, and manage manual tests and business components directly in Sprinter, and then save them to ALM.

Sprinter is fully integrated with ALM, enabling you to get the maximum benefit from both solutions.

With Sprinter you can:

► **Create manual tests and business components**

In Sprinter's **Plan** mode, you can create and edit manual tests and business components. You can add steps manually or automatically using the **Steps Capture** tool. For details, see Chapter 3, "Creating Tests and Business Components".

► **Run ALM manual tests and Business Process tests with a new step display:**

- **User-friendly display.** Steps are presented in a clear, organized, and user-friendly design, making it easier to view step information, navigate steps, and modify step information. For details, see "Steps Sidebar" on page 149.
 - **Move easily between tests in your run.** You can move between the tests in your run without interrupting your test flow. Sprinter updates all your displayed step and run information to match your current test.
 - **Edit actual values of parameters during your test run.** You can easily edit the actual values of parameters in your test, during your test run.
 - **Multiple views.** Change the way you view your steps depending on your testing needs. View in normal mode when more details are needed, or view in Subtitles mode if you need to see more of your application. For details, see "Steps Sidebar" on page 149.
 - **Actual value including screen captures.** Attach a plain or annotated screen capture of your application to the step's actual value. For details, see "Steps Sidebar" on page 149.
- **Run exploratory tests with no predefined steps.** If you run a test without predefined steps, Sprinter can keep a record of all the user actions you took during your test.

Sprinter also enables you to export the list of user actions performed during informal testing sessions to:

- ▶ a formal manual test. All user actions are converted to steps, and you can save the new test directly in ALM.
- ▶ an Excel spreadsheet. You can then modify the text as needed and import the spreadsheet to a test in ALM, thereby converting an exploratory test to a formal test, with predefined steps. For details, see "User Actions Pane/User Actions Summary Dialog Box" on page 209.
- ▶ **Submit defects to ALM.** Submit an ALM defect directly from within Sprinter. For details, see "Tools Sidebar" on page 186.
 - ▶ **Open a Smart Defect.** Smart Defects create a defect scenario by automatically generating a text description of all the user actions or steps in your test. You can also attach a screen capture or a movie of your application to the defect. For details, see "Smart Defect Settings Dialog Box" on page 188.
 - ▶ Create a **Defect Reminder** to submit a defect at the end of your run, enabling you to keep testing without interrupting the flow of your test run.
- ▶ **Create and annotate screen captures of your application.** Sprinter provides tools that enable you to take and annotate a screen capture of your application at any point in the testing process. Tools are included for measuring and comparing user interface elements. You can report defects in the display by attaching the annotated screen capture to a ALM defect, saving it as a file, or attaching it to an email. You can also include annotated screen captures in the Actual Result of a step. For details, see "Annotation Tools Sidebar" on page 193.
- ▶ **Record and run macros on your test application.** Create and run macros to allow Sprinter to perform a set of actions in your application for you. For details, see "Macros Sidebar" on page 265.
- ▶ **Inject data.** Sprinter can automatically enter data into fields in your application for you. The data is automatically matched to your application's fields. For details, see "Data Injection Sidebar" on page 256.

- ▶ **Replicate your actions on another computer.** Mirroring enables you to replicate your user actions on multiple computers with different configurations (operating system, browser). Sprinter detects differences in the displays of these computers and enables you to report defects on these differences. For details, see "Testing on Multiple Machines - Overview" on page 296.
- ▶ **Scan your application for potential defects.** Scanners enable you to check that various aspects of your application behave correctly during a run session. You can then report defects on any results found during the scanning process. For details, see "Scanners Overview" on page 274.
- ▶ **View test results.** Sprinter includes a Storyboard that displays each action you performed in your test. For each action, you can see a screen capture of the action, any defects that you reported, and defect reminders and comments you added to your run. If you ran the test with multiple configurations you can view the differences between the displays of different computers. For details, see "Run Results Overview" on page 202.


All this functionality is available from within Sprinter, and can be used without interrupting the flow of your manual test.

How User Information is Maintained

Sprinter saves settings and other user-specific configurations and applies this information the next time you run Sprinter.

When you run Sprinter, this information is saved in the ALM project, per-user (as unique information for each unique ALM user in each project). Additionally, it is saved to your local computer, per Windows user profile.




The next time you run Sprinter, it applies these saved settings and configurations, if they are available. Some information is saved and applied per-user and some information is saved and applied depending on the application defined for your test.

The tables below describe how the user information is saved and applied ( Some user information is relevant for Power Mode features only).




Note: When you begin a Sprinter session while not connected to ALM, any information that is stored locally is applied to Sprinter. If you then connect to ALM, the information stored in ALM is applied in addition to the local information. Some of your local information may be replaced by the ALM information for your user in your project. This combined set of information is then saved in ALM for your user in your project. If there is a conflict between the information stored locally and the information stored in ALM, the most recent information is applied.

To maintain a consistent working environment in Sprinter, it is recommended that you connect to ALM before making any changes to your settings or configurations.


Information Applied Per-User in Your ALM Project

User Information	Where Defined	How Information is Applied
Favorites	"Run Setup Area" on page 132	<ul style="list-style-type: none"> ▶ Uses the list from your last Sprinter session, for your ALM user in your current project. ▶ When you load ALM tests, Sprinter checks the first test to see if it has a defined application. If it does, Sprinter checks if that application is in your list of applications in the Applications pane. If it is missing, Sprinter adds it to the list and selects it. ▶ If you do not have permissions to modify resources in ALM, all your test settings and configurations are saved for your user profile on your local computer only.
Settings	"Settings Dialog Box" on page 57	
 Applications	"Application Pane (Power Mode Group)" on page 230	
 Scanners	"Scanners Pane (Power Mode Group) / Scanner Settings Dialog Box" on page 281	
 Secondary Machines	"Mirroring Pane (Power Mode Group)" on page 318	

Information Applied Per-Application

User Information	Where Defined	How Information is Applied
 Macros	"Macros Sidebar" on page 265	When you save a macro, add a data set, or create a rule, Sprinter associates them with the application defined for your test in the Application Pane (Power Mode Group) (described on page 231).
 Data Sets	"Data Injection Sidebar" on page 256	When you select an application for your test in the Application pane, all the macros, data sets, and rules associated with that application are available in your test.
 Rules	"Rules Manager Dialog Box" on page 356	<p>This information is retrieved per-user in your ALM project.</p> <p>Note: By default, rules are applied per-application. You can define global rules for all your tests in the Rule Wizard - Rule Details Page (described on page 349).</p>

Tasks

Throughout this guide, descriptions of features that are available only in Power Mode are identified by the Power Mode  icon.

How to Get Started with Sprinter

The following steps describe the general prerequisites to using Sprinter, and how to start using Sprinter.

This task includes the following steps:

- "Prerequisites" on page 50
- "Connect to ALM" on page 51

Prerequisites

- Sprinter functionality is available with:
 - **HP Application Lifecycle Management 11.50**
 - **ALM Quality Center 11.50 Enterprise Edition**

- You must have the following permissions in ALM to run a test in Sprinter:

Permission	Permission Level
Test Lab > Results	Create, update, and delete
Test Lab > Run	Create and update

- To save your user information to ALM you need the following additional permissions:

Permission	Permission Level
Resources > Resource	Create, update, and delete
Resources > Resource folder	Create and update

- To edit test steps, you need the following additional permissions:

Permission	Permission Level
Test Plan > Design Step	Create, update, and delete

- To create new manual tests, you need the following additional permissions:

Permission	Permission Level
Test Plan > Test	Create, update, and delete
Test Plan > Test Folder	Create, update, and delete
Test Plan > Test Parameters	Create, update, and delete

Connect to ALM

You must be connected to ALM to run a test in Sprinter.



Click the **ALM** button to open the **ALM Connection** dialog box and connect to ALM.

If you do not connect to ALM, you will be prompted to connect when you open a test.

For details, see "ALM Connection Dialog Box" on page 56.

Create and edit a test or component

For details, see "How to Author a Test or Component" on page 73.

Run a test or test set

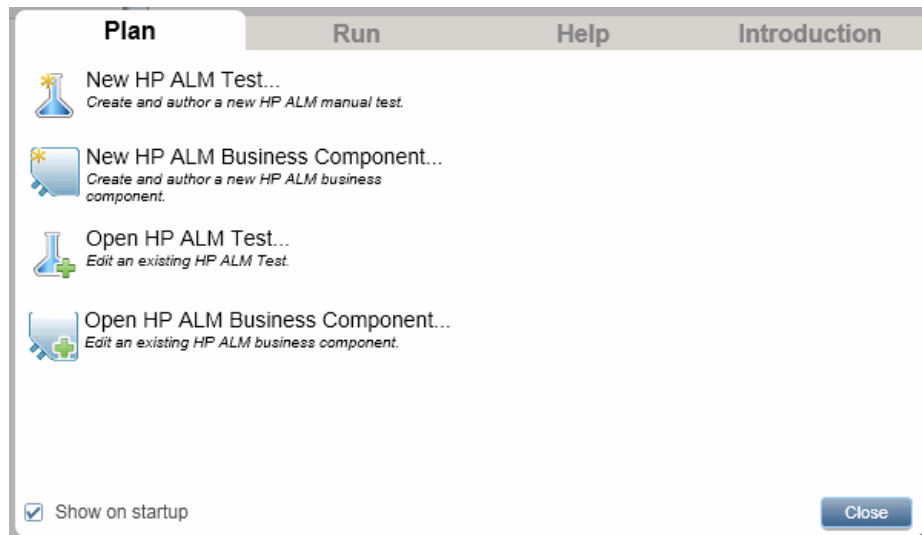
For details, see "How to Run a Manual Test in Sprinter" on page 122.

Reference

Welcome Dialog Box

This dialog box provides quick access to Sprinter Help and feature movies. It also lets you open or create a test or business component

The following shows an image of the Welcome dialog box.



To access	<p>Do one of the following:</p> <ul style="list-style-type: none"> ▶ Start Sprinter. ▶ In the main window, select Welcome Screen from the drop-down arrow adjacent to the Help button.
Important Information	<p>The Show on startup option instructs Sprinter to display the Welcome dialog box each time Sprinter is opened.</p> <p>You can configure Sprinter to bypass the Welcome dialog box in the General Settings Pane (Settings Dialog Box) (described on page 60).</p>

Introduction Tab

The **Introduction** tab provides links to introductory and feature movies for Sprinter.

Help Tab

The **Help** tab provides links to this user guide, customer support, and the About screen.

Plan Tab

User interface elements for the **Plan** tab are described below:

UI Elements	Description
New HP ALM Test	Opens the Authoring pane and adds a new test entry to the Tests and Components list. If you are not connected to ALM, the ALM Connection Dialog Box opens to enable you to connect to ALM.
New HP ALM Business Component	Opens the Authoring pane and adds a new business component entry to the Tests and Components list. If you are not connected to ALM, the ALM Connection Dialog Box opens to enable you to connect to ALM.
Open HP ALM Test	Opens the Open Dialog Box (described on page 143) to the parent Subject root in ALM's Test Lab module. If you are not connected to ALM, the ALM Connection Dialog Box opens to enable you to connect to ALM.
Open HP ALM Business Component	Opens the Open Dialog Box (described on page 143) to the parent business component root. If you are not connected to ALM, the ALM Connection Dialog Box opens to enable you to connect to ALM.

Run Tab

User interface elements for **Run** tab are described below:

UI Elements	Description
Open ALM Test	Opens the Open Dialog Box (described on page 143) to allow you to open a test from ALM's Test Lab module. If you are not connected to ALM, the ALM Connection Dialog Box opens to enable you to connect to ALM first.
Favorites	The list of your favorites that contain ALM tests.

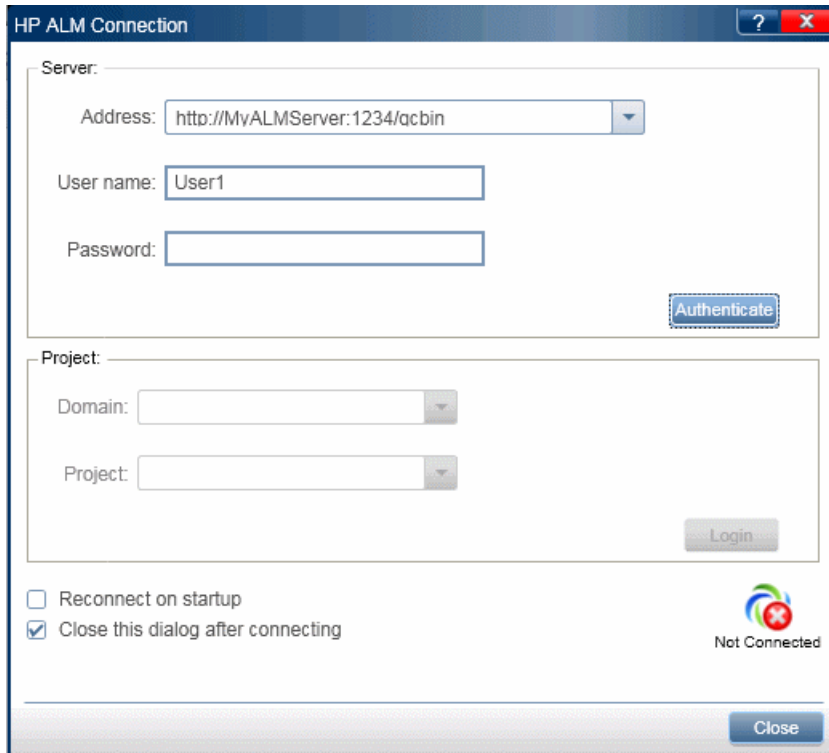
ALM Connection Dialog Box

This pane enables you to connect to ALM.

Tasks you can accomplish with the ALM Connection dialog box:

- ▶ "How to Run a Manual Test in Sprinter" on page 122

The following image shows the ALM Connection dialog box.



HP ALM Connection

Server:

Address:

User name:

Password:

Authenticate

Project:

Domain:

Project:



Login

Reconnect on startup

Close this dialog after connecting

Not Connected

Close

To access	Do one of the following: <ul style="list-style-type: none"> ➤ In the main window, click the ALM button . ➤ In the status bar, double-click the ALM icon .
Important information	<ul style="list-style-type: none"> ➤ The server Address must be entered in the format: <code>http://<ALM server name>[:<port number>]/qcbn</code>. ➤ Your ALM connection status is displayed in the status bar. When you are connected to ALM, the ALM icon is active and when you are disconnected it is deactivated. ➤ The Domain and Project fields are not case-sensitive. ➤ If your connection to ALM is lost and there are tests in the Test Runs list, you must reconnect to the same project to run or save the tests.

Descriptions of the user interface elements are available in the dialog box when you hover over them.

Main Window

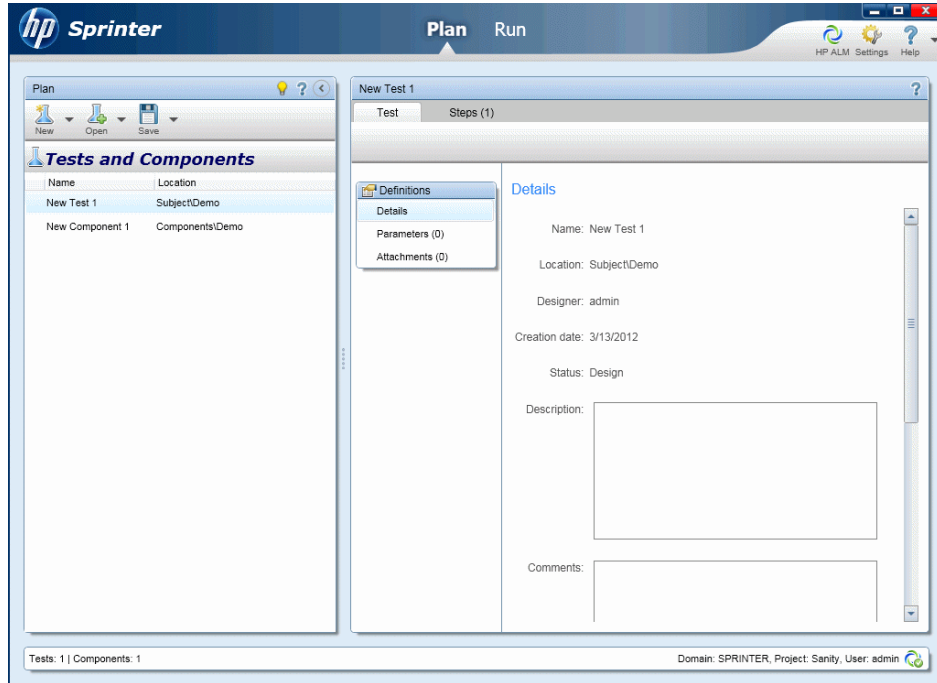
This window enables you to manage your tests and components, configure test and component definitions, view test results, and configure Sprinter settings. You can also access the Settings dialog box and ALM Connection dialog box.

The panes displayed in the main Sprinter window differ depending on whether you are authoring a test or component, or running a test.

Tasks you can accomplish with the main window:






- "How to Get Started with Sprinter" on page 50
- "How to Author a Test or Component" on page 73
- "How to Run a Manual Test in Sprinter" on page 122
- "How to Review Run Results" on page 203


The following image shows the main window for **Plan** mode.



To access	<ol style="list-style-type: none"> 1 Start Sprinter and close the Welcome window, if open. 2 Select Plan from the main toolbar.
Important information	<ul style="list-style-type: none"> ➤ The information available in the Details pane depends on the selected test in the Test and Components list. ➤ To exit Sprinter, close the main window.
See also	<ul style="list-style-type: none"> ➤ "Sprinter Overview" on page 44 ➤ "Test and Component Authoring Overview" on page 72 ➤ "Power Mode Overview" on page 121

User interface elements are described below (unlabeled elements are shown in angle brackets>):

UI Elements	Description
	Indicates that Sprinter is in Run mode and shows the Run Setup area in the left pane. For details, see "Run Setup Area" on page 132.
	Indicates that Sprinter is in Plan mode and shows the Authoring area in the left pane. For details, see "Plan Area" on page 77.
	Opens the ALM Connection Dialog Box (described on page 56), enabling you to configure your ALM connection and connect to a ALM project.
	Opens the Settings Dialog Box (described on page 60).
	Opens the Help for the main window. Drop-down options: <ul style="list-style-type: none"> ➤ Help ➤ Printer-Friendly Documentation. Opens a printer-friendly version of the Sprinter documentation, in Adobe Acrobat Reader (PDF) format. ➤ HP Software Support. Connects you to the HP Software Support Online Web site. ➤ Check for Updates. The first time you select Check for Updates, you are directed to download and install the HP Update application (unless you have other HP applications that use Check for Updates installed on your computer). The next time you select Check for Updates, the application will run automatically. ➤ Welcome Screen ➤ About

UI Elements	Description
<Status bar>	<p>The status bar displays the following information:</p> <p>Plan Mode</p> <ul style="list-style-type: none"> ▶ Test and Component status Tests: 1 Components: 1 . The number of tests and components in the Tests and Components list. <p>Run Mode</p> <ul style="list-style-type: none"> ▶ Test Runs list status Tests: 3 Active Tests: 3 . The number of tests in the Test Runs list, followed by the number of tests within the list that will be included in the next run. ▶  ALM connection status. The state of Sprinter's connection to ALM. You can double-click this icon to open the ALM Connection Dialog Box (described on page 56).

The main window also contains the following areas:

Plan Mode

- ▶ "Plan Area" on page 77
- ▶ "Definitions Group (Test/Component Tab)" on page 85
- ▶ "Steps Tab" on page 90

Run Mode

- ▶ "Run Setup Area" on page 132
- ▶ "Power Mode Group" on page 228
- ▶ "Run Setup Definitions Group" on page 141
- ▶ "Results Group" on page 206

Settings Dialog Box

This dialog box includes the following panes:

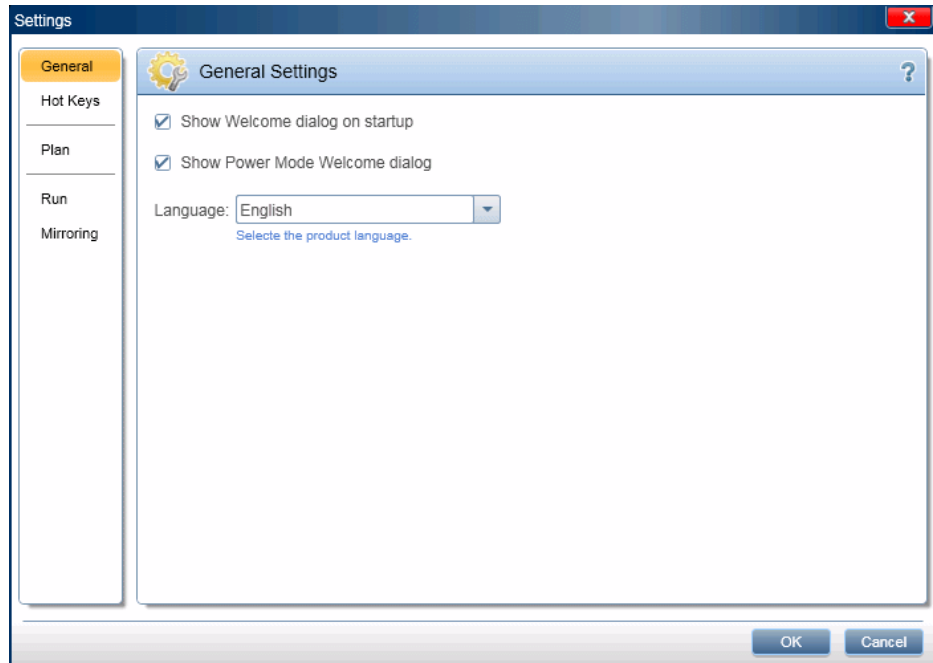
- ▶ "General Settings Pane (Settings Dialog Box)" on page 58
- ▶ "Hot Keys Settings Pane (Settings Dialog Box)" on page 58
- ▶ "Run Settings Pane (Settings Dialog Box)" on page 60

- ▶ "Plan Settings Pane (Settings Dialog Box)" on page 59
- ▶ "Mirroring Settings Pane (Settings Dialog Box)" on page 61

General Settings Pane (Settings Dialog Box)

This pane enables you to set general settings for Sprinter.

The following image shows the General Settings pane.



To access

Select **Settings** button  > **General** node.

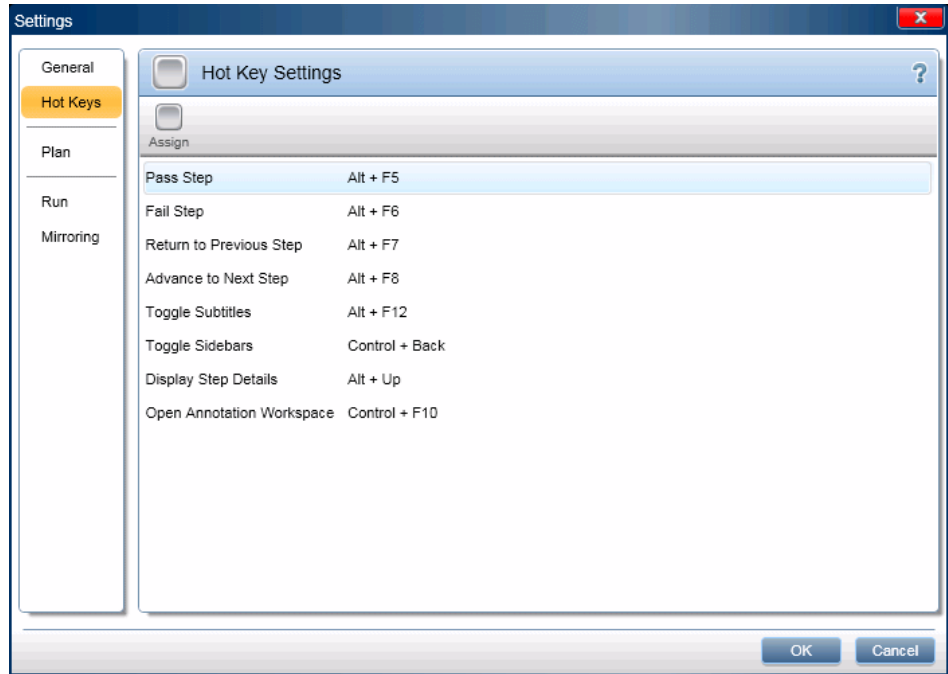
User interface elements are described below:

UI Elements	Description
Show Welcome dialog on startup	Opens the Welcome dialog box each time you start Sprinter. For details, see "Welcome Dialog Box" on page 52. Tip: You can also disable this dialog by clearing the Show on startup check box in the dialog box.
Show Power Mode Welcome dialog	Opens the Welcome to Power Mode dialog box when you activate Power Mode. Tip: You can also hide this dialog by clearing the Display this screen when Power Mode is turned on check box in the dialog box.
Language	A drop-down indicating the interface language. Note: For a change in the interface language to take effect, you must restart Sprinter.

Hot Keys Settings Pane (Settings Dialog Box)

This pane enables you to define hot keys for various functions in Sprinter.

The following image shows the Hot Keys pane.



To access

Select **Settings** button  > **Hot Keys** node.

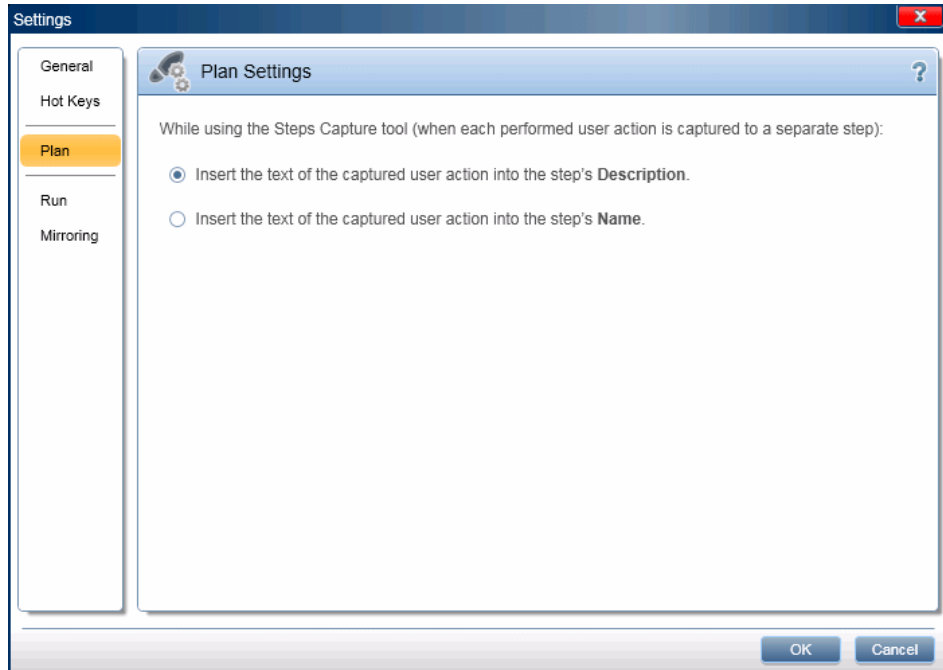
User interface elements are described below (unlabeled elements are shown in angle brackets>):


UI Elements	Description
Assign	<p>Assigns a new hot key to a function.</p> <p>To change the hot key for a function:</p> <ol style="list-style-type: none"> 1 Select the function from the list. 2 Click the Assign button. The Assign Hot Key dialog box opens. 3 Press the key combination you want for the hot key. 4 Click OK.
<Function list>	The list of functions and their currently defined hot keys.

Plan Settings Pane (Settings Dialog Box)

The **Plan** pane enables you to define the test’s Plan mode settings.

The following image shows the Authoring pane.



To access	Select Settings button  > Plan node.
Important information	This settings only applies when Single User Action per Step is selected in a Steps Capture session.

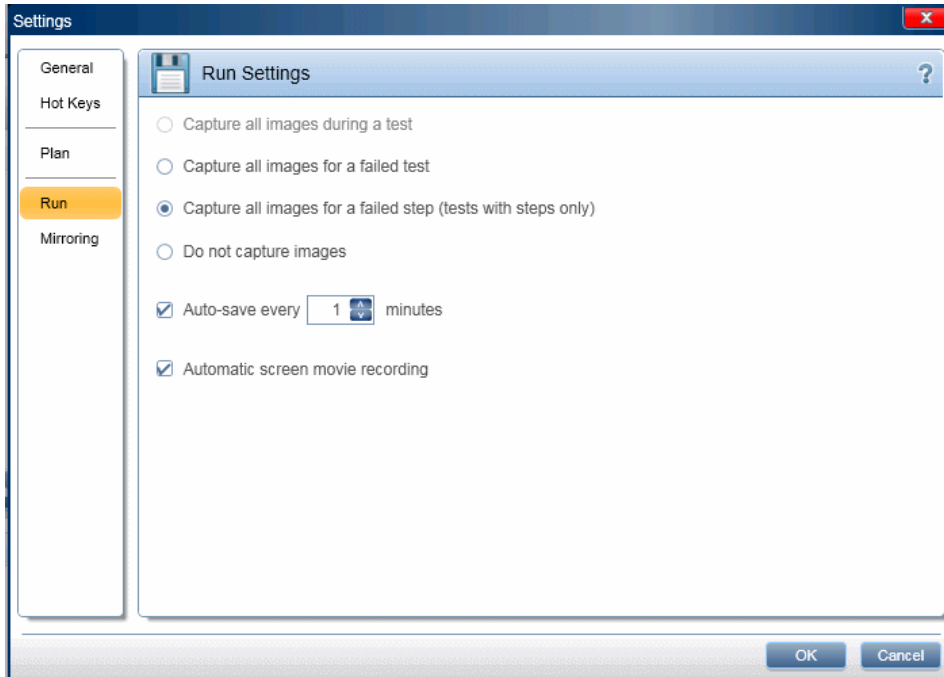
User interface elements are described below (unlabeled elements are shown in angle brackets>):

UI Elements	Description
Plan Settings	<p>These options indicate where to place the text of the captured action:</p> <ul style="list-style-type: none"> ▶ Insert the text of the captured user action into the step's Description. ▶ Insert the text of the captured user action into the step's Name.

Run Settings Pane (Settings Dialog Box)

This pane enables you to define when Sprinter saves screen captures and movies of your run, and autosave settings.





The following image shows the Run pane.



To access	Select Settings button  > Run node.
------------------	--

Important information	<ul style="list-style-type: none"> ▶ The options in the Run Settings pane that control screen captures are relevant only for tests that were run in Power Mode and determine which screen captures will be available for display for the actions in the Storyboard. For details, see "Storyboard Window" on page 211. ▶ Sprinter temporarily captures and saves images for each action in your run. The options in the Run Settings pane determine which captures will be saved with the run results and which will be discarded. ▶ The options in the Run Settings pane can also be enabled and disabled by your ALM administrator. If you do not have permissions in ALM, this pane's options will be disabled.
See also	"Testing on Multiple Machines - Overview" on page 296


User interface elements are described below:

UI Elements	Description
Capture all images during a test	Saves a screen capture of the application for every user action.  Relevant for tests run in Power Mode only.
Capture all images for a failed test	Saves a screen capture of the application for every user action in a failed run.  Relevant for tests run in Power Mode only.
Capture all images for a failed step (tests with steps only)	Saves a screen capture of the application for all failed steps.  Relevant for tests run in Power Mode only.
Do not capture images	Does not save any screen captures of the application.  Relevant for tests run in Power Mode only.

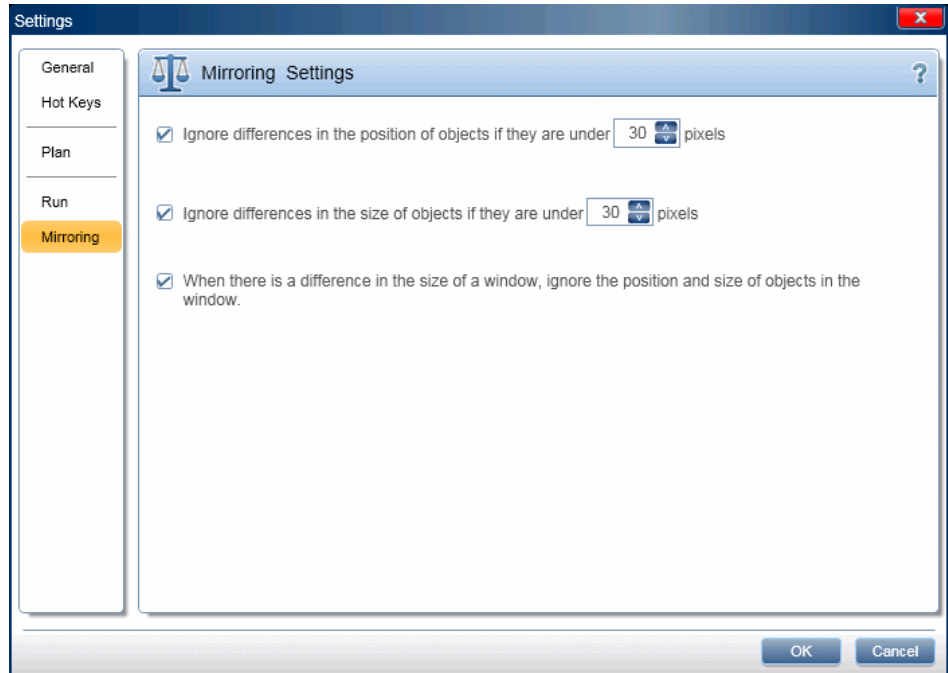
UI Elements	Description
Auto save every <value> minutes	Determines how often Sprinter automatically saves your test during a run.
Automatic screen movie recording	<p>Automatically records a movie of your run. You can use a Smart Defect to attach the recorded movie to an ALM defect.</p> <p>Default state: Cleared</p> <p>The screen movie functionality must first be enabled by your ALM administrator.</p>


 **Mirroring Settings Pane (Settings Dialog Box)**

This pane enables you to define how Sprinter compares and detects differences between primary and secondary machines in a test with mirroring.

 Mirroring is relevant for tests run in Power Mode only.

The following image shows the Mirroring pane.



To access	Select Settings button  > Mirroring node.
See also	<ul style="list-style-type: none"> ➤ "Testing on Multiple Machines - Overview" on page 296 ➤ "Rules Overview" on page 302

User interface elements are described below:

UI Elements	Description
<p>Ignore differences in the position of objects if they are under <value> pixels</p>	<p>Defines the number of pixels by which the location of an object can be different between the primary and secondary machines.</p> <p>If the same object's location differs by up to this number of pixels between the two machines, it will not be detected as a difference.</p>
<p>Ignore differences in the size of objects if they are under <value> pixels</p>	<p>Defines the number of pixels by which the size of an object can be different between the primary and secondary machines.</p> <p>If the same object's size differs by up to this number of pixels between the two machines, it will not be detected as a difference.</p>
<p>When there is a difference in the size of a window, ignore the position and size of objects in the window</p>	<p>Instructs Sprinter to ignore differences in the size and position of an object, when the window containing the object is a different size in the primary and secondary machines.</p>

Troubleshooting and Limitations - General

This section describes troubleshooting and limitations for Sprinter.

Sprinter Integrations

- ▶ Sprinter stores user information in ALM, in the **Sprinter** folder in the **Resources** folder. You should not modify this folder.
- ▶ When the ALM Test Instances Filter dialog box is open, if you navigate away from the dialog box, you may need to press ALT+TAB (for local machines) or ALT+INSERT (for remote machines) to return to the dialog box.
- ▶ Sprinter 11.50 and QuickTest Professional 11.00 cannot be installed on the same machine.

3

Creating Tests and Business Components

This chapter includes:

Concepts

- ▶ Test and Component Authoring Overview on page 72

Tasks

- ▶ How to Author a Test or Component on page 73

Reference

- ▶ Plan Area on page 78
- ▶ Open HP ALM Test/Business Component Dialog Box on page 82
- ▶ Save/Save As Dialog Box on page 84
- ▶ Check Out Dialog Box on page 87
- ▶ Check In Dialog Box on page 88
- ▶ Definitions Group (Test/Component Tab) on page 89
- ▶ Steps Tab on page 99
- ▶ Capture Sidebar on page 113
- ▶ Captured Steps Sidebar on page 115

Concepts

Test and Component Authoring Overview

Sprinter's **Plan** mode enables you to create and edit tests or components directly in Sprinter and save them to ALM. You can create and edit steps manually in the Steps tab, or use **Steps Capture** to automatically generate steps based on your user actions. You can then add screen captures or attachments to steps. You can define input parameters for each step, and also output parameters for components.

For task details, see "How to Author a Test or Component" on page 73.

For user interface details, see "Plan Area" on page 78.

Tasks

How to Author a Test or Component

This task describes how to create and manage tests and components in Sprinter.

This task includes the following steps:

- "Prerequisites" on page 73
- "Create a new test or component" on page 73
- "Manage version-controlled tests or components" on page 74
- "Open an existing test or component" on page 74
- "Manually add and edit steps" on page 75
- "Manage step parameters" on page 76
- "Manage step attachments (tests only)" on page 76
- "Manage component snapshots (components only)" on page 76
- "Save the test or component in ALM" on page 77

Prerequisites



Ensure that you have the required user permissions and connect to ALM as described in "How to Get Started with Sprinter" on page 50. Make sure that the toolbar shows **Plan** mode.

Create a new test or component



- To create a new test, click the **New** button in the **Plan** area. A new test is added to the **Tests and Components** list.
- To create a new business component, select **New > New HP ALM Business Component**. A new business component is added to the **Tests and Components** list.

Open an existing test or component



- To open a test, click the **Open** button in the **Plan** area.
- To open a business component, select **Open > Open HP ALM Business Component**.

If you are already connected to ALM, the **Open** dialog box opens, enabling you to select which ALM tests or components you want to open.

If you are not connected to ALM, the **ALM Connection** dialog box opens enabling you to first enter the server information. For details, see "ALM Connection Dialog Box" on page 56.

For details on the **Open ALM Test/Component** dialog box, see "Open HP ALM Test/Business Component Dialog Box" on page 82.

Manage version-controlled tests or components



If you open a test or component from an ALM project that supports version-control, the test or component opens in read-only mode unless you have already checked it out. The following functionality is available from the **Plan** area's **Versions** menu for managing version-control:

- To enable editing, use the **Check Out** option. The test or component is checked out for you, and only you can edit its contents. You can only check out the last version—not older versions.
- To release the check out of the test or component, use the **Check In** option. The test or component is checked in to the ALM project, and other users can now check out and edit that test or component.
- To cancel the check out of the test or component without changing the version number or saving any changes that you made to it, use the **Undo Check Out** option. The test or component is checked back in and all changes that you made after the check out are lost.

For details on the **Check Out** dialog box, see "Check Out Dialog Box" on page 87.

For details on the **Check In** dialog box, see "Check In Dialog Box" on page 88.

Manually add and edit steps

Use the **Steps** tab to:

- add, edit, move, and delete test or component steps
- import steps from Excel or CSV files
- format steps using rich text editing capabilities
- add screen captures and attachments to steps
- insert calls to an external ALM test
- insert parameters to steps

For details, see the "Steps Tab" on page 99.

Note: It is recommended that you limit the content of all fields that support rich text, such as **Description**, to 2500 characters.

Automatically add steps using Steps Capture

In the **Steps** tab, select an application for your test and then click the **Steps Capture** button to navigate within your application and perform typical user actions. For details, see "Steps Tab" on page 99.

While you perform actions, Sprinter captures them and converts the actions into steps. Using the **Captured Steps** sidebar, you can define whether to convert each user action to a step or to group multiple user actions into steps. For details, see "Captured Steps Sidebar" on page 115.

Manage step parameters

Add parameters to your test or component using the **Test/Component** tab's **Parameters** pane. You can then associate these parameters with steps in the **Steps** tab.

Note: For tests, only input parameters are supported. For components, input and output parameters are supported, per component.

For details on the **Parameters** pane, see "Parameters Pane (Plan Mode Definitions Group)" on page 92.

Manage step attachments (tests only)

Use the **Test** tab's **Attachments** pane to add and remove test attachments.

This pane is not available for components.

For details on the **Attachments** pane, see "Attachments Pane (Plan Mode Definitions Group)" on page 95.

Manage component snapshots (components only)

Use the **Snapshots** pane to add, annotate, or remove screen captures for components. These screen captures are then saved with your component in ALM.

This pane is not available for tests.

For details on the **Snapshots** pane, see "Snapshot Pane (Plan Mode Definitions Group)" on page 97.

Save the test or component in ALM

In the **Tests and Components** pane, do one of the following:

- ▶ Click the **Save** button. The Save dialog box opens for tests or components that you save for the first time.
- ▶ Select **Save > Save As**. The Save As dialog box opens and allows you to save your test or component with another name.

For details on the **Save/Save As** dialog box, see "Save/Save As Dialog Box" on page 84.

Reference

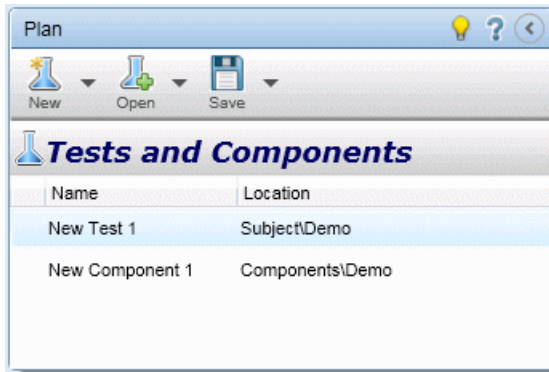
Plan Area

This area enables you to create, open, and save tests and components.

Tasks you can accomplish with the **Plan** area:




- ▶ "How to Author a Test or Component" on page 73




The following image shows the Plan area.




To access	<ol style="list-style-type: none"> 1 Start Sprinter and close the Welcome window, if open. 2 Click Plan in the Sprinter title bar.
Important information	If you are not connected to ALM and you create or open a test or component, the ALM Connection Dialog Box opens, enabling you to connect to ALM first.
See also	"Things to Remember When You Work with the Tests and Components List" on page 81



User interface elements are described below (unlabeled elements are shown in angle brackets>):

UI Element	Description
	<p>Creates a new test or component and adds it to the Tests and Components list.</p> <p>Drop-down options:</p> <ul style="list-style-type: none"> ▶ New HP ALM Test. (Default) Adds a new blank test to the Tests and Components list. ▶ New HP ALM Business Component. Adds a new component to the Tests and Components list.
	<p>Adds an existing test or component to the Tests and Components list.</p> <p>Drop-down options:</p> <ul style="list-style-type: none"> ▶ Open HP ALM Test. (Default) Opens the Open ALM Test dialog box. The tests you select are added to the Tests and Components list. ▶ Open HP ALM Business Component. Opens the Open ALM Business Component dialog box. The components you select are added to the Tests and Components list. <p>For details, see "Open HP ALM Test/Business Component Dialog Box" on page 82</p>
	<p>Opens the Save/Save As Dialog Box (described on page 84), which enables you to save the selected tests or components in the Tests and Components list.</p> <p>Shortcut key: Ctrl+S</p> <p>Drop-down options:</p> <ul style="list-style-type: none"> ▶ Save. Saves the selected test or component. ▶ Save As. Saves a copy of the selected test or component to the specified location. <p>Note: The save options are disabled when more than one test or component is selected.</p>

UI Element	Description
 <p>Versions</p>	<p>Enables you to manage versions of tests and components.</p> <p>Drop-down options:</p> <ul style="list-style-type: none"> ▶ Check Out. Checks out the test or component from HP ALM. ▶ Check In. Checks the test or component into HP ALM. ▶ Undo Check Out. Cancels the check out of the test or component and discards all of the changes made since it was checked out. <p>Notes:</p> <ul style="list-style-type: none"> ▶ These options are enabled only when you are connected to an ALM project that supports version control. ▶ Viewing version history and baseline history of tests and components is not supported. <p>Important:</p> <ul style="list-style-type: none"> ▶ Before upgrading a project in ALM, make sure to check-in all Sprinter files in the Test Resources module.
<p>Name</p>	<p>The list of open tests and components.</p> <p>Notes:</p> <ul style="list-style-type: none"> ▶ When you select a test or component, the details pane displays the Definitions Group (Test/Component Tab) for that test or component. For details, see "Definitions Group (Test/Component Tab)" on page 89. ▶ An asterisk next to a test or component name indicates the test or component has changes that have not been saved. ▶ A warning symbol  next to a test or component indicates a problem with the definitions of the test or component or in the Steps tab. When you select the test or component, the warning symbol is also displayed adjacent to the node in the Definitions group or step, that is causing the warning. Select the node and review the displayed definitions for any warning messages. For details, see "Definitions Group (Test/Component Tab)" on page 89". ▶ A lock symbol  next to a test or component indicates that it is currently locked (in a non-versioned project) or checked-out to another user (in a versioned project).

UI Element	Description
<Context menu (right-click) options>	<p>The following options are available from the context menu, when you select a test or component from the list.</p> <ul style="list-style-type: none"> ➤ Check Out. Checks out the test or components from HP ALM. ➤ Check In. Checks in the test or components into HP ALM. ➤ Undo Check Out. Cancels the check out of the test or component and discards all of the changes made since it was checked out. ➤ Remove. Removes the selected tests or components from the Tests and Components list. ➤ Save. Saves the selected test or component. ➤ Save As. Saves a copy of the selected test or component to the specified location.
	Hide/Show. Hides or shows the Plan area.

Things to Remember When You Work with the Tests and Components List

- A warning symbol  next to a test or component indicates a problem with the definitions of the test or component or in the **Steps** tab. When you select the test or component, the warning symbol is also displayed adjacent to the node in the Definitions group or step, that is causing the warning. Select the node and review the displayed definitions for any warning messages. For details, see "Definitions Group (Test/Component Tab)" on page 89.
- A lock symbol  next to a test or component indicates that it is currently locked by another user (in a non-versioned project) or checked-out by another user (in a versioned project).
- For a full description of all the features in the **Tests and Components** list, see "Plan Area" on page 78.

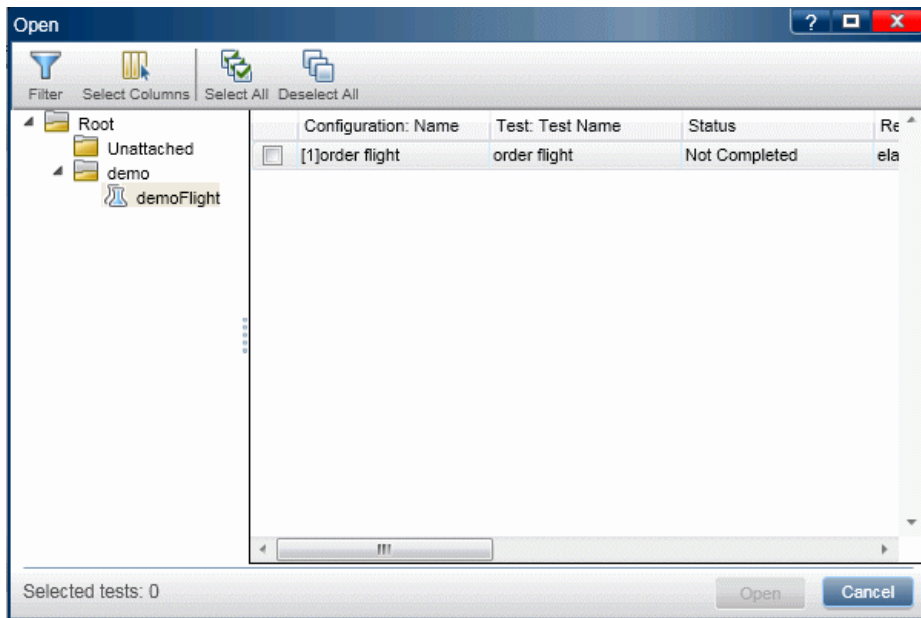
Open HP ALM Test/Business Component Dialog Box

This dialog box enables you to open a test or component from ALM. For tests, you open a test from the ALM Test Plan module. For components, you open a components from the ALM Business Components module. You can filter the tests or components that are displayed to make selection easier.

Tasks you can accomplish with the Open dialog box:





- "How to Author a Test or Component" on page 73

The following image shows the Open ALM Test dialog box.



To access	In the Plan area, select Open > Open HP ALM Test or Open > Open HP ALM Business Component .
Important information	The options in this dialog box are identical when opening tests and components.

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Elements	Description
	<p>Opens the ALM Filter dialog box, enabling you to filter the tests or components based on specific criteria. For details on filtering tests and components, click Help in the Test Instances Filter dialog box.</p>
	<p>Opens the ALM Select Columns dialog box, enabling you to select which columns to view in the dialog box. For details on selecting columns, click Help in the Select Columns dialog box.</p>
	<p>Selects all the currently displayed tests or components in the list.</p>
	<p>Deselects all the currently displayed tests or components in the list.</p>
<p><folder list></p>	<p>Located on the left side of the dialog box. Displays all the test or component folders available in your project. Note: You cannot move items within a folder.</p>
<p><Test list>/ <Component list></p>	<p>Located on the right side of the dialog box. The list of tests or components in the selected folder in the folder list. Select the check boxes next to the tests or components you want to open in Sprinter.</p>

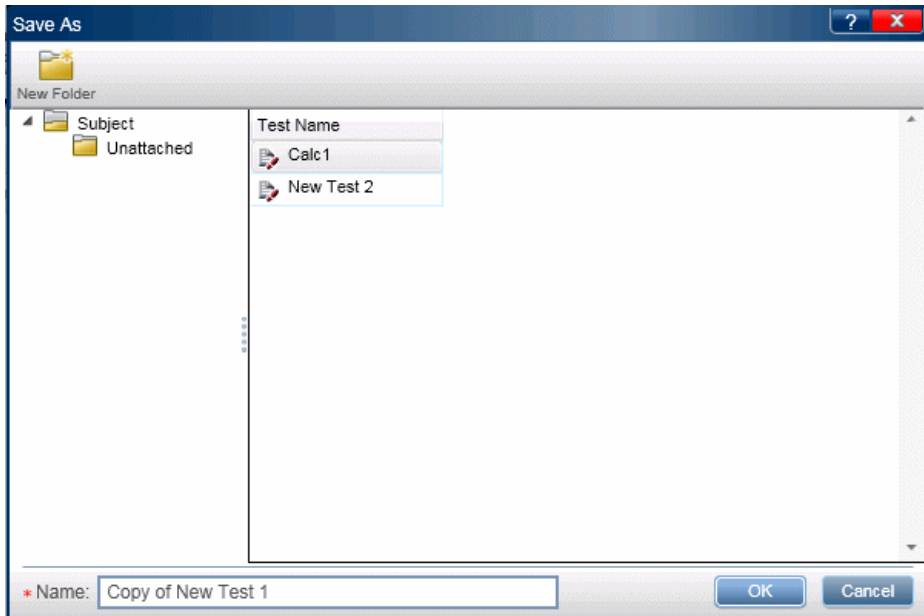
Save/Save As Dialog Box

This dialog box enables you to select an ALM location in which to save your test or component.

Tasks you can accomplish with the Save/Save As dialog box:


- ▶ "How to Author a Test or Component" on page 73

The following image shows the Save dialog box.



To access	<p>In the Plan area, do one of the following:</p> <ul style="list-style-type: none"> ▶ Click Save or press CTRL+S ▶ Select Save > Save As
Important information	<ul style="list-style-type: none"> ▶ The options in the Save dialog box are identical to the options in the Save As dialog box. ▶ The options in the Save/Save As dialog box are identical when saving tests and components. ▶ The Save dialog box opens for tests or components that you save for the first time. ▶ The Save As dialog box opens and allows you to rename a test or component.

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element	Description
	<p>Opens the New Folder Dialog Box (described on page 86), which enables you to add a folder under the currently selected folder in the folder list.</p>
<folder list>	<p>Located on the left side of the dialog box. Displays all the test or component folders available in your project.</p> <p>Note: You cannot move items within a folder.</p>
<Test list>/<Component list>	<p>Located on the right side of the dialog box. The list of tests or components in the selected folder in the folder list.</p>

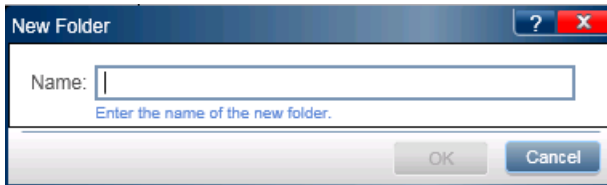
New Folder Dialog Box

This dialog box enables you to create a new folder in ALM in which to save your test or component.

Tasks you can accomplish with the New Folder dialog box:

- "How to Author a Test or Component" on page 73

The following image shows the New Folder dialog box.



To access	In the Save/Save As Dialog Box, click New Folder .
See also	"Save/Save As Dialog Box" on page 84

Descriptions of the user interface elements are shown when you hover over them.

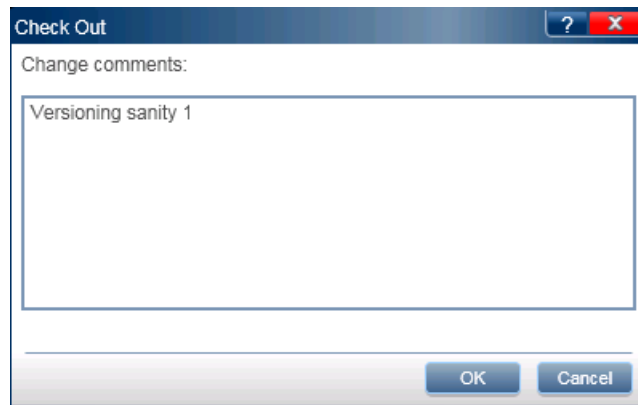
Check Out Dialog Box

This dialog box enables you to add a comment that will be associated with the checkout.

Tasks you can accomplish with the Check Out dialog box:

- "How to Author a Test or Component" on page 73

The following image shows the Check Out dialog box.



To access	In the Plan area, select Versions > Check Out .
Important information	You can only check out the latest version.
See also	"Manage version-controlled tests or components" on page 74

User interface elements are described below:

UI Element	Description
Change Comments	A text area for describing the reason for the check out.

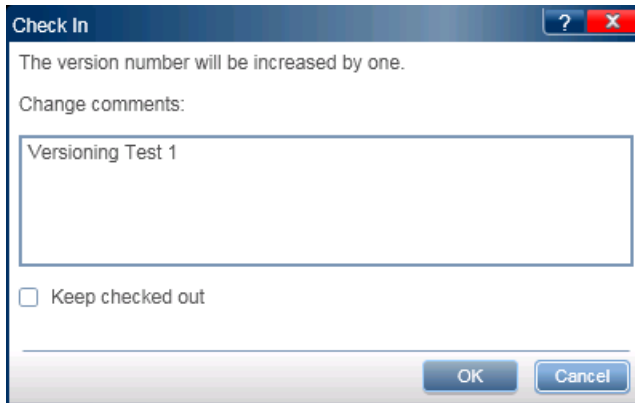
Check In Dialog Box

This dialog box enables you to add a comment that will be associated with the checkin.

Tasks you can accomplish with the Check In dialog box:

- ▶ "How to Author a Test or Component" on page 73

The following image shows the Check In dialog box.



To access	In the Plan area, select Versions > Check In .
Important information	After the checkin, the version number will be increased by one.
See also	"Manage version-controlled tests or components" on page 74

User interface elements are described below:

UI Element	Description
Change comments	A text area for describing the change.
Keep checked out	Keeps the test or component checked out. This is ideal for: <ul style="list-style-type: none"> ▶ Creating a new test version. When you enable this option, provide a comment, and click OK. Sprinter creates a new version of the test in ALM. ▶ Entering comments while still working in a change.

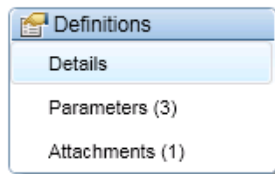
Definitions Group (Test/Component Tab)

The Plan mode's **Definitions** group is located in the left side of the **Test** or **Component** tab in the main window.

This group includes the following panes:

- ▶ "Details Pane (Plan Mode Definitions Group)" on page 90
- ▶ "Parameters Pane (Plan Mode Definitions Group)" on page 92
- ▶ "Attachments Pane (Plan Mode Definitions Group)" on page 95 (Tests only)
- ▶ "Snapshot Pane (Plan Mode Definitions Group)" on page 97 (Components only)

The **Parameters** and **Attachments** nodes (for ALM tests only) indicate in parenthesis the number of included items for the selected test or component.



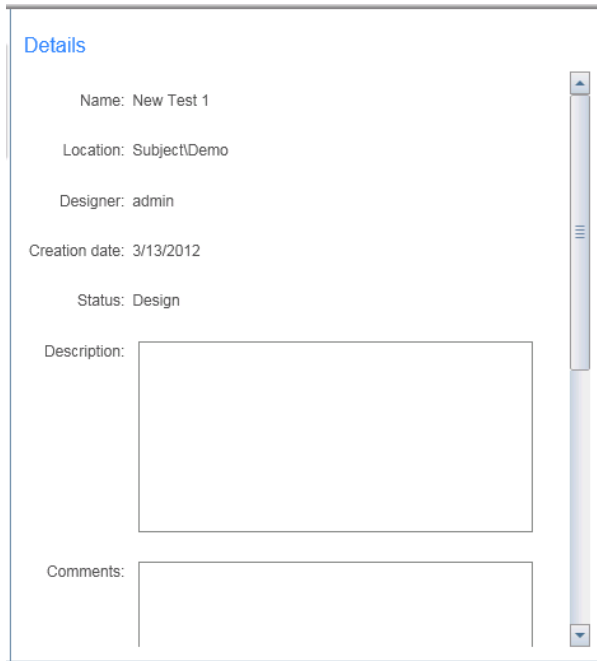
 **Details Pane (Plan Mode Definitions Group)**

This pane displays the test or component details.

Tasks you can accomplish with the General Settings:

- ▶ "How to Author a Test or Component" on page 73

The following image shows the Details pane for a test.



To access	<p>Do the following:</p> <ol style="list-style-type: none"> 1 In the Plan area, select a test or component in the Tests and Components list. 2 Click the Test or Component tab in the right pane. 3 Select the Definitions > Details node.
Important information	<ul style="list-style-type: none"> ▶ The Details pane for tests has a read-only Designer field; The Details pane for components has a read-only Created by field; ▶ If your ALM test or component has user-defined fields, they are displayed and can be edited in the Details pane. ▶ You can save ALM tests and component only after you enter information in mandatory user-defined fields (marked with an asterisk), if they were defined for the project.

Descriptions of the user interface elements are available when you hover over them.

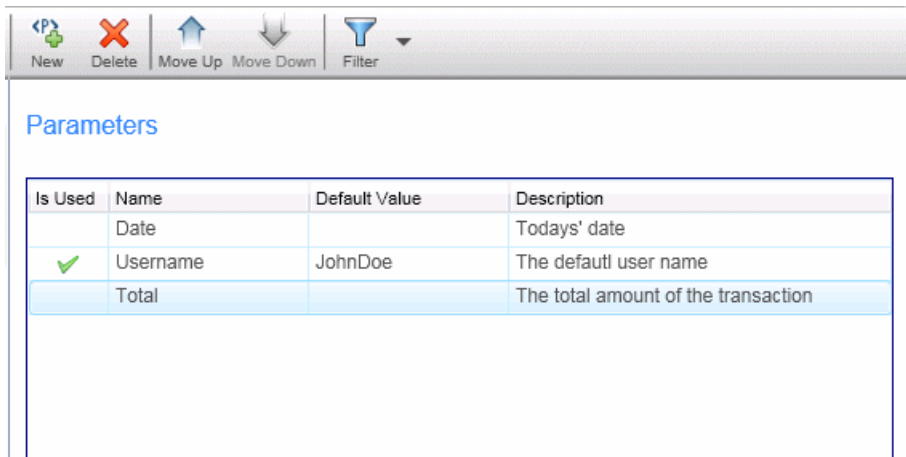
Parameters Pane (Plan Mode Definitions Group)

This pane enables you to create parameters and edit their details. It displays existing parameters and allows you to edit their values.

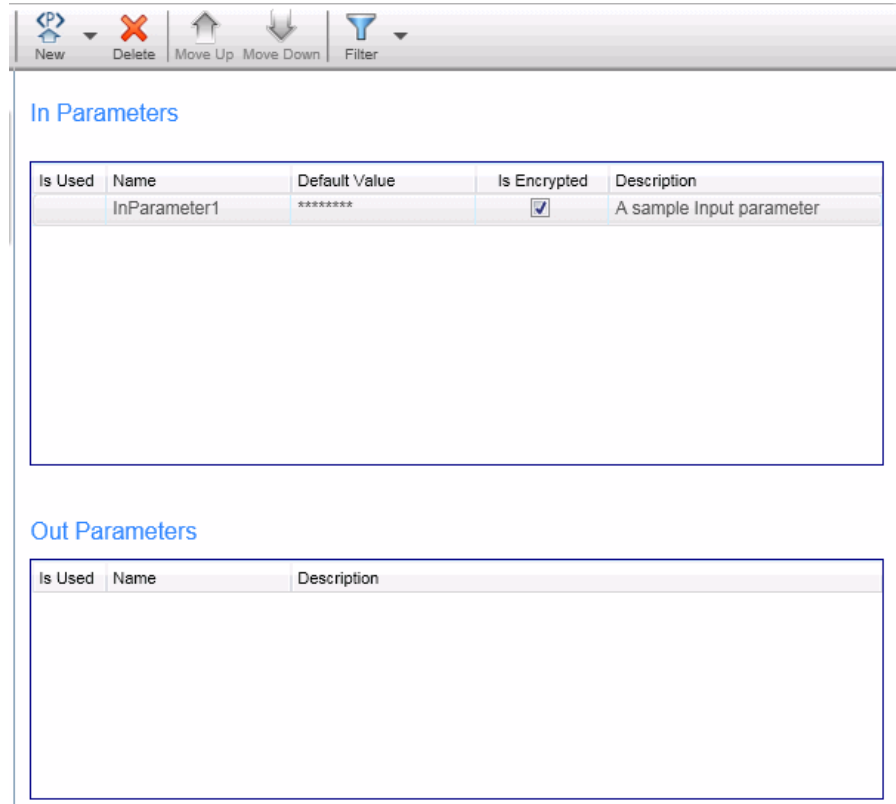
Tasks you can accomplish with the Parameters pane:

- "How to Author a Test or Component" on page 73

The following image shows the Parameters pane for tests.




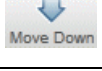



The following image shows the Parameters pane for components.



<p>To access</p>	<p>Do the following:</p> <ol style="list-style-type: none"> 1 In the Plan area, select a test or component from the Tests and Components list. 2 Click the Test or Component tab in the right pane 3 Select the Definitions > Parameters node.
<p>Important information</p>	<p>For tests, only input parameters are supported. For components, both input and output parameters are supported.</p>

User interface elements are described below:

UI Elements	Description
	Adds a new input or output parameter (for components only). The drop-down provides these options: <ul style="list-style-type: none"> ▶ New Input Parameter (default) ▶ New Output Parameter
	Deletes the selected parameters from the list.
	Moves the selected parameter up the list.
	Moves the selected parameter down the list.
	Enables you to filter the parameter list according to a text string. Note: You can use plain text with the wildcard, *.
Is Used	Indicates whether the parameter is used by the test or component.
Name	The name of the parameter.
Default Value	The default value for the parameter. Available only for: input parameters
Is Encrypted	Indicates whether to encrypt the parameter. This option is automatically selected if the parameter is already encrypted in ALM. Available only for: input parameters defined for components
Description	A description of the parameter and its purpose.

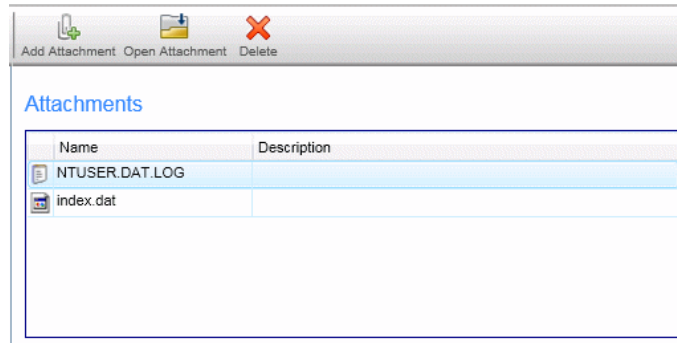
Attachments Pane (Plan Mode Definitions Group)

This pane displays and enables you to manage attachments that are used in your test. This pane is not available for components.

Tasks you can accomplish with the Attachments pane:




- "How to Author a Test or Component" on page 73

The following image shows the Attachments pane.



To access	<p>Do the following:</p> <ol style="list-style-type: none"> 1 In the Plan area, select a test from the Tests and Components list. 2 Click the Test tab in the right pane. 3 Select the Definitions > Attachments node.
Important information	This pane is only available for tests.

User interface elements are described below:

UI Elements	Description
 Add Attachment	Adds an attachment to the list.
 Open Attachment	Opens the selected attachment in an external application, corresponding to the attachment's file type. Note: To open the attachment, the associated application must be installed on your computer.
 Delete	Deletes the selected attachment from the list.
Name	The file name of the attachment.
Description	A textual description of the attachment.

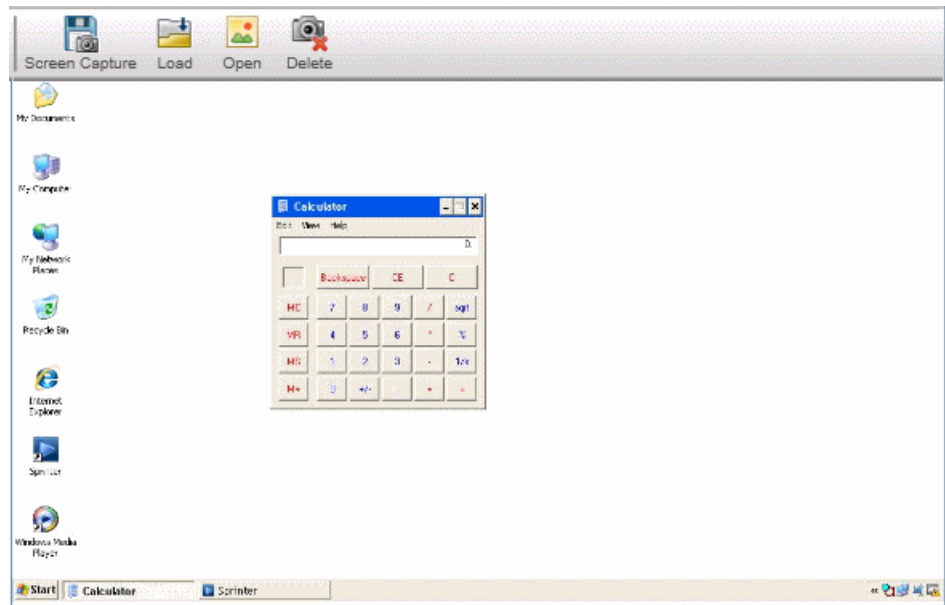
Snapshot Pane (Plan Mode Definitions Group)

This pane displays and enables you to manage screen captures for components. This pane is not available for tests.

Tasks you can accomplish with the Snapshot pane:





- "How to Author a Test or Component" on page 73

The following image shows the Snapshot pane.



To access	<p>Do the following:</p> <ol style="list-style-type: none"> 1 In the Plan area, select a component from the Tests and Components list. 2 Click the Component tab in the right pane. 3 Select the Definitions > Snapshot node.
Important information	<ul style="list-style-type: none"> ➤ This pane is not available for tests. ➤ This pane enables you to save one screen capture per component. To attach screen captures to individual steps, use the Screen Capture feature, as described in "Steps Tab" on page 99.

User interface elements are described below:

UI Elements	Description
	<p>Screen Capture. Opens the Capture sidebar for capturing the current screen and attaching it to the current component. For details, see the Capture Sidebar on page 113.</p>
	<p>Load. Enables you to select an image from the network and attach it to the component.</p> <p>Supported image formats: JPG, PNG, BMP, GIF</p> <p>Note: ALM automatically converts the snapshot to a PNG file when you save the component.</p>
	<p>Open. Opens the snapshot in the machine's default image viewer.</p>
	<p>Delete. Deletes the attached screen capture from the component.</p>

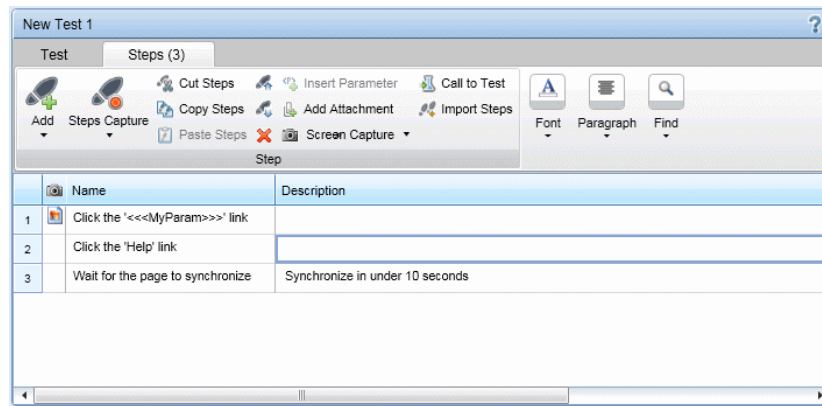
Steps Tab

This tab displays the steps in your test or component and enables you to edit, move, and delete steps. You can also add attachments, screen captures, and calls to external ALM tests.

Tasks you can accomplish with the Steps tab:

- "How to Author a Test or Component" on page 73

The following image shows the Steps tab for a manual test.



To access	<p>Do the following:</p> <ol style="list-style-type: none"> 1 In the Plan area, select a test or component from the Tests and Components list. 2 Click the Steps tab.
Important information	<ul style="list-style-type: none"> ➤ You can resize the Sprinter window and the columns in the display to view all the information. ➤ Right-click the column header area to select which columns to display. ➤ Parameters in steps are represented by <<<parameter name>>>. If a parameter was deleted from the Parameters list, it is displayed as <parameter name>.
See also	"Capture Sidebar" on page 113

The Steps tab contains a ribbon and a grid representation of the steps.

The ribbon contains the following sections:





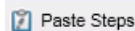
Steps Tab - Ribbon






The Ribbon contains the following sections:



- Step Section
- Font Section
- Paragraph Section
- Find Section

Step Section

The ribbon's **Step** section lets you manage the test's or component's steps. The following table describes the user interface elements:

UI Elements	Description
	<p>Adds a new step to the steps grid.</p> <p>Drop-down options:</p> <ul style="list-style-type: none"> ➤ After Current Step (Default) (ALT+N) ➤ Before Current Step (SHIFT+ALT+N) ➤ After All Steps (CTRL+ALT+N)
	<p>Starts a Steps Capture session, in which you navigate your application and perform user actions as you would in a regular run session. Sprinter captures each user action, converts it to a step, and adds it after the selected step in the steps grid.</p> <p>For details on the functionality available with a Steps Capture session, see "Captured Steps Sidebar" on page 115.</p>
  	<p>Cut/Copy/Paste Steps. Allows you to use cut, copy, and paste individual or multiple steps.</p>

UI Elements	Description
	<p>Move Step Up/Down. Moves the selected step up or down the steps grid.</p>
	<p>Delete Steps. Deletes the selected steps.</p>
	<p>Insert Parameter. Opens the Insert Parameter Dialog Box (described on page 106), which enables you to insert a parameter at the cursor's location in the Description or Expected Results fields.</p>
	<p>Add Attachment. Adds a file from the file system as an attachment to the selected step (tests only).</p>
	<p>Screen Capture. Enables you to add a screen capture to the selected step (ALT+C).</p> <p>Drop-down options:</p> <ul style="list-style-type: none"> ▶ Take Screen Capture. Opens the Capture sidebar, allowing you to take a screen capture of the desktop and attach it to the selected step. For details, see "Capture Sidebar" on page 113. ▶ Delete Screen Capture. Removes the attached screen capture from the selected step.

UI Elements	Description
	<p>Call to Test. Opens the Call to Test Dialog Box (described on page 109), which enables you to insert a call to an external ALM test as a step in your test. When you run your test, the steps of the external test are displayed in the Steps sidebar.</p> <p>Note: You can only insert calls to manual tests.</p>
	<p>Import Steps. Enables you to import steps from an Excel or CSV file.</p> <p>The imported file should comply with the following guidelines:</p> <ul style="list-style-type: none"> ▶ The table must be located in the workbook's first sheet. ▶ The steps must be declared in a table structure, with the headers on the top and the step data beneath them. ▶ The table's headers must match the columns in the Steps pane. For CSV files, make sure the header row is separated from the data row with a character defined as a common separator in the machine's locale. ▶ The standard columns (Name, Description, Expected Result) can have either an English or local language title. ▶ User defined (UDF) column names should be identical to the field's label in ALM Customization.

Font Section

The ribbon's **Font** section lets you format text in fields using rich-text capabilities, such as **Description** and **Expected Result**, or user-defined fields of **Memo** type. It includes the following standard controls:

- ▶ Select a Font
- ▶ Set the Font Size
- ▶ Increase/Decrease Font Size
- ▶ Set the Text Highlight Color
- ▶ Set the Text Color
- ▶ Set Text Decoration: Bold/Italic/Underline
- ▶ Remove Text Formatting


Paragraph Section

The ribbon's **Paragraph** section lets you set the paragraph properties to text in the **Description** and **Expected Result** fields. It includes the following standard controls:

- Create Bulleted Entries
- Create Numbered Entries
- Indent Right/Left
- Align Text Left/Center/Right/Justify



Find Section

The ribbon's **Find** section lets you search the text associated with the steps. The following table describes the user interface elements:

UI Elements	Description
<search text>	The text to find in the search in the steps. You can search for text in the Name , Description or Expected Results fields, or in any user-defined field.
	Search Down/Up. Allows you to choose the direction of the search
Match whole word	Instructs the search engine to find a whole word.

Steps Tab - Steps Grid

The Steps grid shows the test's or component's in a grid representation. The following table describes the user interface elements (unlabeled elements are shown in angle brackets):

UI Elements	Description
	Screen Capture. Indicates whether a screen capture is attached to the selected step. The Screen Capture icon  indicates that a screen capture exists.
Name	The name of the step. Default value (for new steps): Step <NUMBER>
Description	A textual description of the step. Tip: This field supports rich-text.
Expected Result	The expected result of the step. Tip: This field supports rich-text.
<user-defined fields>	(Optional) If your ALM project has user-defined fields, they are displayed in the steps grid by their logical names. A red asterisk in the header of a user-defined field, indicates that the field is mandatory—you must provide a value.
Attachments	The list of files that are attached to the step (tests only).

UI Elements	Description
<p><Context menu (right-click) options> - Steps column</p>	<p>The following options are available when you right-click the Step number column in the Steps grid:</p> <ul style="list-style-type: none"> ➤ Cut Steps (CTRL + X) ➤ Copy Steps (CTRL + C) ➤ Paste Steps (CTRL + V) ➤ Add Step Before Current Step (SHIFT + ALT + N) ➤ Add Step After Current Step (ALT + N) ➤ Delete Step (CTRL + DEL)
<p><Context menu (right-click) options> - editable text columns</p>	<p>The following options are available when you right-click editable text in the steps grid:</p> <ul style="list-style-type: none"> ➤ Cut ➤ Copy ➤ Paste

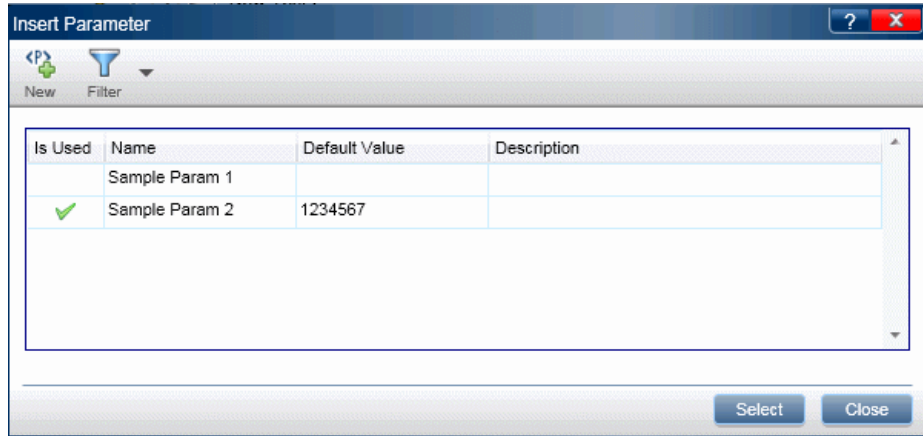
Insert Parameter Dialog Box

This dialog box enables you to select a parameter from a list to insert and use in a step. You can also add a new parameter to the list.

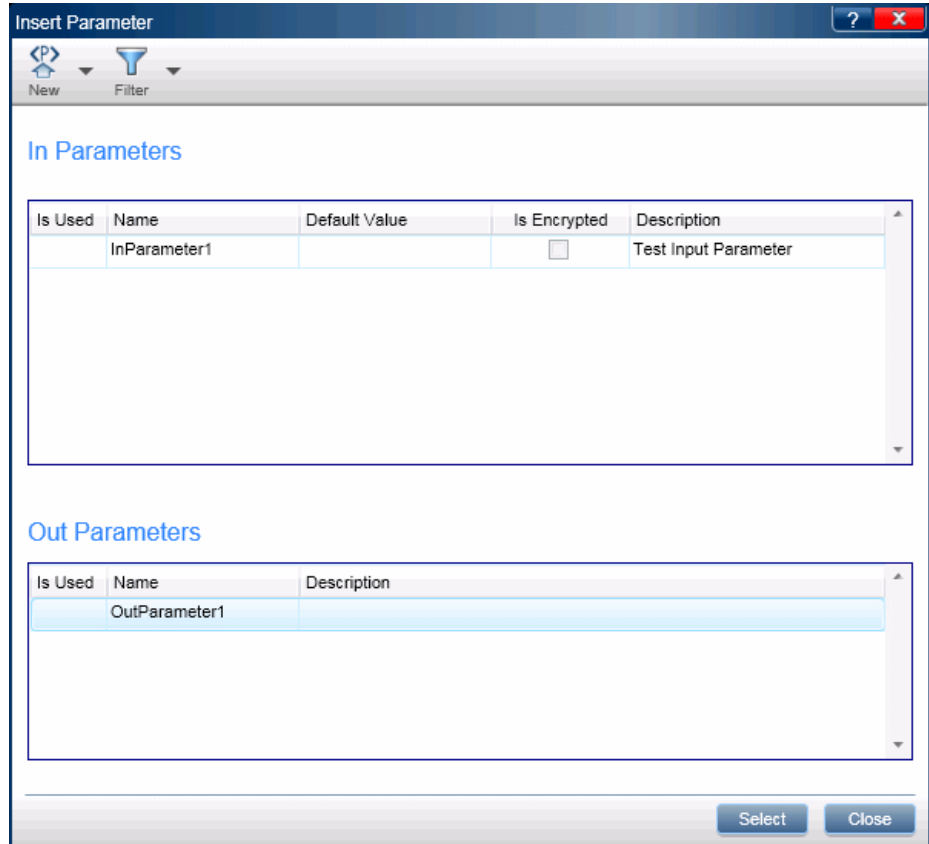
Tasks you can accomplish with the Insert Parameter dialog box:

- ▶ "How to Author a Test or Component" on page 73

The following image shows the Insert Parameter dialog box for tests.



The following image shows the Insert Parameter dialog box for components.



<p>To access</p>	<p>Do the following:</p> <ol style="list-style-type: none"> 1 In the Steps Table, click within a step's Description or Expected Result column. 2 Click Insert Parameter.
<p>Important information</p>	<p>For tests, only input parameters are supported. For components, input and output parameters are supported.</p>
<p>See also</p>	<p>"New Parameter Dialog Box" on page 108</p>

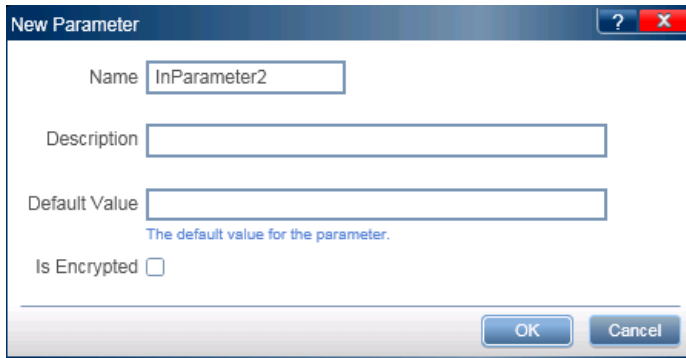
New Parameter Dialog Box

This dialog box enables you to define a new parameter to add to the list of available parameters.

Tasks you can accomplish with the New Parameter dialog box:

- "How to Author a Test or Component" on page 73

The following image shows the New Parameter dialog box.



To access	In the Insert Parameter Dialog Box, click New .
Important information	<ul style="list-style-type: none"> ➤ The Is Encrypted option is only available for input business components. When checked, the Default Value field shows an encrypted value and is not editable. ➤ You can also add parameters directly to the Parameters Pane (Plan Mode Definitions Group) (described on page 92).

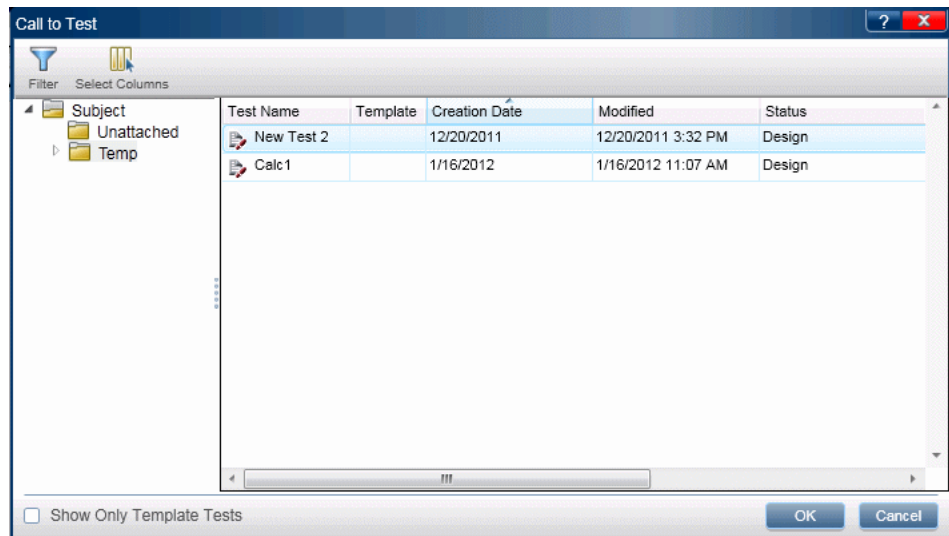
Call to Test Dialog Box

This dialog box enables you to insert a call to an external ALM test as a step in your test. When you run your steps, the steps of the external test are displayed in the Steps sidebar. This feature is not supported for components.

Tasks you can accomplish with the Call to Test dialog box:



- "How to Author a Test or Component" on page 73

The following image shows the Call to Test dialog box.



To access	In the Steps Tab, click the Call to Test button.
Important information	<ul style="list-style-type: none"> ➤ You can only insert calls to manual tests. ➤ Call to Test is not supported for components.

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Elements	Description
	<p>Opens the ALM Filter dialog box, enabling you to filter the tests based on specific criteria. For details on filtering tests and components, click Help in the Test Instances Filter dialog box.</p>
	<p>Opens the ALM Select Columns dialog box, enabling you to select which columns to view in the dialog box. For details on selecting columns, click Help in the Select Columns dialog box.</p>
<p><folder list></p>	<p>Located on the left side of the dialog box. Displays all the test folders available in your project.</p> <p>Note: You cannot move items within a folder.</p>
<p><Test list></p>	<p>Located on the right side of the dialog box. The list of tests in the selected folder in the folder list. Select the test you want to call.</p>
<p>Show only template tests</p>	<p>Filters the test list to display only template tests.</p> <p>Default state: Selected</p>

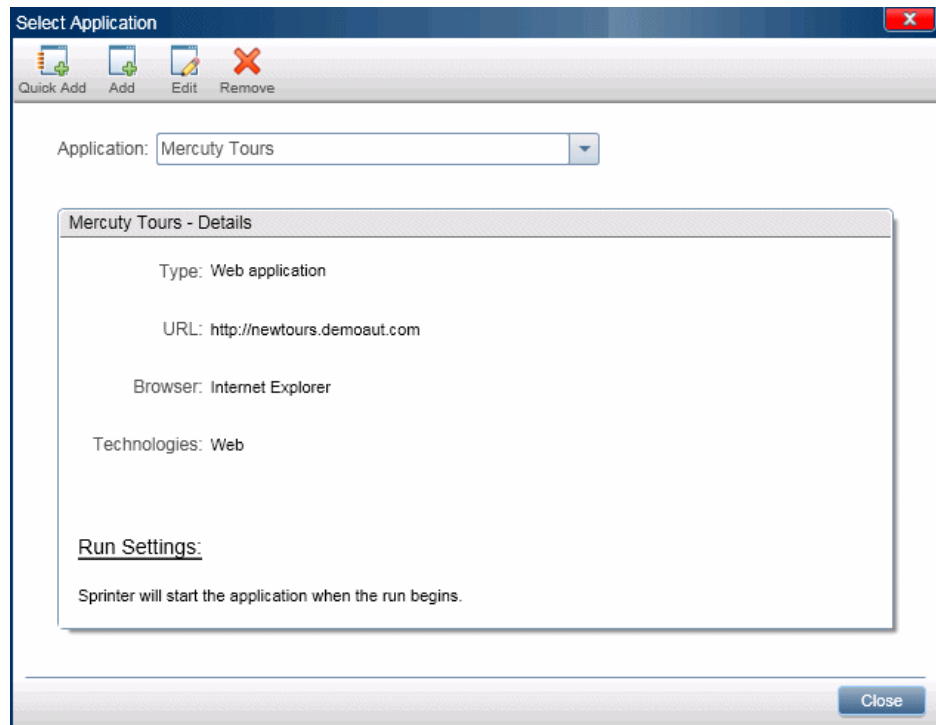
Select Application Dialog Box

This dialog box enables you to define or select the application that your test will use. You can also add, edit, or delete existing applications.

Tasks you can accomplish with the Select Application dialog box:





- "How to Author a Test or Component" on page 73

The following image shows the Select Application dialog box when there are previously defined applications.



To access	<p>Do the following:</p> <ol style="list-style-type: none"> 1 Enter Plan mode. 2 Open or create a new test or business component. 3 Select the Steps tab. 4 Expand the Steps Capture button and choose Select Application from the drop-down.
Important information	For details on how Sprinter maintains the list of applications, see "How User Information is Maintained" on page 47.
See also	The functionality of this dialog box is similar to the functionality for managing applications when working in Run mode. For details, see "Applications" on page 223.

User interface elements are described below (unlabeled elements are shown in angle brackets>):

UI Elements	Description
	Opens the Quick Add Application Dialog Box (described on page 234), enabling you to add an application to your application list from a list of currently running applications.
	Opens the Add/Edit Application Dialog Box (described on page 237), enabling you to manually define a new application to add to your application list.
	Opens the Add/Edit Application Dialog Box (described on page 237), enabling you to edit the application details for the selected application in the application list.
	Removes the selected application from the application list.

UI Elements	Description
Application	<p>The list of available applications. Use the Add, QuickAdd, Edit, and Remove buttons to manage the list of applications.</p> <p>To use a previously defined application, enter the first character of the name and then select it from the displayed list.</p> <p>For details on how Sprinter maintains the list of applications, see "How User Information is Maintained" on page 47.</p>
Application details area	<p>Displays information about the application you selected in the Application list. Click the Edit button to open the Add/Edit Application Dialog Box (described on page 237) and edit these details.</p>

Capture Sidebar



This sidebar enables you to add a snapshot to a business component or to a test or component step.

Tasks you can accomplish with the **Capture** sidebar:




- "How to Author a Test or Component" on page 73

The following image shows the **Capture** sidebar.



<p>To access</p>	<p>To add a component snapshot:</p> <ol style="list-style-type: none"> 1 In the Plan area, select a component in the Tests and Components list. 2 In the right pane, select the Component tab and click on the Snapshot node. 3 Click the Screen Capture button. <p>To add a step snapshot:</p> <ol style="list-style-type: none"> 1 In the Plan area, select an entry in the Tests and Components list. 2 In the right pane, select the Steps tab. 3 Click the Screen Capture button.
<p>Important information</p>	<ul style="list-style-type: none"> ➤ To close the sidebar, click the Cancel  button. ➤ To lock the sidebar in the open position, click the thumbtack  icon. ➤ To reposition the sidebar, click and drag on the sidebar header.

User interface elements are described below:

UI Elements	Description
	<p>Capture. Captures the current screen and closes the sidebar.</p>
	<p>Annotate Screen Capture. Captures a screenshot of the screen and opens it in the annotation workspace. For details, see the "Annotation Tools Sidebar" on page 196.</p>
	<p>Cancel. Ends the capture session without performing a screen capture.</p>

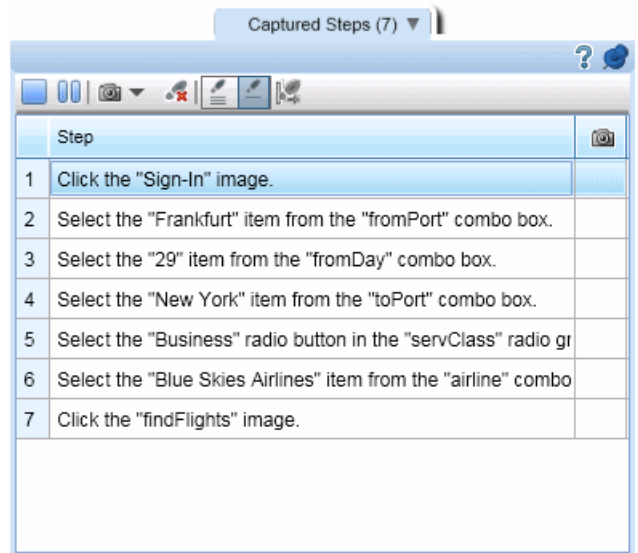
Captured Steps Sidebar



This sidebar displays the steps that result from the user actions that are performed during your Steps Capture session.

Tasks you can accomplish with the **Captured Steps** sidebar:






- "How to Author a Test or Component" on page 73





The following image shows the **Captured Steps** sidebar.



<p>To access</p>	<p>In Plan Mode, click the Steps tab's Steps Capture button.</p> <ul style="list-style-type: none"> ▶ To close the sidebar, click the End Steps Capture Session  button. ▶ To lock the sidebar in the open position, click the thumbtack  icon. ▶ To reposition the sidebar, click and drag on the sidebar header.
<p>Important information</p>	<ul style="list-style-type: none"> ▶ The steps in this sidebar are displayed in read-only mode. To edit steps, first end the Steps Capture session and then edit the steps in the Steps Tab. ▶ By default, multiple user actions are added to a single step, until you instruct the Steps Capture tool to begin a new step. To automatically create a new step for every action performed., click the Single User Action per Step button described below.


User interface elements are described below (unlabeled elements are shown in angle brackets>):

UI Elements	Description
	<p>End Steps Capture Session. Ends the Steps Capture session and adds the captured steps to the Steps grid.</p>
 	<ul style="list-style-type: none"> ▶ Pause Capture. Temporarily pauses the capturing of user actions. ▶ Resume Capture. Resumes the capturing of user actions.
	<p>Tools to manage the screen captures:</p> <ul style="list-style-type: none"> ▶ Screen Capture. Takes a capture of the screen and attaches it to the step selected in the sidebar. ▶ Annotated Screen Capture. Opens the Annotated Tools sidebar. The annotated screen capture will be attached to the step selected in the sidebar. For details, see "Annotation Tools Sidebar" on page 196. ▶ Delete Screen Capture. Deletes the selected step's screen capture.
	<p>Delete Step. Deletes the selected step from the Steps grid.</p>

UI Elements	Description
	Multiple User Actions per Step. Instructs Sprinter to add all user actions to the last step.
	Single User Action per Step. Creates a new step for each user action.
	<p>Start a New Step. Creates a new step to which Sprinter will add all future user actions.</p> <p>Note: This button is only relevant when Multiple User Actions per Step is enabled.</p>
Steps Display area	<p>A grid representation of the steps showing:</p> <p>Step number. The sequential number of the step.</p> <p>Step. A textual description of the performed user action. When the Steps Capture session ends, this text is added by default to the step's description area. Alternatively, you can configure this to be added to the Step's Name field instead. For details, see "Plan Settings Pane (Settings Dialog Box)" on page 64.</p> <p>Capture. An icon  indicating that there is a screen capture associated with the step. If no icon is present, the step has no screen capture.</p>

4

Running Tests

Throughout this guide, descriptions of features that are available only in Power Mode are identified by the Power Mode  icon.

This chapter includes:

Concepts

- ▶ Tests with Steps on page 120
- ▶ Exploratory Tests on page 121
- ▶ Power Mode Overview on page 121

Tasks

- ▶ How to Run a Manual Test in Sprinter on page 122
- ▶ How to Run an Exploratory Test in Sprinter on page 131

Reference

- ▶ Run Setup Area on page 133
- ▶ Run Setup Definitions Group on page 145
- ▶ Run Control Sidebar on page 150
- ▶ Steps Sidebar on page 157
- ▶ Generate Test Dialog Box on page 170
- ▶ Running Tests in Power Mode on page 172

Troubleshooting and Limitations - Running Tests on page 174

Concepts

Tests with Steps

Sprinter enables you to run the steps in your ALM test.

When you run your test, the steps are displayed in the **Steps** sidebar. From the **Steps** sidebar you can:

- ▶ Navigate your steps
- ▶ Mark your steps' status
- ▶ Modify the actual results of your steps
- ▶ Add attachments to steps
- ▶ Add screen captures to the actual results of your steps
- ▶ Edit your steps' details
- ▶ Submit defects to ALM
- ▶ Search in your steps
- ▶ View the parameters in your steps (Business Process Testing only)

The **Steps** sidebar also provides a **Subtitles** mode, which displays your step descriptions and enables you to navigate and mark your steps in a one line subtitle, while providing more screen real estate for your application.

When you finish your run, Sprinter saves your changes to the run results for your run. If you made changes to your steps' details, Sprinter prompts you to save your changes to the **Test Plan** module in ALM.

If your test is checked-in, Sprinter will automatically check it out, save your changes, and check it back in. If your test is checked-out to another user, Sprinter will warn you that your changes cannot be saved.

Exploratory Tests

With Power Mode enabled, you can navigate your application without the need to follow predefined steps. While you navigate your application, Sprinter captures each user action that you perform.

You can then export these user actions to a new manual test, or to an Excel file. For details, see "How to Run an Exploratory Test in Sprinter" on page 131.

Power Mode Overview

When you run a Sprinter test in Power Mode, Sprinter is able to learn your application's display and identify its objects. This ability gives you access to Sprinter's advanced functionality including data injection, recording and replaying macros, and working with mirroring (replicating user actions on multiple computers).

When you are in Power Mode, Sprinter keeps a record of all your user actions, which you can view as a list or in the Storyboard at the end of your run. You can also include the list of your steps or user actions in any defect you submit to let Sprinter automatically create a defect scenario for you.

You can export the list of user actions at the end of your run to an Excel spreadsheet, modify them for use as steps, and then import them to a test in ALM.

After a test run, you can use the test steps as a template and automatically generate a test. For details, see the "Generate Test Dialog Box" on page 170.

Sprinter's built-in scanners let you scan your application for spelling errors, Web Standards errors, broken links, or localization errors.

Power Mode allows you to take advantage of these advanced testing features. To use Power Mode, click the Power Mode button in the Main Window and configure each node in the Power Mode Group.

For more details, see "Power Mode" on page 221 and "Running Tests in Power Mode" on page 172.

Tasks

How to Run a Manual Test in Sprinter

The following steps describe how to run a manual test in Sprinter.



Sections marked with the Power Mode icon are only relevant when Power Mode is active.

- "Prerequisites" on page 122
- "Open a test" on page 122
- "Configure your test definitions" on page 124
- "Configure Power Mode" on page 124
- "Start your run and perform the user actions in your test" on page 124
- "Detect and submit defects" on page 125
- "Use data injection and macros in your test" on page 126
- "Use mirroring with your test" on page 126
- "Stop your run and view and analyze the run results" on page 126

Prerequisites

Ensure that you have the required user permissions and connect to ALM as described in "How to Get Started with Sprinter" on page 50.

Open a test

You can open a test in one of the following ways:

- **Open an ALM test from within Sprinter.**



Click the **Open** button in the **Run Setup** area.

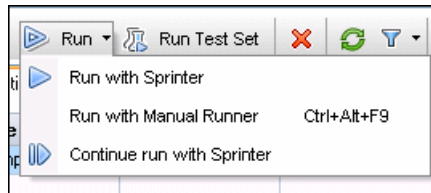
If you are already connected to ALM, the **Open** dialog box opens, enabling you to select which ALM tests you want to open.

If you are not connected to ALM, the **ALM Connection** dialog box opens first, enabling you to connect to ALM, and then the **Open** dialog box opens.

For details on the **Open** dialog box, see "Open Dialog Box" on page 143.

► **Open an ALM test from within ALM.**

- In ALM, select the **Test Lab** module, and make sure that the **Test Sets** tab is selected.
- Select the **Execution Grid** tab.
- Select the test, tests, or test set you want to run.
 - For a test set, click **Run Test Set**, and select **Sprinter** from the dialog box that is displayed.
 - For an individual or multiple tests, click the down-arrow next to the **Run** button and select **Run with Sprinter**. If you are continuing a previous run that was run with Sprinter, click **Continue run with Sprinter**.



Once you open a test you can immediately skip to the following steps. All other steps are optional based on your testing needs:

- "Start your run and perform the user actions in your test" on page 124
- "Stop your run and view and analyze the run results" on page 126

Configure your test definitions

When you configure your test definitions, you can view and edit your test details, run details, parameters, and steps.

For details, see "Run Setup Definitions Group" on page 145.

Configure Power Mode

Before running your test with Power Mode, you need to configure Power Mode for the application you are testing. Decide if you need use data injection, macros, and other advanced features provided by Power Mode. For details, see "Running Tests in Power Mode" on page 172 and How to Prepare a Test to Run in Power Mode on page 226.

- ▶ **Set up Mirroring.** Use the mirroring feature to replicate your user actions on multiple computers with different configurations, such as operating systems, browsers, and so forth. To run a test with mirroring, you must configure all the machine that you intend to use for your test.

For details, see "How to Prepare a Test for Mirroring" on page 306.

- ▶ **Scanners.** Use scanners to check that various aspects of your application behave correctly during the run session, such as W3C compliance, broken links, spelling and localization. You can also configure the Scanner settings during the run session. However, to display the Scanners sidebar, you need to configure settings for one or more scanners before the run session begins.


For details, see "How to Scan Your Application For Potential Defects" on page 277.

Start your run and perform the user actions in your test



Click the **Run** button in the Main Window (described on page 57).

- ▶ Start your application.

 If you are running your test in Power Mode and did not configure Sprinter to start your application when the run begins, you need to manually start your application.

Note: To enable Power Mode to work with your application, it is recommended that you configure Sprinter to start your application when the run begins or manually start your test application after you begin your run.

- ▶ If you are running a test with steps you can run those steps directly.

For details, see:

- ▶ "How to Navigate Steps" on page 127
 - ▶ "How to Mark Steps" on page 128
 - ▶ "How to Edit and Add Actual Results and Attachments to Steps" on page 130
- ▶ If your test does not have steps, you can begin your test run and perform exploratory user actions.

For details, see "How to Run an Exploratory Test in Sprinter" on page 131.

Detect and submit defects

Sprinter enables you to submit defects to ALM. You can also keep a record of a defect, create a reminder to submit your defect later, or include a screen capture of a defect in an email.

For details, see "How to Detect and Submit a Defect" on page 183.

Use data injection and macros in your test

If you are running your test with Power Mode, you can automatically enter data into forms in your application using data injection and you can automate user actions with macros.

For details, see:

- "How to Inject Data into your Application" on page 251
- "How to Record and Run Macros" on page 263

Use mirroring with your test

When you run a test with mirroring, you can view the status of all the machines in your test, compare their displays, and detect and resolve differences in their displays.

For details, see "How to Run a Test with Mirroring" on page 308.

For details on the mirroring feature, see "Testing on Multiple Machines - Overview" on page 296.

Use scanners in your test

When you perform scans during a run session, you can monitor the progress of each scanner in the Scan Progress window. After each scan ends, you can view and address the results.

For details, see:

- "Scan Progress Window" on page 288
- "Scan Results Viewer" on page 291

Stop your run and view and analyze the run results



Click the **End Run** button in the Run Control Sidebar (described on page 150).

You can now view the results of your run in the main window. For details, see "How to Review Run Results" on page 203.

How to Navigate Steps

Note: This task is part of a higher-level task. For details, see "How to Run a Manual Test in Sprinter" on page 122.

You can view the steps in your test in the **Steps** sidebar or in **Subtitles** mode.

This task includes the following steps:

- "Steps Sidebar (default mode)" on page 127
- "Subtitles Mode" on page 128

Steps Sidebar (default mode)

The **Steps** sidebar displays all the step information and enables all of the functionality of marking, modifying, and adding attachment to steps, as well as opening defects.



- Click the **Expand/Collapse** button to expand or collapse a step. You can also double click a step heading to collapse a step.
 - By default, the **Step Display** area is set to **Auto Expand**, so that clicking on a step heading expands that step. When Auto Expand is not selected, double clicking on the step heading expands the step.
 - When you start a run, the **Step Display Area** displays the first step expanded. If you switch between runs, the last step you marked is expanded.
- When you set the status of a step to **Passed**, the **Step Display Area** automatically advances to the next step in the test.

For more details, see "Steps Sidebar" on page 157.

Subtitles Mode

Subtitles mode displays the description of each step as a subtitle on your screen, and enables you to mark the step's status and add attachments to steps.



- ▶ Click **Steps** sidebar > **Show Subtitles** button to view the steps in subtitles mode.
- ▶ When you start a run, the subtitle displays the first step. If you switch between runs, the last step you marked is displayed.
- ▶ When you set the status of a step to **Passed**, the subtitle automatically advances to the next step in the test.
- ▶ You can modify the appearance of the subtitles in the Subtitles Settings Dialog Box (described on page 169).
- ▶ You can use hotkeys to mark a step's status, navigate steps, and perform other functions in subtitles mode. For details, see "Hot Keys Settings Pane (Settings Dialog Box)" on page 63.

For more details, see "Subtitles Toolbar" on page 164.



How to Mark Steps

Note: This task is part of a higher-level task. For details, see "How to Run a Manual Test in Sprinter" on page 122.

You can mark the steps in your test from the following locations:

- ▶ "Steps Sidebar toolbar" on page 129
- ▶ "Subtitles Toolbar" on page 129
- ▶ "Step display area" on page 129

Steps Sidebar toolbar



- Select one or more steps in your test and click one of the status buttons to set their status.
 - CTRL-click multiple steps to select them.
 - Click a step and then SHIFT-click another step to select a range of steps.
- You can also set the status of all the steps up to and including the current step, using the drop-down options next to these buttons.

For more details, see "Steps Sidebar" on page 157.

Subtitles Toolbar



- Click **Steps sidebar** > **Show Subtitles** button to view the steps in subtitles mode.



- Click the **Pass** or **Fail** buttons to mark the currently displayed step as Passed or Failed.



- Click the **Step Status** button to select a step status from the drop-down list.

For more details, see "Subtitles Toolbar" on page 164.

Step display area



- You can click the **Status** button (No Run, by default) in the heading of each step in the Steps display area to set the status for that step.
- If you select more than one step, you can click the **Status** button in any of the selected steps to set the status of all the selected steps.
 - CTRL-click to select multiple steps.
 - SHIFT-click to select a range of steps.

For more details, see "Steps Sidebar" on page 157.

How to Edit and Add Actual Results and Attachments to Steps

Note: This task is part of a higher-level task. For details, see "How to Run a Manual Test in Sprinter" on page 122.

You can edit the actual results of steps, add and delete steps, and add attachments to steps.

This task includes the following steps:

- ▶ "Edit the actual result of a step" on page 130
- ▶ "Add attachments to a step" on page 131
- ▶ "Edit the details of a step" on page 131
- ▶ "Add and delete steps" on page 131

Edit the actual result of a step

You can edit and add a screen capture to the Actual Result of a step from the following locations:



- ▶ **The Steps sidebar.** Click the **Actual Result** button to edit or add a screen capture to the actual results of a step. For details, see "Actual Result Dialog Box" on page 166.



- ▶ **The Subtitles toolbar.** Click the **Actual Result** button to edit or add a screen capture to the actual results of a step. For details, see "Actual Result Dialog Box" on page 166.



- ▶ **The Annotation Workspace.** In the **Tools** sidebar click the **Annotation Workspace** button. In Annotation mode, click the **Save to Actual Result** button to add an annotated screen capture of your application to the actual results of a step. For details, see "Annotation Tools Sidebar" on page 196.

Add attachments to a step



Click the **Steps** sidebar > **Attachments** button to add an attachment to a step in your test.

For more details, see "Run Attachments Dialog Box" on page 155.

Edit the details of a step



Click the **Steps** sidebar > **Edit Step** button to edit the name, description, or expected result of a step in your test.

For more details, see "Edit Step Dialog Box" on page 168.

Add and delete steps




Click down-arrow next to the **Steps** sidebar > **Edit Step** button and select **Edit Steps**, **Insert Before**, **Insert After**, or **Delete Step** to edit, add, or delete steps in your test.

For more details, see "Edit Step Dialog Box" on page 168.

How to Run an Exploratory Test in Sprinter

The following steps describe how to run an exploratory test in Sprinter.

 This task is only relevant for a test run in Power Mode.

This task includes the following steps:

- "Prepare the exploratory test" on page 132
- "Explore your application" on page 132
- "Review and export the captured user actions" on page 132

Prepare the exploratory test

- ▶ Ensure that you have the required user permissions and connect to ALM as described in "How to Get Started with Sprinter" on page 50.
- ▶ Open a test in Sprinter, as described in the Open a test step of "How to Run a Manual Test in Sprinter" on page 122.
- ▶ Turn on Power Mode and select an application for your test, as described in the Configure Power Mode step of "How to Run a Manual Test in Sprinter" on page 122.

Explore your application

Begin the run session, and perform any user action in your application. Sprinter captures all of the user actions that you perform. You can manage the capturing of user actions and view the status of your exploratory run in the Run Control Sidebar.

For details, see "Run Control Sidebar" on page 150.

Review and export the captured user actions

At the end of the run session, review the captured user actions in the User Actions pane of the Results Group. For user interface details, see "User Actions Pane/User Actions Summary Dialog Box" on page 213.

In this pane you can export the captured user actions to:

- ▶ **a new manual test with steps.** In the new test, each user action is converted to a manual step. Before saving the new test to ALM, you can edit its details, steps, and any user-defined information that your ALM project requires. For details, see "Generate Test Dialog Box" on page 170.
- ▶ **an Excel or CSV file.** This file contains all the user actions that you performed during the run session. You can edit the content of the file and then import it into an existing test or component.

Reference

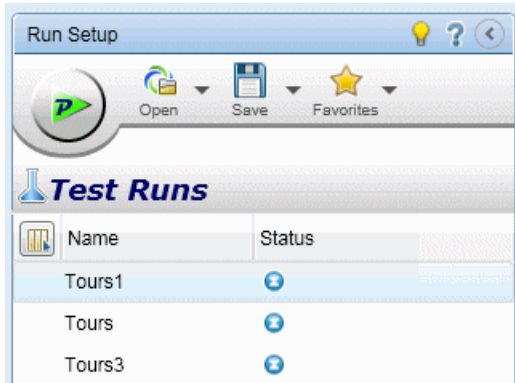
Run Setup Area

This area enables you to open tests and select which tests to include in your run. You can define test details and view previous results for test. You can also configure Power Mode for your run.

Tasks you can accomplish with the **Run Setup** area:


- "How to Run a Manual Test in Sprinter" on page 122
- "How to Prepare a Test to Run in Power Mode" on page 226
- "How to Prepare a Test for Mirroring" on page 306
- "How to Review Run Results" on page 203



The following image shows the Run Setup area.







To access	Enter Run mode. The Run Setup area is in the left pane.
Important information	<ul style="list-style-type: none"> ▶ The Test Runs list contains the list of all the tests you can include in your next run. Any changes you make to the Test Runs list do not affect ALM or the ALM Test Lab module. ▶ Tests in the Test Runs list correspond to instances of a configuration in ALM. These instances are referred to as tests throughout the product and this guide.
See also	"Things to Remember When You Work with the Test Runs List" on page 139







User interface elements are described below (unlabeled elements are shown in angle brackets>):


UI Elements	Description
	<p>Run / Run in Power Mode.</p> <ul style="list-style-type: none"> ▶ Runs all the activated tests in the Test Runs list. ▶ For details on activating and deactivating tests, see the description of the context menu (right-click) options for the Test Runs list, below.

UI Elements	Description
	<p>Adds a test to the Test Runs list.</p> <p>Drop-down options:</p> <ul style="list-style-type: none"> ➤ Open HP ALM Test. (Default) Opens the Open Dialog Box. The tests you select are added to the Test Runs list. If you are not connected to ALM, the ALM Connection Dialog Box opens, enabling you to connect to ALM first. <p>If you have tests in the Test Runs list, the Open option removes the current tests in the list and replaces them with your selection. If your tests are not saved, you are prompted to save them.</p> <ul style="list-style-type: none"> ➤ Append HP ALM Test. Opens the Open Dialog Box. The tests you select are appended to the Test Runs list. If you are not connected to ALM, the ALM Connection Dialog Box opens, enabling you to connect to ALM first. <p>The Append option adds your selection to the end of the Test Runs list.</p>
	<p>Saves the selected tests in the Test Runs list.</p> <p>Shortcut key: Ctrl+S</p> <p>Drop-down options:</p> <ul style="list-style-type: none"> ➤ Save. Saves the run definitions for the selected tests. ➤ Save All. Saves the run definitions for all the tests in the Test Runs list. <p>Note: ALM tests are automatically saved to ALM throughout the test run. If you lose your connection to ALM during a run, your test will display an asterisk next to its name indicating that the test has changes that have not been saved. You must first reconnect to ALM in the ALM Connection Dialog Box and then click the Save button to manually save the run results to ALM.</p>

UI Elements	Description
	<p>Enables you to save the current list of tests as a favorite and load a saved list of tests into the Test Runs list.</p> <p>For details on how Sprinter maintains the list of favorites, see "How User Information is Maintained" on page 47.</p> <p>Drop-down options:</p> <ul style="list-style-type: none"> ➤ Add to Favorites. Saves the current Test Runs list as a favorite in the Favorites list. ➤ Manage Favorites. Opens the Manage Favorites Dialog Box (described on page 142), enabling you to change the order of your Favorites list and remove favorites from the list. ➤ <ALM favorites>. The list of your favorites that contain ALM tests.
	<p>Select Columns. Select which columns are displayed in the Test Runs list and add columns to the display. For example, you can right-click and select Run Name to add the Run Name column to the display.</p> <p>You can also select columns by right-clicking on the column headers.</p>

UI Elements	Description
Name	<p>The list of tests available to be included in the next run.</p> <p>Tests in the Test Runs list correspond to instances of a configuration in ALM. These instances are referred to as tests throughout the product and this guide.</p> <ul style="list-style-type: none"> ▶ When you click the Run button, only active tests in the Test Runs list are run. For details on how to activate and deactivate tests, see the description of the context menu (right-click) options described below. Deactivated tests appear disabled (gray) in the Test Runs list. ▶ Right-click a test in the Test Runs list to view the context menu (right-click) options described below. ▶ For each test in the list you can set the status of the test by clicking in the Status column and selecting a value from the drop-down list. ▶ When you select a test in the Test Runs list, the details pane displays the Run Setup Definitions Group and Results Group groups for that test. For details, see "Run Setup Definitions Group" on page 145 and "Results Group" on page 207. ▶ An asterisk next to a test name indicates the test has changes that have not been saved. ▶ A warning symbol  next to a test indicates a problem with the definitions for that test. When you select the test, the warning symbol is also displayed next to the node in the Run Setup Definitions Group (described on page 145), that is causing the warning. Select the node and review the displayed definitions for any warning messages. ▶ A lock symbol  next to a test indicates that the test is currently locked. This occurs when you load a previous run of a test, and that run is also currently being edited in ALM. ▶ The Name and Status columns are displayed by default. You can right-click on the column headers of the Test Runs list to add and select the displayed columns, and drag column dividers to adjust column width. You can also drag columns to change the order in which they are displayed.



UI Elements	Description
<Context menu (right-click) options>	<ul style="list-style-type: none"> ➤ Move Up. Moves the selected test up the Test Runs list. ➤ Move Down. Moves the selected test down the Test Runs list. ➤ Remove. Removes the selected tests from the Test Runs list. ➤ Activate/Deactivate Test. Includes or removes the selected tests from the next run session. Deactivated tests appear disabled (gray) in the Test Runs list. ➤ Run This Test Only. Starts a run with the selected test only. ➤ Replace with New Run. Removes the selected test from the Test Runs list, replaces it with a new copy and saves any run results. (This can be useful if a test in the Test Runs list failed and you want to re-run the test.) ➤ Add New Run. Adds a new run of the selected tests to the Test Runs list. ➤ Show All Runs. Opens the Test <'Test Name'>: All Runs Dialog Box (described on page 140).
Status	<p>The status values include the following default system values as well as any user-defined status values:</p> <ul style="list-style-type: none"> ➤  Passed. The test passed. ➤  Failed. The test failed. ➤  Blocked. The test is blocked. ➤  Not Completed. The test was paused in the middle of the run. ➤  No Run. (Default selection) The test has not yet been run. ➤  N/A. Current status is not applicable. <p>The Name and Status columns are displayed by default. You can right-click on the column headers of the Test Runs list to add and select the displayed columns, and drag column dividers to adjust column width. You can also drag columns to change the order in which they are displayed.</p>
Test Name	<p>(Not displayed by default) The name of the test as it appears in the Test Plan in ALM.</p> <p>Right-click on the column headers of the Test Runs list to select which columns to display.</p>


UI Elements	Description
Test Set Name	(Not displayed by default) The name of the test set that contains the test, as it appears in the Test Lab in ALM. Right-click on the column headers of the Test Runs list to select which columns to display.
Run	(Not displayed by default) The name of the run. Right-click on the column headers of the Test Runs list to select which columns to display.
 Power Mode	Enables you to configure and activate Power Mode for your tests. For details, see "Power Mode Group" on page 229.

Things to Remember When You Work with the Test Runs List

- The **Test Runs** list contains the list of all the tests you can include in your next run. Any changes you make to the **Test Runs** list do not affect the **Test Lab** module in ALM.
- When you click the **Run** button, only **active** tests in the **Test Runs** list are run. For details on how to **activate** and **deactivate** tests, see the description of the **context menu (right-click) options** in the Run Setup Area (described on page 133). Deactivated tests appear disabled (gray) in the **Test Runs** list.
 - After you run a test, the test becomes **deactivated** in the **Test Runs** list. To run the test again, you can use the **context menu (right-click) options** to:
 - Activate the test. In your next test run, the current run will continue.
 - Add a new run for the test.
 - Replace the current run with a new run.
- You can select which columns are displayed in the **Test Runs** list and add columns to the display, by clicking the Select columns button or right-clicking on the column headers. For example, you can right-click and select **Run Name** to add the **Run Name** column to the display. You can also resize columns and drag columns to change the order in which they are displayed.



- ▶ A warning symbol  next to a test indicates a problem with the definitions for that test. When you select the test, the warning sign is also displayed next to the node in the Run Setup Definitions Group (described on page 145), that is causing the warning. Select the node and review the displayed definitions for any warning messages.
- ▶ A lock symbol  next to a test indicates that the test is currently locked. This occurs when the test or run is locked in ALM.
- ▶ For a full description of all the features in the **Test Runs** list, see "Run Setup Area" on page 133.

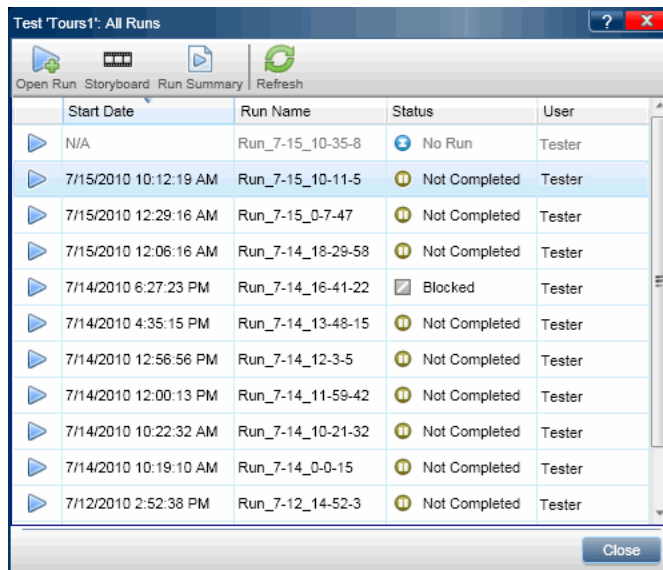
 **Test <'Test Name'>: All Runs Dialog Box**

This dialog box enables you to view previous run results. You can load a previous run in the **Test Runs** list, view run results in the Storyboard, and view a run results summary.

Tasks you can accomplish with the Test <'Test name'>: All Runs dialog box:





- ▶ "How to Review Run Results" on page 203

The following image shows the Test <'Test name'>: All Runs dialog box.



To access	In the Test Runs list, Right-click a test and select Show All Runs .
Important information	The current run in the Test Runs list is always displayed at the top of the list of All Runs, but it is disabled.

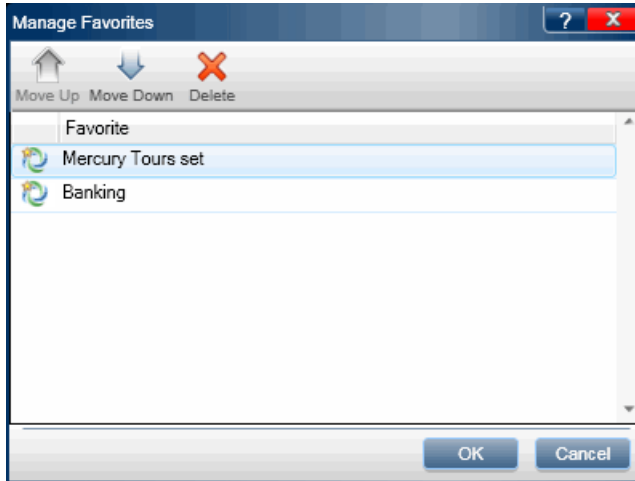
User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Elements	Description
	Adds the selected run to the Test Runs list.
	Opens the Storyboard Window for the selected run.
	Displays the Run Summary for the selected run.
	Refreshes the list of runs from ALM.
<Run list>	<p>The list of runs for the test. The run list displays the following columns:</p> <ul style="list-style-type: none"> ▶ Run Icon. This icon is blue for runs that were performed with Sprinter and green for those that were performed with the ALM manual runner. ▶ Start Date. ▶ Run Name. ▶ Status. ▶ User. The user who ran the test.

Manage Favorites Dialog Box

This dialog box enables you to change the order of your favorites in the favorites list and delete favorites from the list.

The following image shows the Manage Favorites dialog box.



To access	In the Run Setup area, select Favorites > Manage Favorites .
------------------	---

Descriptions of the user interface elements are available in the dialog box when you hover over them.

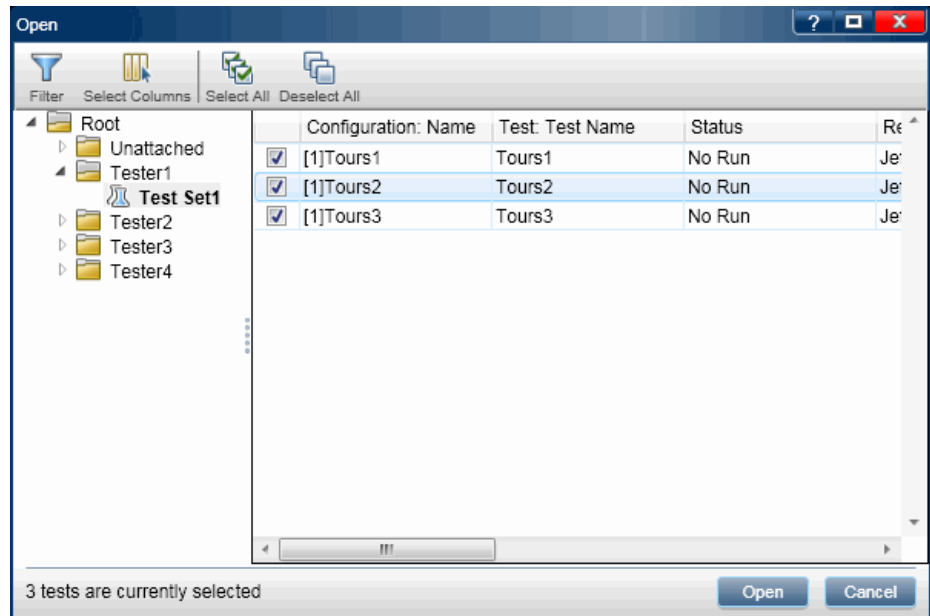
Open Dialog Box

This dialog box enables you to open a test from ALM (from the ALM Test Lab module). You can filter the tests that are displayed to make selecting tests easier.

Tasks you can accomplish with the Open dialog box:





- "How to Run a Manual Test in Sprinter" on page 122

The following image shows the Open dialog box.



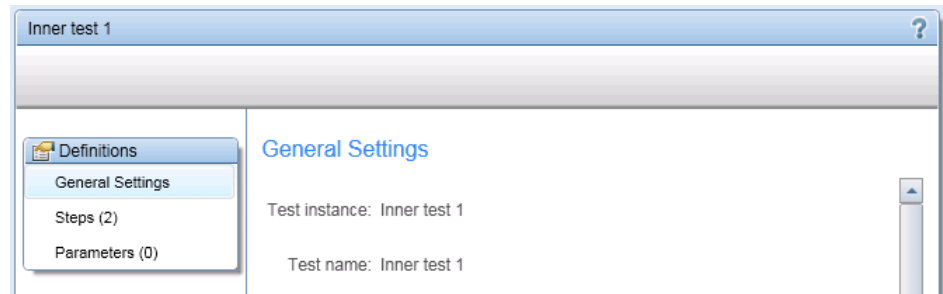
To access	In the Run Setup area, select Open > Open ALM Test or Append ALM Test .
------------------	---

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Elements	Description
	<p>Opens the ALM Test Instances Filter dialog box enabling you to filter the test instances displayed in the Open from ALM dialog box, based on specific criteria. For details on filtering test instances, click Help in the Test Instances Filter dialog box.</p>
	<p>Opens the ALM Select Columns dialog box, enabling you to select which columns to view in the Open dialog box. For details on selecting columns, click Help in the Select Columns dialog box.</p>
	<p>Selects all the currently displayed tests in the list.</p>
	<p>Deselects all the currently displayed tests in the list.</p>
<p><Test set tree></p>	<p>Located on the left side of the dialog box. Displays your test sets hierarchically. A test set contains a subset of the tests in your project.</p> <p>Note: You cannot move items within a folder.</p>
<p><Test list></p>	<p>Located on the right side of the dialog box. The list of tests in the selected test set in the test set tree. Select the check boxes next to the tests you want to open in Sprinter.</p>

Run Setup Definitions Group

The Run Setup **Definitions** group is located in the left side of the main window.



This group includes the following panes:

- "General Settings Pane (Run Setup Definitions Group)" on page 145
- "Steps Pane (Run Setup Definitions Group)" on page 147
- "Parameters Pane (Run Setup Definitions Group)" on page 149

The **Steps** node and **Parameters** node indicate in parenthesis, the number of steps and parameters for the selected test.

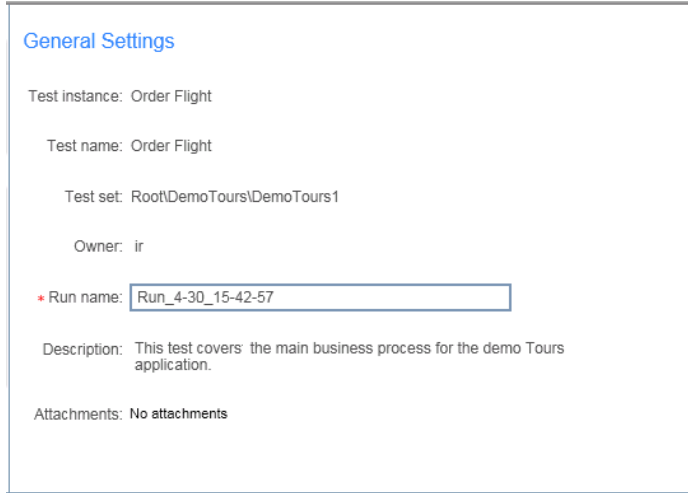
General Settings Pane (Run Setup Definitions Group)

This pane displays your test's details.

Tasks you can accomplish with the General Settings:

- "How to Run a Manual Test in Sprinter" on page 122
- "How to Run an Exploratory Test in Sprinter" on page 131

The following image shows the General Settings.



To access	In the main window, select a test from the Test Runs list and then select Definitions > General Settings node.
Important information	<ul style="list-style-type: none"> ▶ If your ALM test has user-defined fields that can be edited, they are displayed and can be edited in the General Settings pane. ▶ The test settings for ALM tests are defined in ALM and are read-only in the General Settings pane.

Descriptions of the user interface elements that can be edited are available in the pane when you hover over them.

If Application Lifecycle Intelligence (ALI) is enabled for your ALM project, the General Settings pane provides an additional field—**Test Build**. This drop-down enables you to select a specific build (build ID) upon which to run your test.

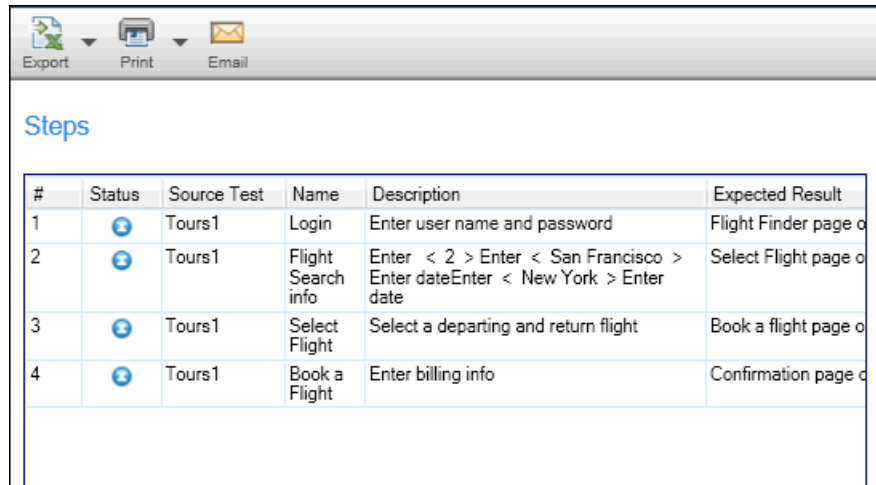
Steps Pane (Run Setup Definitions Group)





This tab displays the steps in your test. For Business Process Tests it displays the test hierarchy, including components, steps, groups, flows, and iterations.

Tasks you can accomplish with the Steps tab:

- "How to Run a Manual Test in Sprinter" on page 122

The following image shows the Steps tab for a manual test.



#	Status	Source Test	Name	Description	Expected Result
1		Tours1	Login	Enter user name and password	Flight Finder page o
2		Tours1	Flight Search info	Enter < 2 > Enter < San Francisco > Enter dateEnter < New York > Enter date	Select Flight page o
3		Tours1	Select Flight	Select a departing and return flight	Book a flight page o
4		Tours1	Book a Flight	Enter billing info	Confirmation page c

The following image shows the Steps tab for a Business Process Test.

Steps		Name	Description	Expected Result	Actual
[-]		Tours			
		Login	Summary:		
			Pre Condition:		
			Post Condition:		
[-]		Find a flight	Summary:		
			Pre Condition:		
			Post Condition:		
[-]		Iteration 1			
		Type	Select One Way		
		Passengers	<2>		
		From	<New York>		
		To	<San Francisco>		
[-]		Iteration 2			
		Type	Select One Way		
		Passengers	<3>		
		From	<New York>		
		To	<San Francisco>		
[-]		Select	Summary:		
			Pre Condition:		

To access	In the main window, select a test from the Test Runs list and then select Definitions > Steps node.
------------------	--

Important information	<ul style="list-style-type: none"> ▶ You can resize the Sprinter window and the columns in the display to view all the information. ▶ Right-click the column header area to select which columns to display. ▶ The Name, Description, and Expected Result values can be edited in the Steps Sidebar during the test run (described on page 157). ▶ Parameters in steps are represented by <actual value>. If there is no actual value, the parameter is displayed as <<<parameter name>>>. ▶ You cannot Export, Print, or Email steps in a Business Process Test. <p>For details on working with steps in an ALM test, see the <i>HP Application Lifecycle Management User Guide</i>.</p>
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Descriptions of the user interface elements are available in the pane.

Parameters Pane (Run Setup Definitions Group)

This pane displays and enables you to edit the actual values of the parameters used in your test. For Business Process Testing, this pane only shows the input parameters.

Tasks you can accomplish with the Parameters pane:

- ▶ "How to Run a Manual Test in Sprinter" on page 122

The following image shows the Parameters pane.

Parameters				
Name	Actual Value	Default Value	Description	Test
From	San Francisco	San Francisco	Departure city	Tours
Passnegers	2	2	number of passen...	Tours
User name	Bob	Bob	Default user name	Tours
To	New York	New York	Destination City	Tours
Credit first	Bob	Bob	Credit Card first n...	Tours_select1

To access	In the main window, select a test from the Test Runs list and then select Definitions > Parameters node.
Important information	The default values in the Parameters pane are taken from the test. Only the Actual Value can be edited from Sprinter. All other values must be edited from ALM. For details on using parameters in tests, see the <i>HP Application Lifecycle Management User Guide</i> .

User interface elements are described below:

UI Elements	Description
Name	The name of the parameter.
Actual Value	The value that will be used in the test run. If there is no actual value, the default value will be used.
Default Value	The default value for the parameter.
Description	The description of the parameter.
Test	The source test of the parameter.

Run Control Sidebar

This sidebar enables you to set the status of your test and move between the different tests in the list of tests you are running.

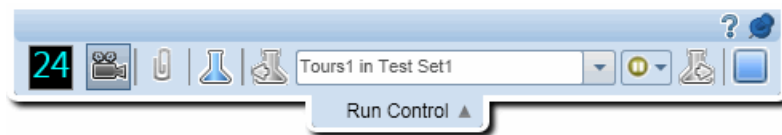
Tasks you can accomplish with the **Run Control** sidebar:





- "How to Run a Manual Test in Sprinter" on page 122
- "How to Run an Exploratory Test in Sprinter" on page 131

The following image shows the **Run Control** sidebar in a test without Power Mode.




















P In Power Mode, this sidebar also enables you to start and stop the recording of user actions and to view the number of user actions in your run.







<p>To access</p>	<p>Do the following:</p> <ol style="list-style-type: none"> 1 Enter Run mode 2 Open a test or component. 3 Click the Run  or the Power Mode Run  button. <p>To end the run and close the sidebar:</p> <ol style="list-style-type: none"> 1 Expand the sidebar. 2 Click the Stop  button. <p>Tip: To lock the sidebar in the open position, click the thumbtack  icon. To reposition the sidebar, click and drag on the sidebar header.</p>
-------------------------	--

User interface elements are described below (unlabeled elements are shown in angle brackets>):

UI Elements	Description
	<p> User Actions. Displays the number of user actions performed in the current run.</p>
	<p> Pause/Start Capturing. Pauses and starts Sprinter from capturing each user action as it is performed.</p> <ul style="list-style-type: none"> ▶ If you pause capturing, all subsequent actions are not represented in the Storyboard Window or the User Actions report. ▶ If you are performing a test on multiple machines (mirroring) and pause capturing, all subsequent actions are not replicated on the secondary machines. <ul style="list-style-type: none"> ▶ If after you pause capturing, you perform actions in the test that affect the user interface, there may be significant differences between the primary and secondary machines. When you restart capturing, the secondary machines may be unable to replicate the user actions until you manually update the secondary machine user interface to match that of the primary machine.
	<p>Attachments. Opens the Run Attachments Dialog Box (described on page 155), enabling you to add, edit, or remove attachments in your run.</p>
	<p>Test Details. Opens the Test Details Dialog Box (described on page 156).</p>

UI Elements	Description
	<p>Previous Test. Returns to the previous test in the Test Runs list.</p> <ul style="list-style-type: none"> ➤ All the sidebars and displays are updated to display the current state of the previous test in the Test Runs list. <p>Note:</p> <ul style="list-style-type: none"> ➤ When moving between tests, you may need to perform actions in the test application to ensure it is in the proper state for the test you want to perform. <ul style="list-style-type: none"> ➤  If you are performing a test in Power Mode, you may want to stop capturing while performing these actions, so that they do not appear in the Run Control sidebar, the Storyboard Window, or the list of actions in a defect. ➤  If you are running a test with mirroring, you can continue capturing so that these actions are replicated on your secondary machines. If you stop capturing, you will need to perform these user actions on each secondary machine in your run.
<Test list>	<p>The list of tests in your run. Each test in the list includes the date and time of the test and the test status.</p> <p>To move between tests, click the Previous Test  or Next Test  buttons, or click the down-arrow next to the test list and select a test.</p>
<Test status>	<p>The status of the current test. You can modify the status of the current test by clicking the down-arrow next to the test status icon and selecting a status from the list.</p> <p>Status values:</p> <p>The status values include the following default system values as well as any user-defined status values:</p> <ul style="list-style-type: none"> ➤  Passed. The test passed. ➤  Failed. The test failed. ➤  Not Completed. The test was paused in the middle. ➤  Blocked. The test is blocked. ➤  No Run. (Default selection) The test has not yet been run. ➤  N/A. Current status is not applicable.

UI Elements	Description
	<p>Next Test. Advances to the next test in the Test Runs list.</p> <ul style="list-style-type: none"> ▶ All the sidebars and displays are updated to display the current state of the next test in the Test Runs list. <p>Note:</p> <ul style="list-style-type: none"> ▶ When moving between tests, you may need to perform actions in the test application to ensure it is in the proper state for the test you want to perform. <ul style="list-style-type: none"> ▶  If you are performing a test with Power Mode, You may want to stop capturing while performing these actions, so that they do not appear in the Run Control sidebar, the Storyboard Window, or the list of actions in a defect. ▶  If you are running a test with mirroring, you can continue capturing so that these actions are replicated on your secondary machines. If you stop capturing, you will need to perform these user actions on each secondary machine in your run.
	<p>End Run. Ends the testing session and returns to the Main Window.</p>

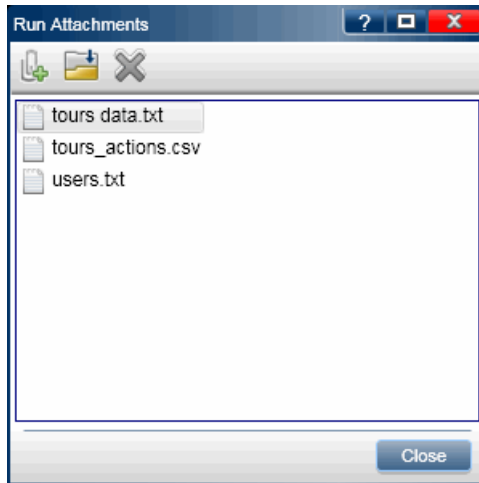
Run Attachments Dialog Box


This dialog box displays run attachments, and enables you to add, edit, or remove attachments (not available for business component steps).

Tasks you can accomplish with the Run Attachments dialog box:




- "How to Edit and Add Actual Results and Attachments to Steps" on page 130

The following image shows the Run Attachments dialog box.



To access	In the Run Control Sidebar or Steps Sidebar, click the Run Attachments button  .
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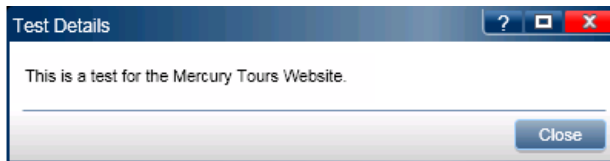
User interface elements are described below:


UI Elements	Description
	Add Attachment. Enables you to browse to a file and add it as an attachment.
	Open Attachment. Opens the selected attachment in the default program for the attachment's file type.
	Remove Attachment. Removes the selected attachment.

Test Details Dialog Box

This dialog box displays the description and any attachment for your test.

The following image shows the Test Details dialog box.



To access	Select Run Control Sidebar > Test Details button  .
Important information	Click the thumbnail of an attachment to open it in the default program for the file type.

Descriptions of the user interface elements are available in the dialog box when you hover over them.

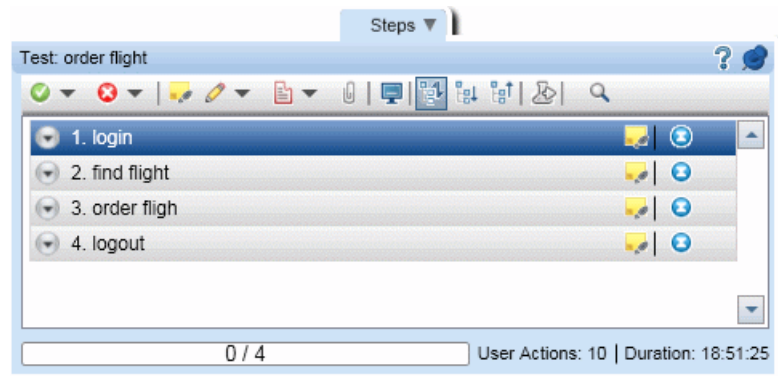
Steps Sidebar

This sidebar enables you to navigate, mark, and edit the steps in your test.

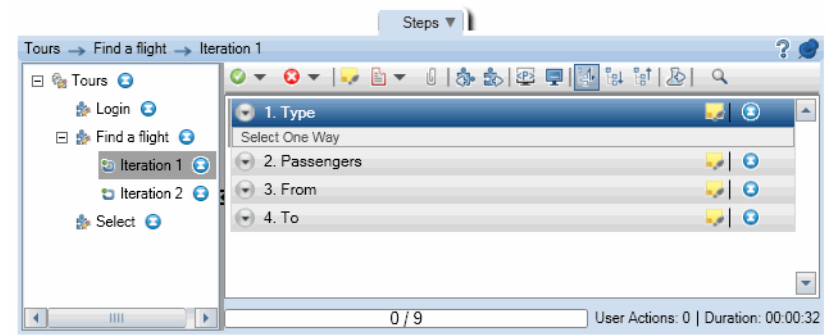
Tasks you can accomplish with the **Steps** sidebar:





- "How to Navigate Steps" on page 127
- "How to Mark Steps" on page 128
- "How to Edit and Add Actual Results and Attachments to Steps" on page 130

The following image shows the **Steps** sidebar.



If you are running a Business Process Test, the **Steps** sidebar displays the test hierarchy and components in an additional pane on the left. The Steps display area displays the steps for the selected component.



<p>To access</p>	<p>Do the following:</p> <ol style="list-style-type: none"> 1 Enter Run mode 2 Open a test or component. 3 Click the Run  or the Power Mode Run  button. <p>To close the Steps sidebar:</p> <ol style="list-style-type: none"> 1 Open the Run Control sidebar. 2 Click the Stop  button. <p>Tip: To lock the sidebar in the open position, click the thumbtack  icon. To reposition the sidebar, click and drag on the sidebar header.</p>
<p>Important information</p>	<ul style="list-style-type: none"> ➤ For manual tests, if your test does not have any steps and you did not manually change the Sprinter configuration file, the Steps sidebar is not displayed. ➤ Some options are available only when you are working with Business Process Testing. ➤ User defined fields in steps are not supported in ALM business process tests.





The Steps sidebar contains the following elements:











- "Steps Toolbar" on page 158
- "Steps Display Area" on page 161
- "Steps Status Bar" on page 163


Steps Toolbar

User interface elements are described below:

UI Elements	Description
<p><Title bar></p>	<p>The title bar of the Steps sidebar displays the test name as it appears in Test Plan module of ALM.</p> <p>For Business Process Testing tests, the title bar displays the name of the Business Process Test and the current component.</p>

UI Elements	Description
	<p>Pass Selected Steps. (Default) Marks the selected steps as Passed. (CTRL-click to select multiple steps.)</p> <p>Click on the down arrow for the following options:</p> <ul style="list-style-type: none"> ▶ Pass. Marks the selected steps as Passed. ▶ Pass All. Marks all the steps as Passed. ▶ Pass Selected, Pass Previous Unmarked. Marks the selected step as Passed, and marks all the unmarked steps prior to the selected step, as Passed. This option is available only when a single step is selected.
	<p>Fail Selected Steps. (Default) Marks the selected steps as Failed. (CTRL-click to select multiple steps.)</p> <p>Click on the down arrow for the following options:</p> <ul style="list-style-type: none"> ▶ Fail. Marks the selected steps as Failed. ▶ Fail Selected, Pass Previous Unmarked. Marks the selected step as Failed, and marks all the unmarked steps prior to the selected step, as Passed. This option is available only when a single step is selected.
	<p>Actual Result. Opens the Actual Result Dialog Box (described on page 166), enabling you to modify the actual result and/or add a screen capture or annotated screen capture to the actual result.</p> <p>If your steps have user defined fields from ALM, they can be edited in the Actual Result dialog box.</p>
	<p>Edit Step. Opens the Edit Step Dialog Box (described on page 168). (not available for Business Process Tests)</p> <p>Click the down-arrow for the following options:</p> <ul style="list-style-type: none"> ▶ Edit Step. (Default) Opens the Edit Step Dialog Box (described on page 168). ▶ Insert Before. Opens the Edit Step Dialog Box (described on page 168), enabling you to insert a new step before the current step. ▶ Insert After. Opens the Edit Step Dialog Box (described on page 168), enabling you to insert a new step after the current step. ▶ Delete Step. Deletes the selected step.

UI Elements	Description
	<p>Smart Defect. Enables you to submit a defect to ALM.</p> <p>Drop-down options:</p> <ul style="list-style-type: none"> ▶ Smart Defect. (Default) Opens the Smart Defect Settings Dialog Box, enabling you to include automatically generated defect scenario information in your defect description. For details, see "Smart Defect Settings Dialog Box" on page 189. ▶ New Defect. Opens the ALM New Defect dialog box, enabling you to manually submit a defect to ALM. ▶ Add Defect Reminder. Opens the Defect Reminder Dialog Box (described on page 194).
	<p>Attachments. (Tests only) Opens the Run Attachments Dialog Box (described on page 155), enabling you to add, edit, or remove attachments in your step.</p>
	<p>Previous Component (Business Process Tests only). Returns the right pane and the Steps display area to the previous component.</p>
	<p>Next Component (Business Process Tests only). Advances the right pane and the Steps display area to the next component.</p>
	<p>Parameters mode (Business Process Tests only). Displays and enables you to edit the actual values of the parameters for the component selected in the left pane.</p>
	<p>Show Subtitles. Displays the steps, as an on-screen subtitle.</p> <p>For details on working with subtitles, see "Subtitles Toolbar" on page 164.</p>
	<p>Auto Expand. Expands each step when you click on its heading.</p>
	<p>Expand All. Expands all the steps in the Steps display area.</p>
	<p>Collapse All. Collapses all the steps in the Steps display area.</p>
	<p>Next Test. Ends the run for the current test and advances to the next test in the run. To return to a previous test, use the Previous Test button in the Run Control Sidebar (described on page 150).</p>


UI Elements	Description
	<p>Find. Enables you to search the steps for specific text.</p> <ul style="list-style-type: none"> ▶ Find searches the step name, description, and expected result for the specified text. ▶ The search text is not case-sensitive. ▶ The first step containing the text is automatically opened.









Steps Display Area

This area displays the steps in the current run. For Business Process Tests, it displays the steps in the current component. In Parameters Mode (Business Process Tests only) displays the parameters for the component selected in the left pane.

<p>Navigating</p>	<ul style="list-style-type: none"> ▶ By default, the Steps display area is set to Auto Expand, so that clicking on a step heading expands that step. ▶ When you start a run, the Steps display area displays the first step expanded. If you switch to another run that you have not yet completed, the last step you marked is expanded. ▶ When Auto Expand is selected (default), clicking on a step heading selects and expands the step. Clicking again collapses the step. ▶ When Auto Expand is not selected, double-clicking on the step heading selects and expands the step. Double-clicking again collapses the step. ▶ When you set the status of a step, the Steps display area automatically advances to the next step in the test.
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User interface elements are described below (unlabeled elements are shown in angle brackets>):

UI Elements	Description
	<p>Expand/Collapse. Expands or collapses the selected step. When the step is expanded, the name, description, and expected results are displayed.</p>

UI Elements	Description
	<p>Actual Result. Opens the Actual Result Dialog Box (described on page 166), enabling you to modify the actual result and add a screen capture or annotated screen capture to the actual result.</p>
	<p>Status. Displays a drop-down list that enables you to set the status of the step.</p> <p>Default status values:</p> <ul style="list-style-type: none"> ➤  Passed. The step passed. ➤  Failed. The step failed. ➤  Blocked. The step is blocked. ➤  Not Completed. The step was paused in the middle of the run. ➤  No Run (Default) The step has not yet been run. ➤  N/A. Current status is not applicable. <p>Note: In addition to the default status items above, the list includes any user-defined statuses defined for your ALM project. If the user-defined status does not have a custom icon assigned to it in ALM, an icon is created using the first letter of the status value. For details on user-defined statuses, see the <i>HP Application Lifecycle Management Administrator Guide</i>.</p> <p>Tip: You can CTRL-click to select multiple steps and then use the one of the selections in the drop-down list to set the status of all the selected steps.</p>

UI Elements	Description
<Step content>	<p>When a step is expanded, the following are displayed:</p> <ul style="list-style-type: none"> ▶ Name. If the step name is too long to display in the step heading it is truncated, and the full step name is displayed in the step description. ▶ Description ▶ Expected Result ▶ Actual Result (if added). If you added a screen capture to the Actual Result, an icon is added to this area. If you move the cursor over the icon, the screen capture is displayed. ▶ Step attachments. If you added an attachment to a step, an icon indicates the attachment. Double-clicking the icon opens the attachment in your default program for that file type. For images, moving the pointer over the icon displays a preview of the attachment.

Steps Status Bar

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Elements	Description
<Steps status bar>	Displays a progress bar and text indicating the number of steps that do not have a status of No Run , out of the total number of steps.
User Actions	Displays the number of user actions performed in the current test run.
Duration	Displays the amount of time spent on the current run. The Duration counter resets to 0 when you move between runs in the Run Control sidebar.

Subtitles Toolbar


This toolbar enables you to run, mark, and edit the steps in your test while in subtitles mode.

Tasks you can accomplish with the Subtitles toolbar:




- "How to Navigate Steps" on page 127
- "How to Mark Steps" on page 128
- "How to Edit and Add Actual Results and Attachments to Steps" on page 130







The following image shows the Subtitles toolbar.



To access	Click the Steps Sidebar > Subtitles button  , and then hover over the subtitle.
Important information	<ul style="list-style-type: none"> ➤ You can use hotkeys to mark a step's status, navigate steps, and perform other functions. For details, see "Hot Keys Settings Pane (Settings Dialog Box)" on page 63. ➤ You can still view the Steps sidebar while you are in Subtitles mode, by clicking on the Steps sidebar tab.

User interface elements are described below:

UI Elements	Description
	Previous Step. Displays the previous step.
	Next Step. Displays the next step.
	Pass. Marks the current step as Passed, and displays the next step.

UI Elements	Description
	Fail. Marks the current step as Failed. The next step is not displayed automatically. This gives you the opportunity to open a defect on the current step.
	Actual Result. Opens the Actual Result Dialog Box (described on page 166), enabling you to modify the actual result and add a screen capture or annotated screen capture to the actual result.
	Step Status. Enables you to select a status for the current step from the drop-down list.
	Hide Subtitles. Hides the subtitles display.
	Settings. Opens the Subtitles Settings Dialog Box (described on page 169).
	<p>Step Details. Displays the following step details:</p> <ul style="list-style-type: none"> ▶ Name ▶ Description ▶ Expected Result ▶ Actual Result. If you added a screen capture to the Actual Result, an icon is added to this area. If you place the cursor over the icon, the screen capture is displayed. ▶ Step attachments. If you added an attachment to a step, an icon indicates the attachment. Double-clicking the icon opens the attachment in your default program for that file type. For images, moving the pointer over the icon displays a preview of the attachment. <p>Click the button again to close the step details display.</p>

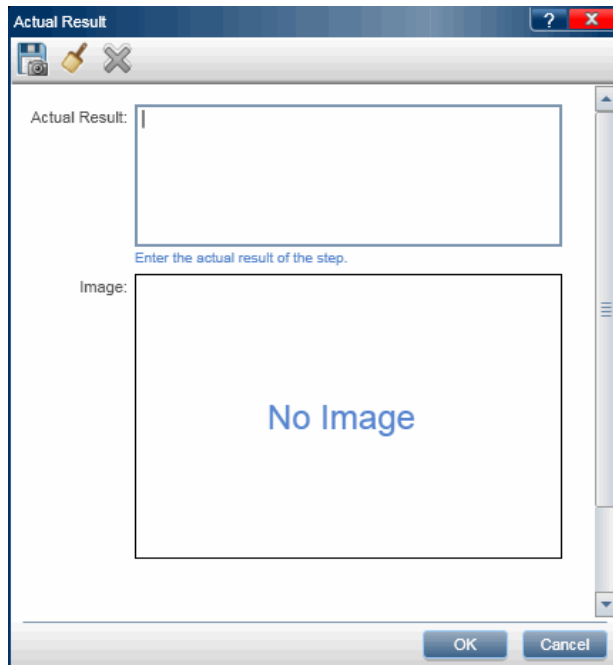
Actual Result Dialog Box



This dialog box enables you to edit the actual result of a step in your test.

Tasks you can accomplish with the Actual Result dialog box:




- ▶ "How to Edit and Add Actual Results and Attachments to Steps" on page 130
- ▶ "How to Detect and Submit a Defect" on page 183

The following image shows the Actual Result dialog box.



To access	Do one of the following: <ul style="list-style-type: none"> ▶ Click Steps Sidebar > Actual Result button . ▶ Click Steps Sidebar > Step header > Actual Result button .
Important information	If your steps have user defined fields from ALM, they can be edited in the Actual Result dialog box.

User interface elements are described below:

UI Elements	Description
	Save Screen Capture as Actual Result. Saves a screen capture of your application and adds it to the Actual Result for the current step.
	Save Annotation as Actual Result. Opens the Annotation Workspace, enabling you to annotate a screen capture of your application. When you close the Annotation Workspace, the annotated screen capture is added to the Actual Result for the current step. For details on working in the Annotation Workspace, see "Annotation Tools Sidebar" on page 196.
	Remove. Removes the screen capture or annotation from the Actual Result for the current step.
Actual Result	The actual result of the current step.
Image	Displays any image attachment you saved with the actual result of the current step.
<user defined fields>	Additional fields defined for the Step entity in the ALM project's customization. For details, see the ALM documentation.

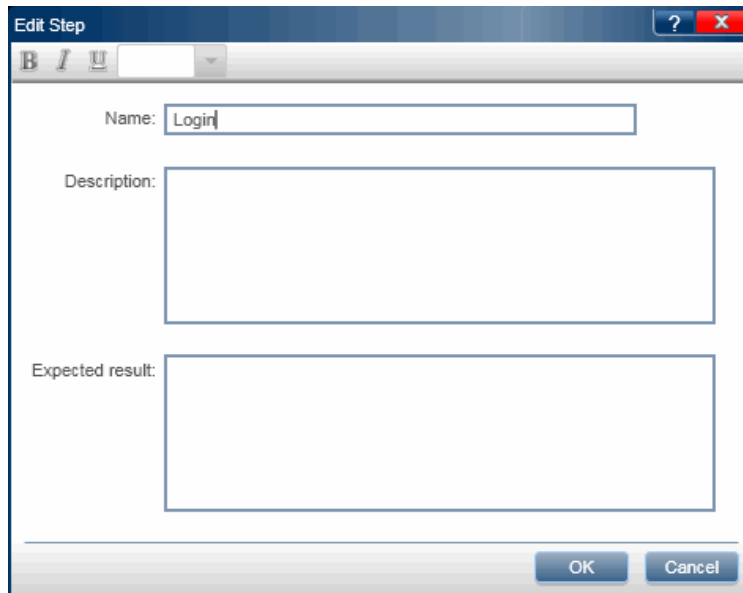
Edit Step Dialog Box


This dialog box enables you to edit a step in your test.

Tasks you can accomplish with the Edit Step dialog box:

- ▶ "How to Edit and Add Actual Results and Attachments to Steps" on page 130

The following image shows the Edit Step dialog box.



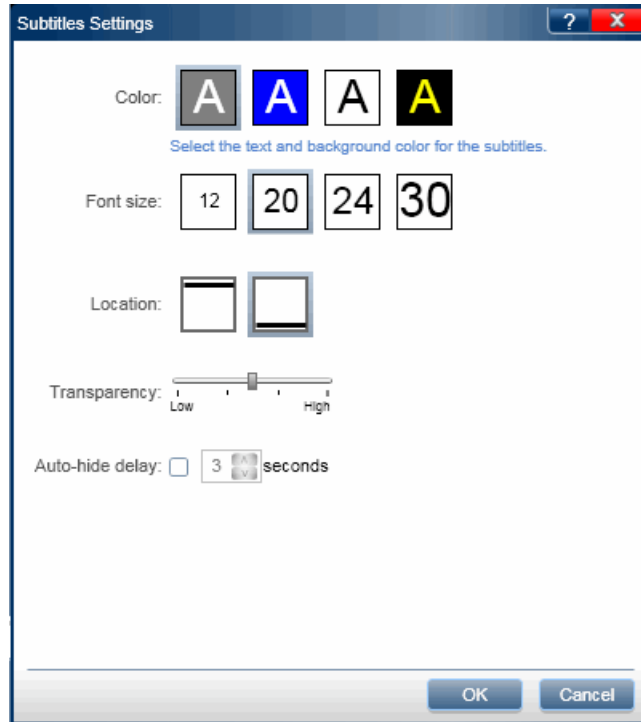
To access	Click Steps Sidebar > Edit Step button  .
Important information	Changes you make to steps in an ALM test are saved in the run results the Test Lab module of ALM. When the run ends you have the option to save the changes to the test, in the ALM Test Plan module as well.
See also	"Tests with Steps" on page 120



Descriptions of the user interface elements are available in the dialog box when you hover over them.

Subtitles Settings Dialog Box

This dialog box enables you to set display options for subtitles.

The following image shows the Subtitles Settings dialog box.



To access	Click the Steps Sidebar > Subtitles button  , hover over the subtitle and click the Settings button  .
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Descriptions of the user interface elements are available in the dialog box when you hover over them.

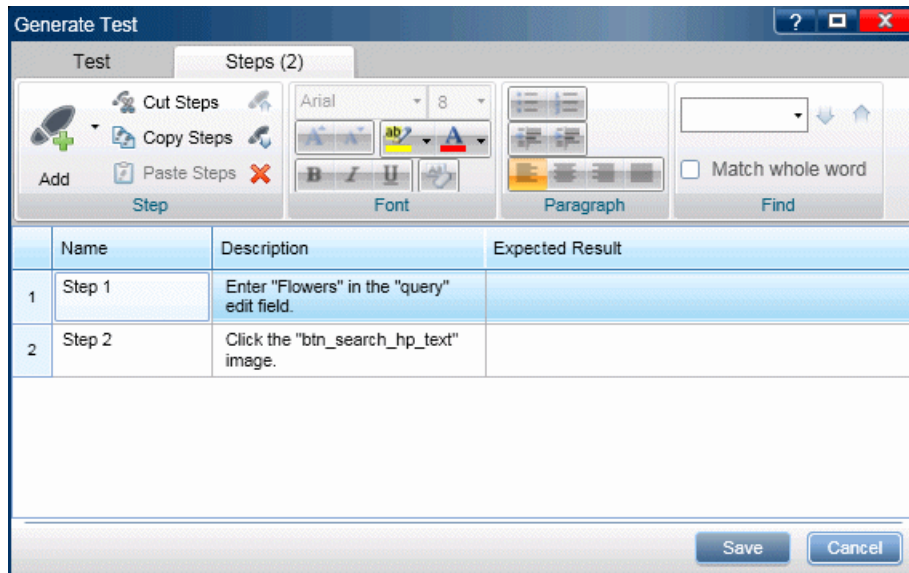
Generate Test Dialog Box


This dialog box enables you to edit the test details and steps for a new manual test. This test is based on user actions that you performed during an exploratory run session.

Tasks you can accomplish with the Generate Test dialog box:

- ▶ "How to Run an Exploratory Test in Sprinter" on page 131

The following image shows the Steps tab in the Generate Test dialog box.



To access	In the Results Group, select User Actions and click the Generate Test button  .
Important information	<ul style="list-style-type: none"> ▶ This functionality is available only at the end of the run session. ▶ This functionality is not available when viewing the results in the Results Viewer, even when Sprinter is installed.

The Generate Test dialog box includes the following tabs:

Test tab	Provides the same functionality that is available in the Details Pane (Plan Mode Definitions Group). For details, see "Details Pane (Plan Mode Definitions Group)" on page 90.
Steps tab	Provides the same functionality that is available in the Steps Tab. For details, see "Steps Tab" on page 99.
Save	Opens the save dialog box for specifying a test location.

Running Tests in Power Mode

When you run a manual test in Sprinter, you need to decide if you need to run your test in Power Mode .

The following table summarizes the Power Mode features to help you decide if you need to run your test in Power Mode:

Feature	Description
Application	<p>You must define an application for your test to use Power Mode. Defining an application for your test also enables Sprinter to open the application automatically when you start your test.</p> <p>Sprinter saves settings and other user-specific configurations and applies this information the next time you run Sprinter.</p> <p>Many Power Mode configurations are associated with their specific application.</p> <p>Because you define application for your test, all tests have the same defined application will share the same Power Mode configuration.</p> <p>For details, see:</p> <ul style="list-style-type: none"> ▶ "Applications" on page 223 ▶ "How User Information is Maintained" on page 47 ▶ "Application Pane (Power Mode Group)" on page 231
Data injection	<p>Enables you to automatically enter data into fields in your application. For details, see "Data Injection Overview" on page 248.</p>
Macros	<p>Enables you to record a series of user actions that you can run as a single command during your run. For details, see "Macros Overview" on page 262.</p>
Mirroring	<p>Enables you to replicate the user actions in your test on another computer with a different configuration (operating system, browser). For details, see "Testing on Multiple Machines - Overview" on page 296.</p>

Feature	Description
Scanners	Enables you to check that various aspects of your application behave correctly during a run session. You can scan your application for spelling errors, broken links (Web applications only), Web Standards errors (Web applications only), and localization errors. For details, see "Scanners Overview" on page 274.
Storyboard	Enables you to view a timeline of the user actions you performed on your test. The Storyboard displays the defects, comments, and defect reminders for each action in your test. For details, see "Storyboard Window" on page 215.
Comments	Enables you to add comments to user actions in your run. These comments can be reviewed later in the Storyboard. For details, see "Comment Dialog Box" on page 195 and "Run Results Overview" on page 202.
User Actions summary	Enables you to view a summary of the user actions in your test. For details, see "User Actions Pane/User Actions Summary Dialog Box" on page 213.

Troubleshooting and Limitations - Running Tests

This section describes troubleshooting and limitations for running tests with steps and Business Process Tests.

General

- ▶ You cannot run Sprinter with a display color depth of 256 colors (8 bit).
- ▶ When you run a Sprinter test, it ignores the conditions and test order in the ALM **Test Lab** module's Execution Flow.
- ▶ You can run only one Sprinter session on a machine at one time.
- ▶ If you close the **Run Attachments** dialog box and reopen it while an attachment is still uploading, the attachment is not displayed. Do not delete run attachments until they finish uploading.
- ▶ When working with Sprinter on a Windows Server 2008 or 2008 R2 machine, you must install the Desktop Experience feature in order to successfully display all image attachments in ALM.

To install Desktop Experience:

- ▶ On the server machine, select **Start > Administrative Tools > Server Manager**.
- ▶ Select the **Features** node, and click **Add Features** in the right pane.
- ▶ In the Add Features Wizard window, select the **Desktop Experience** check box, and click **Next**.
- ▶ Click **Install** to complete the installation through the wizard.

For more information about this issue, see <http://technet.microsoft.com/en-us/library/cc772567.aspx>.

Business Process Testing Limitations


- If you open a business process test that cannot be run, Sprinter displays the test without any steps. This may occur in, but is not limited to, the following situations:
 - Your business process test has an input parameter linked to an output parameter, but the number of iterations for the components that contain the input and output parameters do not match.
 - You created an output parameter for a flow but it is not linked to an existing parameter in a component.

Note that Sprinter will not display an error message for the test in this case.

- If a Business Process Testing configuration includes multiple iterations and you open it from Sprinter, the configuration parameters are not displayed in the **Parameters** pane of the Run Setup Definitions Group.

5

Detecting and Submitting Defects, and Using Tools

Throughout this guide, descriptions of features that are available only in Power Mode are identified by the Power Mode  icon.

This chapter includes:

Concepts

- ▶ Detecting and Submitting Defects Overview on page 178

Tasks

- ▶ How to Detect and Submit a Defect on page 183

Reference

- ▶ Tools Sidebar on page 186
- ▶ Annotation Tools Sidebar on page 193

Concepts

Detecting and Submitting Defects Overview

Sprinter provides tools that assist you to detect defects in your application and report them to ALM. These tools allow you to detect and report defects without disrupting the test flow.

Sprinter defect detecting tools enable you to examine the display of the application being tested, for defects such as alignment, spacing, and color usage. You can also annotate a screen capture with shapes, lines, arrows, and text, to assist in highlighting and communicating defects.

SELECT FLIGHT

Select your departure and return flight from the selections below. Your total price will be higher than quoted if you elect to fly on a different airline for both legs of your travel.

DEPART
Frankfurt to London 2/5/2010

SELECT	FLIGHT	DEPART	STOPS
<input type="radio"/>	Blue Skies Airlines Price: \$270 (based on round trip)	5:03	non-stop
<input type="radio"/>	Blue Skies Airlines Price: \$271 (based on round trip)	7:10	non-stop
<input type="radio"/>	Pangaea Airlines 362 Price: \$274 (based on round trip)	9:17	non-stop
<input type="radio"/>	Unified Airlines 363 Price: \$281 (based on round trip)	11:24	non-stop

RETURN
London to Frankfurt 4/8/2010

SELECT	FLIGHT	DEPART	STOPS
<input type="radio"/>	Blue Skies Airlines 630 Price: \$270 (based on round trip)	12:23	non-stop
<input type="radio"/>	Blue Skies Airlines 631 Price: \$273 (based on round trip)	14:30	non-stop
<input type="radio"/>	Pangaea Airlines 632 Price: \$282 (based on round trip)	16:37	non-stop
<input type="radio"/>	Unified Airlines 633 Price: \$303 (based on round trip)	18:44	non-stop

CONTINUE

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Sprinter defect submitting tools enable you to submit a defect to ALM, email an annotated screen capture of the application screen, or print an annotated screen capture of the application screen.

The defect detecting and submitting tools are located in the Annotation Workspace. When you open the Annotation Workspace, a capture of your current screen is displayed in the workspace. You can examine the elements in this screen capture and add any annotations to it. When you submit a defect and attach a screen capture, add a screen capture to the actual results of a step, or if you keep a record of a defect from the Annotation Workspace, this screen capture is attached with the annotations you added.

This section also includes:

- "Using Annotation Tools to Detect Defects" on page 180
- "Submitting Defects" on page 181

Using Annotation Tools to Detect Defects

Sprinter provides a variety of tools to enable you to detect defects in the display of your application.

This section includes:

- "Ruler Tool" on page 180
- "Guides Tool" on page 181
- "Color Picker Tool" on page 181

Ruler Tool

The Ruler tool enables you to accurately measure the distance between user interface elements in the application display. The Ruler tool displays the length of the ruler line in pixels.



Frankfurt to London		2/5/2010	
SELECT	FLIGHT	DEPART	STOPS
<input type="checkbox"/>	Blue Skies Airlines	5:03	non-stop

User interface elements are typically arranged horizontally and vertically on the screen. Therefore, the Ruler tool locks the ruler line along the horizontal or vertical axes when you drag it (SHIFT-drag to unlock), to make measuring distances between elements easier. Multiple ruler lines can be placed on the annotation Workspace to enable you to compare the distances of multiple elements in the user interface. You can zoom in on the annotations workspace to more accurately measure elements.

Guides Tool



The Guides tool enables you to examine the alignment of user interface elements in the application.

When you select the Guides tool, vertical and horizontal guide lines follow the cursor as you move over the screen capture of your application in the annotation workspace. When you click the left mouse button, the guide lines are placed on the workspace, which enables you to determine if elements are aligned with one another. You can leave the guide lines on the workspace to be included in the screen capture of the application when you report the defect, or save, email, or print the screen capture. You can place multiple sets of guide lines on the workspace. You can zoom in on the annotations workspace to more accurately view the alignment of elements.

Color Picker Tool



The Color Picker tool enables you to detect the color of any point on the screen and to compare the colors of two or more points on the screen. This allows you to determine if colors are used consistently in the application being tested.

When you select the Color Picker tool, a pop-up balloon displays the RGB (Red, Green, Blue) values above the cursor as you move over the Annotation Workspace. By placing multiple pop-up balloons on the workspace, you can determine if the colors of various on-screen elements are consistent. You can leave pop-up balloons on the workspace to be included in the screen capture of the application when you report the defect, or save, email, or print the screen capture.

Submitting Defects

Sprinter gives you the following ways to submit defects to ALM:



► **Smart Defect**

When you submit a defect in ALM using Sprinter's **Smart Defect**, Sprinter lets you select which of the following types of information to automatically add to your defect:

- **Defect description.** You can choose to add the defect scenario to the description of your ALM defect. The scenario can include an automatically generated list of the test steps and/or a list of the recorded user actions you performed in your run.

After you select which information to include, the ALM New Defect dialog opens with the selected information already entered in the defect's description. You then fill in the other defect fields and submit the defect.

- **Screen captures and movies.** You can choose to attach a screen capture that illustrates the defect to your ALM defect. If you submit the defect from the Annotation Workspace, the screen capture will include any annotations you added. For details, see "Annotation Tools Sidebar" on page 193. You can also attach a movie of your run.

For details on configuring the information to include in your defect, see "Smart Defect Settings Dialog Box" on page 188.

► **ALM Defect**

You can open the ALM New Defect Details dialog box directly from Sprinter and manually fill in all the defect fields. The annotation is saved with the Sprinter test or component—it is not added as an attachment to the defect.

When you submit an ALM defect using Sprinter, the defect is created in the ALM server, domain, and project that you configured in the ALM Connection Dialog Box.

Tasks

How to Detect and Submit a Defect

This task describes the different ways you can submit a defect in ALM using Sprinter. You can also email, save, or print a screen capture of a defect in your application.

This task includes the following steps:

- "Examine and annotate a screen capture of your application - Optional" on page 183
- "Submit a defect" on page 184
- "Create a defect reminder" on page 185
- "Email, save, or print a screen capture of the defect - Optional" on page 185

Examine and annotate a screen capture of your application - Optional

You can use Sprinter's screen examining and annotations tools to detect and mark defects in a screen capture of your application.



- 1** In the **Tools** sidebar, click the **Annotation Workspace** button to open the Annotation Workspace.
- 2** Use the tools in the **Annotations Tools** sidebar to find defects and prepare your screen capture. For details, see "Annotation Tools Sidebar" on page 196. For more details, see "Detecting and Submitting Defects Overview" on page 178

Submit a defect

You can submit a defect from one of the following locations:

- ▶ Tools Sidebar
- ▶ Steps Sidebar
- ▶ Storyboard Window

From any of these locations you can:



- ▶ Click the **Smart Defect** button in the **Tools**, **Steps**, or **Annotation Tools** sidebars to open a **Smart Defect** (default). Smart defects enable you automatically include detailed defect scenario information in the defect description, as well as a screen capture or movie of a defect in your application. For details, see "Submitting Defects" on page 181.

For details on configuring the information to include in your Smart Defect, see "Smart Defect Settings Dialog Box" on page 188.

For details, see "Submitting Defects" on page 181.



- ▶ Click the down-arrow next to the **Smart Defect** button and select **New Defect** to open the New Defect Settings dialog box in ALM. This enables you to manually set the ALM defect fields. For details, see "Submitting Defects" on page 181.

If you submit your defect from the **Annotation Workspace**, click the **Close** button in the **Annotation Tools** sidebar to close the Annotation Workspace and return to your application.

For more details, see:

- ▶ "Tools Sidebar" on page 186.
- ▶ "Steps Sidebar" on page 157
- ▶ "Annotation Tools Sidebar" on page 196

You can also submit a defect while reviewing your run results from the Defect Reminders Pane (Results Group) (described on page 211) and while resolving differences in a mirroring test in the Differences Viewer (described on page 341).

Create a defect reminder

You can create a defect reminder from one of the following locations:

- **Tools Sidebar**
- **Steps Sidebar**
- **Storyboard Window**

From any of these locations you can:



- Click the down-arrow next to the **Smart Defect** button and select **Defect Reminder** to add a reminder to submit a defect at a later time.

For details see "Defect Reminder Dialog Box" on page 194.

Email, save, or print a screen capture of the defect - Optional

You can email, save, or print a screen capture of a defect in your application from one of the following locations:

- **Tools sidebar**
- **Annotations Tools sidebar**



From any of these locations you can click the down-arrow next to the **Screen Capture** button and select:

- **Email** to open an email message in your default email editor and include a screen capture of a defect in your application as an attachment.
- **Save** to save a screen capture of a defect in your application to the file system.
- **Print** to print a screen capture of a defect in your application.


If you email, save, or print a screen capture from the **Annotation Workspace**, click the **Close** button in the **Annotation Tools** sidebar to close the Annotation Workspace and return to your application.

For more details, see the "Tools Sidebar" on page 186 and the "Annotation Tools Sidebar" on page 196.

Reference

Tools Sidebar

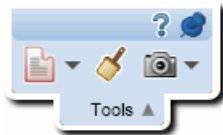
This sidebar enables you to find defects in the user interface of your application and report them to ALM. You can open the Annotation Workspace to annotate a screen capture of your application and include it in an ALM defect, or you can save, print, or email the screen capture.

 In Power Mode this sidebar also enables you to add a comment to your test, open the Timeline Viewer, or display a list of the user actions in your run.

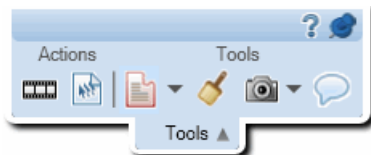
Tasks you can accomplish with the **Tools** sidebar:




- ▶ "How to Detect and Submit a Defect" on page 183

The following image shows the **Tools** sidebar without Power Mode:















The following image shows the Tools sidebar with Power Mode:



<p>To access</p>	<p>Do the following:</p> <ol style="list-style-type: none"> 1 Enter Run mode 2 Open a test or component. 3 Click the Run  or the Power Mode Run  button. <p>Tip: To lock the sidebar in the open position, click the thumbtack  icon. To reposition the sidebar, click and drag on the sidebar header.</p>
<p>See also</p>	<p>"Detecting and Submitting Defects Overview" on page 178</p>

User interface elements are described below:

UI Elements	Description
	<p> Storyboard. Opens the Storyboard Window enabling you to view a visual summary of all the user actions in your test. For details on the Storyboard Window, see "Storyboard Window" on page 215.</p>
	<p> User Actions. Displays a list of the recorded user actions. You can export the list to an .xml or .csv file. You can also print or include the summary in an email. For details, see "User Actions Pane/User Actions Summary Dialog Box" on page 209.</p>
	<p>Smart Defect. Enables you to submit a defect to ALM.</p> <p>Drop-down options:</p> <ul style="list-style-type: none"> ➤  Smart Defect. (Default) Opens the Smart Defect Settings Dialog Box, enabling you to include automatically generated defect scenario information in your defect description. For details, see "Smart Defect Settings Dialog Box" on page 189. ➤  New Defect. Opens the ALM New Defect dialog box, enabling you to manually submit a defect to ALM. ➤  Add Defect Reminder. Opens the Defect Reminder Dialog Box (described on page 194).

UI Elements	Description
	<p>Annotation Workspace. Opens the Annotation Workspace, enabling you to detect user interface defects in your application and add annotations in a screen capture of your application.</p> <p>From the Annotation Workspace you can include the annotated screen capture in an ALM defect, save it to the actual result of the current step, or you can save, print, or email the annotated screen capture.</p> <p>For details see, "Annotation Tools Sidebar" on page 196.</p>
	<p>Screen Capture. Takes a snapshot image of your application.</p> <p>Drop-down options:</p> <ul style="list-style-type: none"> ➤ Email. (Default) Opens a message in your default email application with the attached screen capture of the application. ➤ Save. Saves the screen capture of the application. ➤ Print. Prints the screen capture of the application.
	<p> Add Comment. Opens the Comment Dialog Box, enabling you to add a comment to the current user action. For more details, see "Comment Dialog Box" on page 195.</p> <p>You can view the comments you added to your test in the Storyboard Window, for each action. For details on the Timeline Viewer, see "Storyboard Window" on page 215.</p>

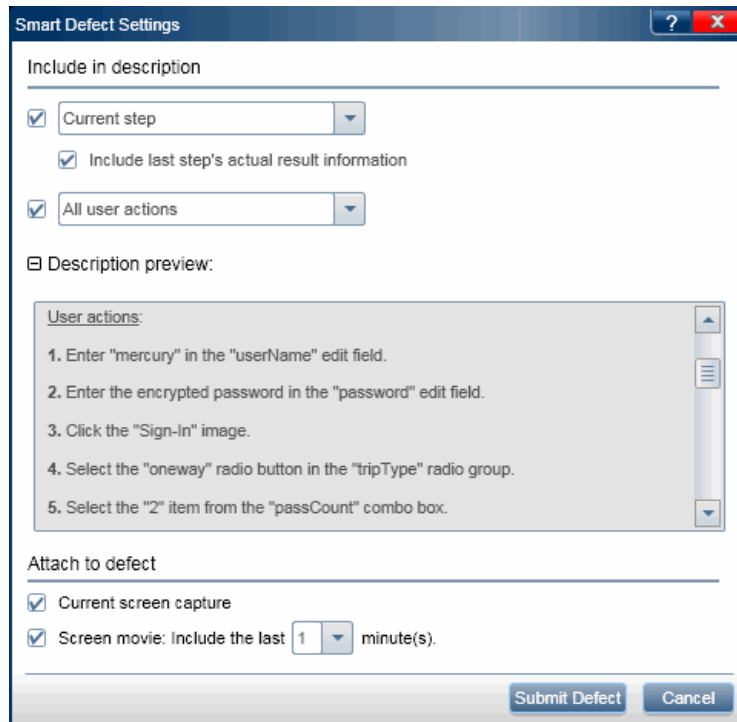
Smart Defect Settings Dialog Box

This dialog box enables you to define the information that will be included in your defect's description, and any defect attachments.

Tasks you can accomplish with the Smart Defect Settings dialog box:

- "How to Detect and Submit a Defect" on page 183



The following image shows the Smart Defect Settings dialog box.



The image shows the "Smart Defect Settings" dialog box. It has a title bar with a question mark and a close button. The dialog is divided into several sections:


- Include in description:** This section contains three checked items:
 - Current step (with a dropdown arrow)
 - Include last step's actual result information
 - All user actions (with a dropdown arrow)
- Description preview:** This section is collapsed (indicated by a square icon) and shows a preview of the description. It is titled "User actions:" and contains a list of five steps:
 1. Enter "mercury" in the "userName" edit field.
 2. Enter the encrypted password in the "password" edit field.
 3. Click the "Sign-In" image.
 4. Select the "oneway" radio button in the "tripType" radio group.
 5. Select the "2" item from the "passCount" combo box.
- Attach to defect:** This section contains two checked items:
 - Current screen capture
 - Screen movie: Include the last minute(s).

At the bottom right of the dialog are two buttons: "Submit Defect" and "Cancel".

To access	<p>During a test run, click the Smart Defect button  from one of the following locations:</p> <ul style="list-style-type: none"> ➤ Tools sidebar ➤ Steps sidebar
Important information	<p> Action options are available only if you are working in Power Mode.</p>
See also	<p>"Detecting and Submitting Defects Overview" on page 178</p>

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Elements	Description
<Step information>	<p>Available only when you are working in test with steps. Enables you to include step information as part of the description of the defect.</p> <p>Drop-down options:</p> <ul style="list-style-type: none"> ➤ All steps to current. Includes the step name and description for all the steps in the test up to the current step. ➤ All steps. Includes the step name and description for all the steps in the test. ➤ Custom. Opens the Custom Selection Dialog Box (described on page 193), enabling you to select specific steps to include in the defect description. <p>The expected result for the last step that you include in the description is also added to the defect description.</p>
Include last step's actual result information	<p>Adds the actual result (if available) for the last step you included in the defect description.</p>

UI Elements	Description
 <Action information>	<p>Enables you to include user action information as part of the description of the defect.</p> <p>Drop-down options:</p> <ul style="list-style-type: none"> ▶ Last 5 user actions. Includes a description of the last five user actions. ▶ Last 10 user actions. Includes a description of the last ten user actions. ▶ All user actions. Includes a description of all the user actions. ▶ Custom. Opens the Custom Selection Dialog Box (described on page 193), enabling you to select specific user actions to include in the defect description.
Description preview	A preview of the information that will be included in the defect description.

UI Elements	Description
Attach to defect	<ul style="list-style-type: none"> ➤ Current screen capture. Include a screen capture of the application as an attachment to the defect. <ul style="list-style-type: none"> ➤ If you submit the defect from the Annotation Workspace, the screen capture includes your annotations. ➤ If you submit the defect from the Differences Viewer, screen captures of both machines are attached to the defect. ➤ Screen movie. Include a movie of your run. Select a value from the drop-down box to define how much of the movie to include. <ul style="list-style-type: none"> ➤ The screen movie functionality must first be enabled by your ALM administrator. ➤ Sprinter supports recording screen movies of up to 10 minutes. However, your ALM administrator may have reduced the maximum allowable movie length in the Sprinter section of the Project Customization page in ALM. ➤ Screen movies can be enabled and disabled in the Run Settings Pane (Settings Dialog Box) (described on page 66). You must enable screen movies prior to running your test. ➤ Sprinter sidebars may not be visible in movies.
Submit Defect	Closes the Smart Defect Settings dialog box and opens the ALM New Defect dialog box, enabling you to fill in the remaining information in the defect.
Cancel	Cancels the defect submission.

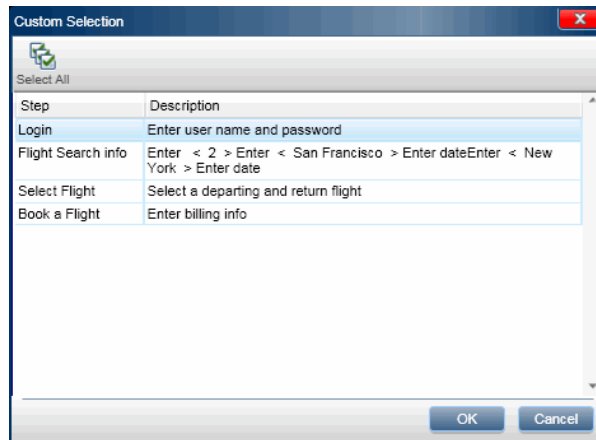
Custom Selection Dialog Box

This dialog box enables you to select specific steps or user actions to include in a defect.

Tasks you can accomplish with the Custom Selection dialog box:

- "How to Detect and Submit a Defect" on page 183

The following image shows the Custom Selection dialog box.



To access	In the Smart Defect Settings Dialog Box, select Custom from the step information or action information drop-down lists.
------------------	--

User interface elements are described below (unlabeled elements are shown in angle brackets>):

UI Elements	Description
Select All	Selects all the steps or actions in the list.
<Step / Action list>	The list of steps or user actions in your test. CTRL+CLICK to select multiple steps or actions. <ul style="list-style-type: none">▶ The list of actions includes only those you performed up to this point in your run.▶ The list of steps includes all the steps in your test.

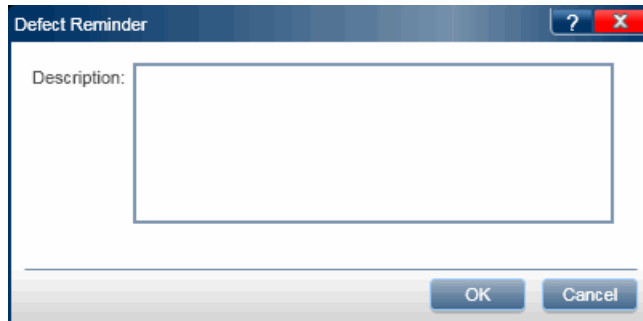
Defect Reminder Dialog Box


This dialog box enables you to add a reminder to open a defect at a later time.

Tasks you can accomplish with the Defect Reminder dialog box:

- ▶ "How to Detect and Submit a Defect" on page 183

The following image shows the Defect Reminder dialog box.



<p>To access</p>	<p>During a test run, from one of the following locations:</p> <ul style="list-style-type: none"> ▶ Tools sidebar ▶ Steps sidebar <p>Click the down arrow next to the Smart Defect button  and select Add Defect Reminder.</p>
<p>Important information</p>	<p>You can view your defect reminders:</p> <ul style="list-style-type: none"> ▶ In the Storyboard window, for the user action for which the defect reminder was created. For details, see "Storyboard Window" on page 211. ▶ By selecting Results > Defect Reminders <p>Note: Defect reminders are discarded when you remove a run from the Run Setup area, replace a run with a new run, or close Sprinter. If the run you are closing contains defect reminders, a warning message is displayed.</p>

Comment Dialog Box


This dialog box enables you to add a comment to the current user action.

Tasks you can accomplish with the Comment dialog box:

- ▶ "How to Run a Manual Test in Sprinter" on page 122

The following image shows the Comment dialog box.



To access	During a test run, select Tools sidebar > Add Comment button  .
Important information	<p>You can add only one comment per user action. To edit a comment you created for your current action, open the Add Comment dialog box again.</p> <p>You can view your comments:</p> <ul style="list-style-type: none">▶ In the Timeline Viewer, for the user action for which the defect reminder was created.▶ By selecting Results > Run Summary and then clicking the link next to Comments added.

Annotation Tools Sidebar

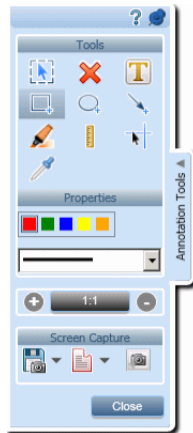
This sidebar enables you to add graphic annotations to a screen capture of your application. It also enables you to examine the characteristics of the user interface elements in your application and detect defects in their layout and color.



You can include the annotated screen capture in a defect in ALM. You can also print, save, or include the annotated screen capture in an email.

Tasks you can accomplish with the Annotation Tools sidebar:









- "How to Detect and Submit a Defect" on page 183








The following image shows the **Annotation Tools** sidebar.






<p>To access</p>	<p>In the Tools sidebar or the Actual Result Dialog Box, click the Annotation Workspace button .</p> <p>The Annotation Workspace opens with the Annotations Tools sidebar open.</p> <ul style="list-style-type: none"> ➤ Click the sidebar tab, or click off the sidebar tab, to close the sidebar. ➤ To lock the sidebar in the open position, click the thumbtack  icon. ➤ To reposition the sidebar, click and drag on the sidebar header.
<p>Important information</p>	<p>Some objects like drop-down menus automatically close when you open the Annotation Workspace. Use the keyboard shortcut (CTRL + F10) to open the Annotation Workspace with these objects displayed.</p>
<p>See also</p>	<p>"Using Annotation Tools to Detect Defects" on page 180</p>

User interface elements are described below:


UI Elements	Description
Tools	
	<p>Selection. Selects a previously created annotation on the annotation workspace. Once an annotation is selected, it can be moved, resized, or deleted. Click off the annotation to deselect.</p>
	<p>Delete Annotation. Deletes the selected annotations from the workspace.</p>
	<p>Text. Adds a text box to the Annotation Workspace. Use the Properties area to determine the background color and text color for the text box. A yellow background has black text, and a black background has white text. Select the color that will be most visible based on the area on which you are drawing the text box.</p>
	<p>Rectangle. Draws a rectangle on the Annotation Workspace. Use the Properties area to determine the color and width of the rectangle.</p>
	<p>Ellipse. Draws an ellipse on the Annotation Workspace. Use the Properties area to determine the color and width of the ellipse.</p>
	<p>Arrow. Draws an arrow on the Annotation Workspace. Use the Properties area to determine the color and width of the arrow.</p>
	<p>Highlight. Highlights an area of the Annotation Workspace. Click and drag to define the length and width of the highlight. Use the Properties area to determine the color of the highlight.</p>
	<p>Ruler. Draws a line on the annotation workspace, displaying its length in pixels. The ruler tool locks the ruler line along the horizontal or vertical axes while dragging. To release the axis lock, press the Shift key while dragging. For more details, see "Ruler Tool" on page 180.</p>

UI Elements	Description
	<p>Guides. Displays a vertical and horizontal guide line along the length and width of the annotation workspace, with their intersection under the cursor (crosshair). Guide lines can be repositioned using the Select tool. The vertical and horizontal lines can be also be individually selected and repositioned.</p> <p>Click to place the guides on the workspace. For more details, see "Guides Tool" on page 181.</p>
	<p>Color Picker. Displays the RGB values of a point on the Annotation Workspace, in a pop-up window. Click a location to place the pop-up window on the workspace. For more details, see "Color Picker Tool" on page 181.</p>
<p>Properties</p>	
	<p>Color and Weight. Determines the color and width of the currently selected tool from among the Text, Highlight, Arrow, Rectangle, and Circle tools.</p>
	<p>Zoom. Zooms in and out on the display of the Annotation Workspace.</p> <p>The zoom function contains the following controls:</p> <ul style="list-style-type: none"> ➤  Zooms out on the display. ➤  Restores the display to 100%. ➤  Zooms in on the display. The display cannot zoom in more than 100%. <ul style="list-style-type: none"> ➤ When you zoom in on the image you can then drag the image by pressing CTRL + LEFT MOUSE BUTTON. The cursor turns into a pointing hand and you can drag different areas of the image in or out of view using the mouse or keyboard arrows <p>You can also zoom in and out using the mouse wheel.</p>

UI Elements	Description
Screen Capture	
	<p>Screen Capture. Takes a screen capture of your application.</p> <p>Drop-down options:</p> <ul style="list-style-type: none"> ▶ Save. Saves the screen capture of the application. ▶ Print. Prints the screen capture of the application. ▶ Email. Opens a message in your default email application with the screen capture of the application as an attachment.
	<p>Smart Defect. Enables you to submit a defect to ALM.</p> <p>Drop-down options:</p> <ul style="list-style-type: none"> ▶ Smart Defect. (Default) Opens the Smart Defect Settings Dialog Box, enabling you to include automatically generated defect scenario information in your defect description. For details, see "Smart Defect Settings Dialog Box" on page 189. ▶ New Defect. Opens the ALM New Defect dialog box, enabling you to manually submit a defect to ALM.
	<p>Save to Actual Result. Adds the annotated screen capture to the Actual Results of the current step. Disabled for test with no steps.</p>
Close	Closes the Annotation Workspace.

6

Run Results

Throughout this guide, descriptions of features that are available only in Power Mode are identified by the Power Mode  icon.

This chapter includes:

Concepts

- ▶ Run Results Overview on page 202

Tasks

- ▶ How to Review Run Results on page 203

Reference

- ▶ Results Group on page 208
- ▶ Storyboard Window on page 220

Concepts


Run Results Overview

Sprinter's run results provide a summary of your run. In the run results you can:

- ▶ View a summary of your run including basic run information, the number of user actions, submitted defects, defect reminders and comments, and a breakdown of the steps by status.
- ▶ View details of all the steps in your run including actual results and any attached screen captures or other attachments.
- ▶ View details of all the defects you submitted during your run. You can open the ALM Defect Details dialog box from the run results to review the information in your defects.
- ▶ View details of the defect reminders you created during your run. You can submit defects to ALM based on these defect reminders.
- ▶ View details of all the user actions you performed during your run, and convert the user actions to a formal test.
- ▶ Open the Storyboard, enabling you to view detailed information for each user action you performed in your run, and export this information to a PDF or Microsoft Word file.

Tasks

How to Review Run Results

 Some steps are relevant only for tests run in Power Mode.

This task describes the various steps you can perform to review your run results:

- "Review a summary of your run" on page 203
- "Review the steps you performed in your run" on page 204
- "Review the defects you submitted during your run" on page 204
- "Review the defect reminders you created during your run" on page 204
- "Review the user actions you performed during your run" on page 205
- "Review details and screen captures of your user actions in the Storyboard" on page 205

Review a summary of your run

The **Run Summary** pane displays a summary of the details of your test run, including basic test and run information as well as a summary of the steps and actions in your test. You can also view the defects you opened and comments you added, and print or email the summary.

Click the **Run Summary** node in the Results Group to display the Run Summary pane.

Review the steps you performed in your run

The **Steps Summary** pane displays a summary of any steps you ran in your test, including actual results and any attached screen captures or other attachments. You can also export, print, or email the steps in your test.

Click the **Steps Summary** node in the Results Group to display the Steps Summary pane. For details, see "Steps Tab (Results Group)" on page 211.

Review the defects you submitted during your run

The **Submitted Defects** pane displays a summary of all the defects you submitted during your run. You can open the ALM Defect Details dialog box from the Submitted Defects pane to review the information in your defects. You can also print or email the summary of your submitted defects.

Click the **Submitted Defects** node in the Results Group to display the **Submitted Defects Pane**.

For details, see "Submitted Defects Pane (Results Group)" on page 213.

Review the defect reminders you created during your run

The **Defect Reminders Pane** displays a summary of the defect reminders you created during your run. You can submit defects to ALM based on these defect reminders. You can also print or email the summary of your defect reminders.

Click the **Defect Reminders** node in the Results Group to display the **Defect Reminders Pane**.

For details, see "Defect Reminders Pane (Results Group)" on page 215.

Review the user actions you performed during your run

The **User Actions** pane displays a summary of the user actions you performed during your run. You can export the user actions to a manual test, an automated test data file, or an **.xls**, **.xlsx**, or **.csv** file. You can also print and email the list of your user actions.

Click the **User Actions** node in the Results Group to display the User Actions pane.

For details, see "User Actions Pane/User Actions Summary Dialog Box" on page 217.

Review details and screen captures of your user actions in the Storyboard

1 Select the Storyboard node in the Results group.

The Storyboard opens.

2 Select an action in the Timeline.

All the user actions you performed in your run are represented in the Timeline as image thumbnails along the bottom of the Storyboard.

Note: Some user actions in your run may not have a corresponding screen capture. Screen captures are saved per-action based on your settings in the Run Settings Pane (Settings Dialog Box).

When you select an action in the Timeline, its screen capture is displayed in the upper left pane and the action details are displayed in the upper right pane of the Storyboard.

You can filter the actions that are displayed in the Timeline. For details on how to filter and navigate the Timeline, see "Storyboard Window" on page 220.

3 Review the action details.

The upper right pane of the Storyboard displays information about the action you selected in the Timeline.

From this pane you can:

- View a description of the action.
- View a list of any **defects** you submitted for the action. You can click the defect ID link to open the Defect Details dialog box from ALM and view or edit your defect.
- View a list of any **defect reminders** you created for the action. You can submit defects to ALM based on these reminders.
- View the **comment**, if you added one to the action.

- ▶ View any **differences** that may have been found for the action (Tests run with mirroring only).

4 Export the storyboard to a PDF or Word file.

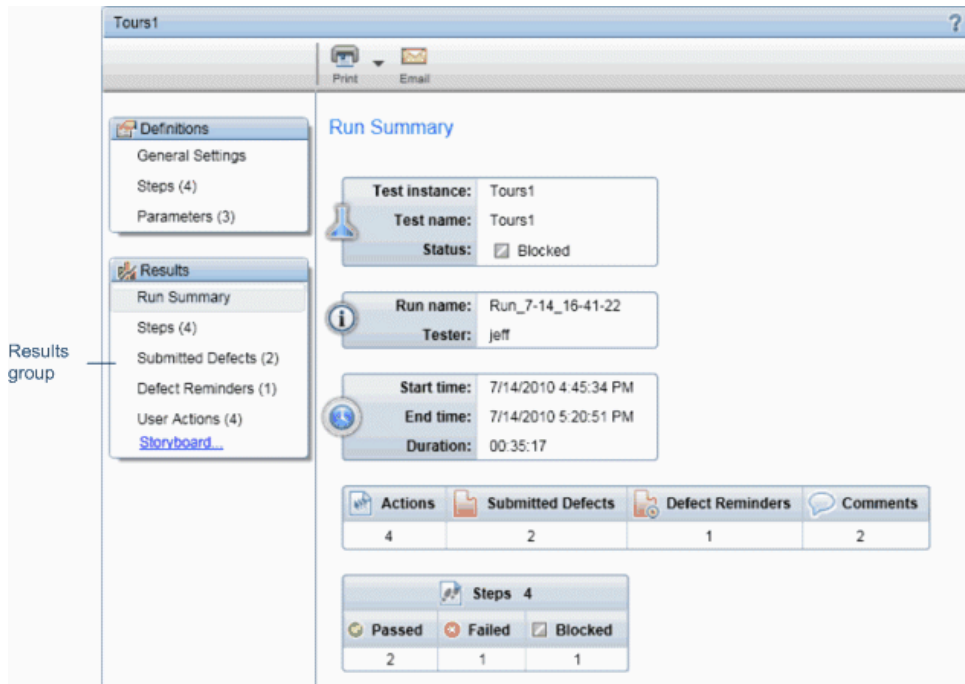
Select a location in the file system in which to save the PDF file. This file includes run information, step status information, and the action details for the entire run session.

For more details on how to view and navigate the storyboard, see "Storyboard Window" on page 220.

Reference

Results Group

The Results group is located in the left side of the main window.



This group includes the following:

- "Run Summary Pane (Results Group)" on page 209
- "Steps Tab (Results Group)" on page 211
- "Submitted Defects Pane (Results Group)" on page 213
- "Defect Reminders Pane (Results Group)" on page 215
- "User Actions Pane/User Actions Summary Dialog Box" on page 217
- "Storyboard Window" on page 220


Run Summary Pane (Results Group)

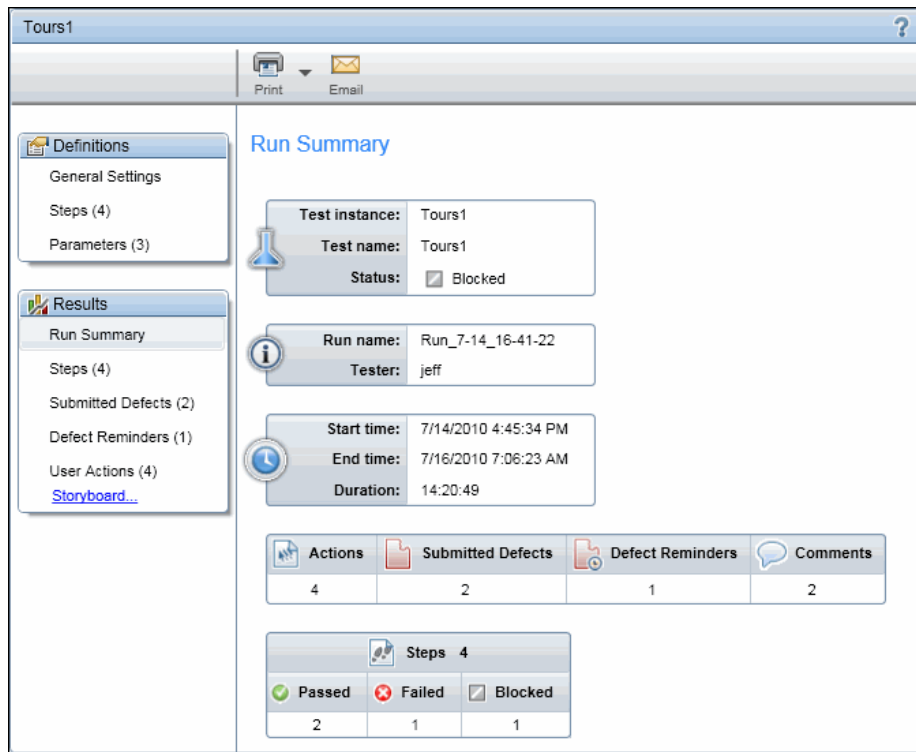
This pane displays a summary of the details of your test run. You can view basic test and run information as well as a summary of the steps and actions in your test and the defects and comments you opened.

Tasks you can accomplish with the Run Summary pane:

- ▶ "How to Review Run Results" on page 203

The following image shows the Run Summary pane.

Some result information is available only for tests run in Power Mode .



To access	After running a test or component, select the Results > Run Summary node.
------------------	---

Descriptions of the user interface elements are available in the pane.

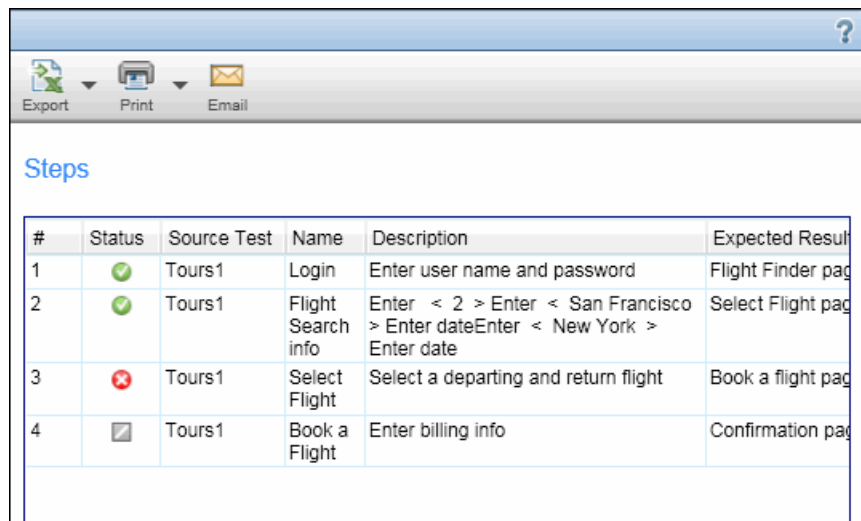
Steps Tab (Results Group)

This tab displays a summary of the steps you performed in your test. It also enables you to export, print, or email your step information.

Tasks you can accomplish with the Steps tab:

- "How to Review Run Results" on page 203

The following image shows the Steps tab.



#	Status	Source Test	Name	Description	Expected Result
1	✓	Tours1	Login	Enter user name and password	Flight Finder pag
2	✓	Tours1	Flight Search info	Enter < 2 > Enter < San Francisco > Enter dateEnter < New York > Enter date	Select Flight pag
3	✗	Tours1	Select Flight	Select a departing and return flight	Book a flight pag
4	☐	Tours1	Book a Flight	Enter billing info	Confirmation pag

To access	After running a test or component, select the Results > Steps node.
Important information	<ul style="list-style-type: none"> ➤ You can resize the Sprinter window and the columns in the display to view all the information. ➤ Double-clicking a thumbnail in the Screen Capture column or the Attachments column opens the attachment in the default program on your computer for that file type. ➤ You cannot Export, Print, or Email steps in a Business Process Test.

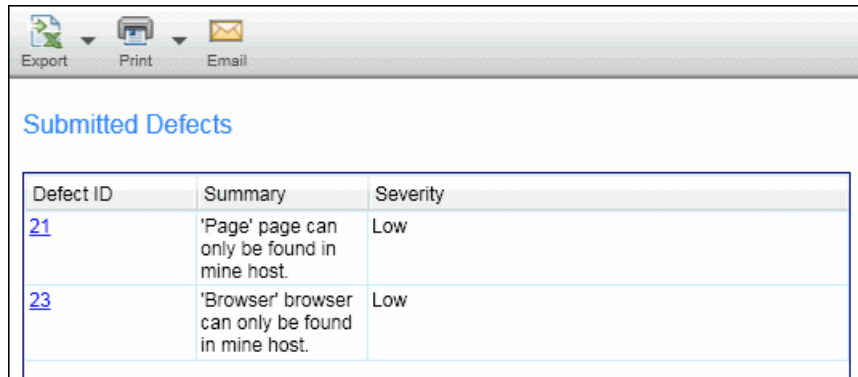
Submitted Defects Pane (Results Group)

This pane displays a summary of the defects you submitted during your test run. You can also export, print, or email a summary of your submitted defects.

Tasks you can accomplish with the Submitted Defects pane:

- ▶ "How to Review Run Results" on page 203

The following image shows the Submitted Defects pane.



Defect ID	Summary	Severity
21	'Page' page can only be found in mine host.	Low
23	'Browser' browser can only be found in mine host.	Low

To access	After running a test or component, select the Results > Submitted Defects node.
Important information	Clicking the Defect ID number opens the Defect Details dialog box from ALM.

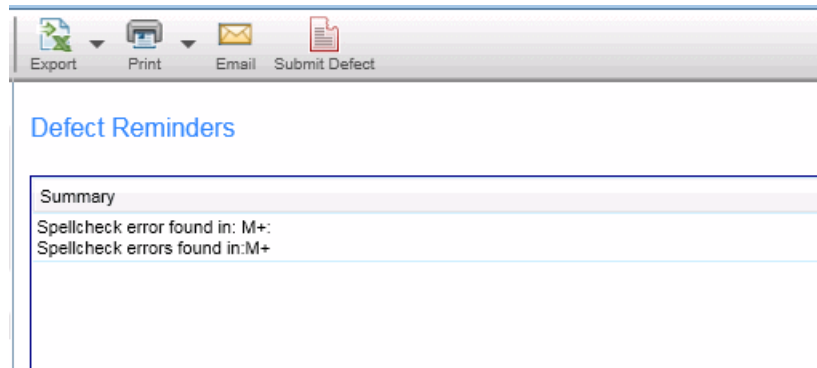
Defect Reminders Pane (Results Group)

This pane displays a summary of the defect reminders you created during your test run. It enables you to submit defects based on information in your defect reminders, and to export, print, or email your defect reminders.

Tasks you can accomplish with the Defect Reminders pane:


- "How to Review Run Results" on page 203

The following image shows the Defect Reminders pane.



To access	After running a test or component, select the Results > Defect Reminders node.
Important information	Defect reminders are discarded when you remove a run from the Run Setup area, replace a run with a new run, or close Sprinter. If the run you are closing contains defect reminders, a warning message is displayed.

The table below provides additional information for some of these elements:

UI Elements	Description
	<p>Submit Defect. Opens the Smart Defect Settings Dialog Box (described on page 189), enabling you to automatically include defect scenario information in your defect.</p> <p>When you create a defect from the defect reminders pane, the same information is available for you to include in the defect as is available when you open the defect during the run. You can include a screen capture of the application as it appeared for the user action when the reminder was created, and the steps or actions in your test run.</p> <p>When you create a defect from a defect reminder, the defect reminder is deleted.</p>

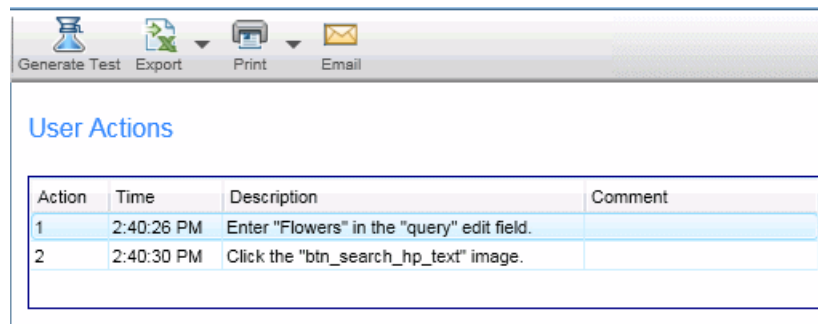
User Actions Pane/User Actions Summary Dialog Box

This area displays a summary of the user actions you performed during your run and any comments you added for each action. It also enables you to export, print, or email your user action information. This pane also allows you to export the run to a manual test.

Tasks you can accomplish with the User Actions pane/User Actions Summary dialog box:

- ▶ "How to Review Run Results" on page 203

The following image shows the User Actions pane.



To access	<p>Do one of the following:</p> <ul style="list-style-type: none"> ▶ After a test run, select the Results > User Actions node. ▶ During a run, select the Tools sidebar > Show User Actions button.
Important information	<ul style="list-style-type: none"> ▶ The User Actions Summary dialog box displays user action information during a test run. It contains most of the information and most of the functionality as the User Actions pane. ▶ User actions are recorded only in Power Mode.

User interface elements are described below:

UI Elements	Description
Generate Test	<p>Opens the Generate Test Dialog Box, which enables you to export all user actions as test steps in a new manual test. You can add test details, format and edit the steps, and save the new test to ALM. For details, see "Generate Test Dialog Box" on page 170.</p> <p>Note: This option is available only at the end of the run session.</p>
Export	<p>Enables you to export all user actions to an external spreadsheet. You can modify the data in the external file and then use the Import Steps option in the Plan mode's Steps tab.</p> <p>Drop-down options:</p> <ul style="list-style-type: none"> ➤ Export to Excel ➤ Export to CSV
Print	<p>Prints the user action list.</p> <p>Drop-down options:</p> <ul style="list-style-type: none"> ➤ Print ➤ Print Preview
Email	<p>Enables you to email the user action list as an attachment. A default mail client must be installed on the Sprinter machine.</p> <p>Note: On Windows Vista or XP, you must install The XPS Viewer in order to view the report attached to the email. This viewer is available from the Microsoft website.</p>
User Actions	<p>A list of user actions performed during the run session. The following information is available for each user action:</p> <ul style="list-style-type: none"> ➤ Action ➤ Time ➤ Description ➤ Comment

Storyboard Window

This window displays information for each user action in your run. You can:

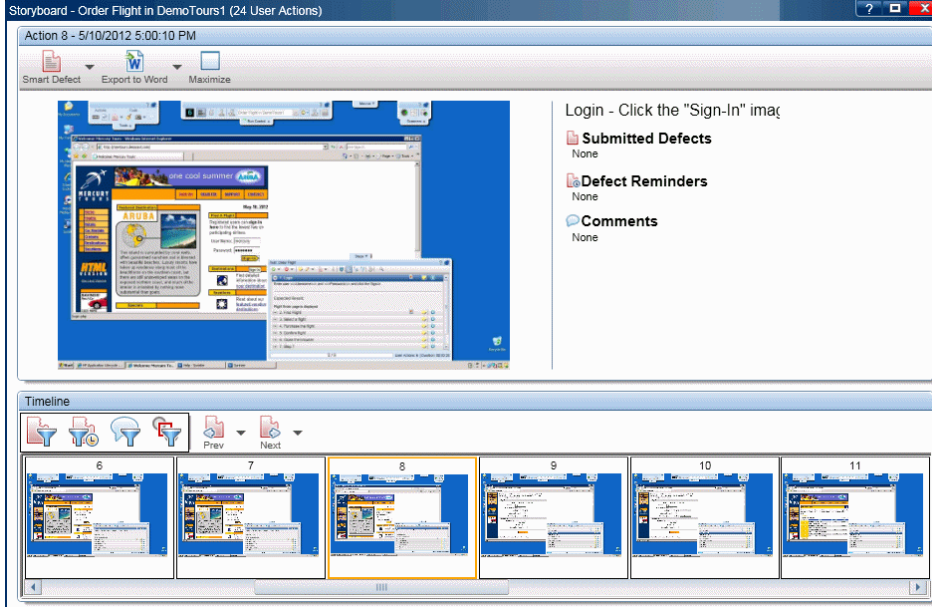
- ▶ View the description of each user action
- ▶ View the defects submitted, defect reminders, comments, and differences found for each action.
- ▶ Filter the displayed actions.
- ▶ Export the storyboard to a PDF or Microsoft Word file.

Note: You can view the Storyboard at the end of a test run in the Run Results or during a test run from the Tools Sidebar.

Tasks you can accomplish with the Storyboard:

- ▶ "How to Review Run Results" on page 203





The following image shows the Storyboard.













<p>To access</p>	<p>Do one of the following:</p> <ul style="list-style-type: none"> ▶ During a run, click Tools sidebar > Storyboard. ▶ Select the Results > Storyboard node. ▶ Right-click a test in the Test Runs list, and select Show All Runs. The Test <'Test Name'>: All Runs Dialog Box opens. Click the Storyboard button.
<p>Important information</p>	<p>Some actions may not have a corresponding screen capture. Screen captures are saved per-action based on your settings in the Run Settings Pane (Settings Dialog Box) (described on page 66).</p>

User interface elements are described below (unlabeled elements are shown in angle brackets):


UI Elements	Description
Smart Defect	<p>Enables you to submit a defect to ALM.</p> <p>Drop-down options:</p> <ul style="list-style-type: none"> ▶ Smart Defect. (Default) Opens the Smart Defect Settings Dialog Box (described on page 189), enabling you to include automatically generated defect scenario information in your defect description. For details, see "Smart Defect Settings Dialog Box" on page 189. ▶ New Defect. Opens the ALM New Defect dialog box, enabling you to manually submit a defect to ALM. <p>When you create a defect from the Storyboard, the same information is available for you to include in the defect as is available when you open the defect during the run. You can include a screen capture of your application during your user action, and a list of the steps or actions in your test run.</p>
Export to Word	<p>A drop-down menu that lets you to export the storyboard to a Word or PDF file . This file contains the run summary, step status, and defect information for the run session.</p>
Maximize/Minimize	<p>Zooms in or out of the screen capture selected in the Timeline.</p>
<Action screen capture>	<p>Displays a screen capture of the action selected in the Timeline.</p>

UI Elements	Description
<Action details>	<p>Displays the following:</p> <ul style="list-style-type: none"> ➤ A description of the user action. ➤ Defects. All the defects submitted to ALM for the action. Clicking the link for a defect opens the Defect Details dialog box from ALM. ➤ Defect Reminders. A list of all the defect reminders you created for the action. Click Create Defect to open the Smart Defect Settings Dialog Box, enabling you to automatically include defect scenario information in your defect. ➤ Comments. A list of all the comments you added to the action. ➤ Differences. A list of all the differences found for the action. Click Show, to open the Differences Viewer. The Differences Viewer displays the details of the differences and any rules you created for the action. You can also open a new defect from the Differences Viewer.
Timeline	<p>Displays a thumbnail view of each action in the run. Each thumbnail can contain any of the following icons indicating the details of the action:</p> <ul style="list-style-type: none"> ➤  A defect was submitted for this action. ➤  A defect reminder was created for this action. ➤  A comment was added to this action. ➤  Differences were found for this action.

UI Elements	Description
<Timeline filtering options>	<p>The Timeline contains the following filter buttons:</p> <ul style="list-style-type: none"> ➤  Filter Defects ➤  Filter Defect Reminders ➤  Filter Comments ➤  Filter Differences <p>When you click a filter button, the Timeline displays only those actions that contain the selected filter item. Click the filter button again to turn the filter off.</p>
<Timeline navigation buttons>	<p>The Timeline contains the following navigation buttons:</p> <ul style="list-style-type: none"> ➤  Prev. Returns the Timeline one defect back. ➤  Next. Advances the Timeline one defect forward. <p>If you filter the Timeline, the Prev and Next buttons advance or return you to the next or previous action in the filtered list of actions.</p> <p>You can also filter just the Prev and Next behavior using the drop-down options under these buttons.</p> <p>These drop-down options control the functionality of the Prev and Next buttons, but do not filter the Timeline.</p> <p>When you select a drop-down option in one button, the same option is automatically selected in the other button, and the Prev and Next buttons advance or return you to the previous or next action that contains the selected option.</p> <p>Drop-down options:</p> <ul style="list-style-type: none"> ➤  Previous/Next Defect ➤  Previous/Next Defect Reminders ➤  Previous/Next Comment ➤  Previous/Next Difference

7

Power Mode

Throughout this guide, descriptions of features that are available only in Power Mode are identified by the Power Mode  icon.

This chapter includes:

Concepts

- ▶ Power Mode Overview on page 222

Tasks

- ▶ How to Prepare a Test to Run in Power Mode on page 226

Reference

- ▶ Power Mode Group on page 229
- ▶ Application Pane (Power Mode Group) on page 231

Troubleshooting and Limitations on page 242

Concepts

Power Mode Overview

When you run a test in Power Mode, Sprinter learns your application's display and identifies its objects. This information enables Sprinter to track your activity during your test run. It also enables Sprinter to help you perform some of the user actions on your application.

With this information, Sprinter can:

- ▶ Create and run macros to allow Sprinter to perform a set of actions in your application for you.
- ▶ Automatically enter data into fields in your application.
- ▶ Replicate your user actions on multiple machines.
- ▶ Scan the application for potential defects.
- ▶ Keep a record of your user actions. Add comments and reminders to the recorded user actions in your run, for later review.
- ▶ Keep a record of the defects you submitted for each action.
- ▶ Automatically include the list of your steps or user actions in any defect you submit to create a defect scenario for you.

For Sprinter to be able to learn your application's display, you need to define the application you will be testing.

For more details, see:

- ▶ "Applications" on page 223
- ▶ "How to Prepare a Test to Run in Power Mode" on page 226

When you run a test in Power Mode, you can accomplish the following tasks:

- "How to Inject Data into your Application" on page 251
- "How to Record and Run Macros" on page 263
- "How to Run a Test with Mirroring" on page 308
- "How to Scan Your Application For Potential Defects" on page 277

For more details, see "Running Tests in Power Mode" on page 172.

Applications

To work with Power Mode features, you must define the application you will be testing. This enables Power Mode to run advanced features such as data injection and macros on your application.

Many Power Mode configurations are associated with their specific application.

Because you define application for your test, all tests have the same defined application will share the same Power Mode configuration. This saves you the time of redefining these configurations for each one of your tests.

Note: You can also define applications in Plan mode, when creating new tests or components. For details, see "Select Application Dialog Box" on page 111.

Example:

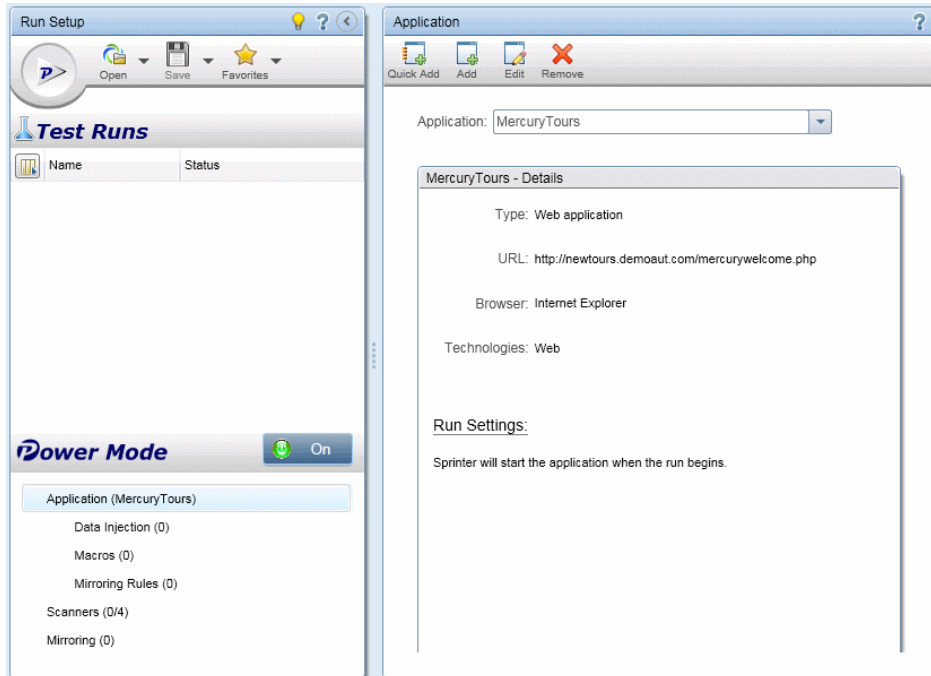
Suppose you are testing a banking application. You create a test and define your application with the name `My_Banking_App`. During your test you then record a macro on the login page and save it with the name `Login_Macro`. Sprinter remembers that the `Login_Macro` macro was recorded for the `My_Banking_App` application.

In the future, whenever you run a test with `My_Banking_App` defined as its application, the `Login_Macro` macro will be available for your test.

The following information is associated with the application in your test:

- ▶ Data injection data sets
- ▶ Macros
- ▶ Rules (for use with mirroring)

When you define an application, you provide Sprinter with a logical name for the application. Power Mode associates your information with this logical name. This logical name is displayed next to the Application node in the Power Mode Group (described on page 229), and in the Application Pane (Power Mode Group) (described on page 231).



You may want to create more than one version of an application with different logical names, and associate specific information with each version.

Example:

Suppose you are testing a banking application that has multiple versions for different languages. Each version of the actual application is named `Banking`. You can define multiple banking applications for your tests, and give each one a meaningful, logical name such as `Banking_Spanish` and `Banking_French`.

You can then associate different information with each version of the application. For example, you can associate Spanish data sets with the `Banking_Spanish` application and French data sets with the `Banking_French` application.

Whenever you run a test with `Banking_Spanish` as the defined application, the Spanish data sets will be available. Whenever you run a test with `Banking_French` as the defined application, the French data sets will be available.

For details on how to configure Power Mode features, see "How to Prepare a Test to Run in Power Mode" on page 226.

For more details on how Sprinter maintains application information and which features are associated with the defined application, see "How User Information is Maintained" on page 47.

Tasks

How to Prepare a Test to Run in Power Mode

The following steps describe how to prepare a test to run using the advanced features available with Power Mode.

- ▶ This task assumes you already understand how to run a test in Sprinter. For details, see "How to Run a Manual Test in Sprinter" on page 122.
- ▶ This task does not include information about how to prepare a test to run with mirroring. For details on running a test with mirroring, see "How to Prepare a Test for Mirroring" on page 306.
- ▶ This task does not include information about how to configure scanner settings. For details, see "How to Scan Your Application For Potential Defects" on page 277.


For details on Power Mode features, see "Running Tests in Power Mode" on page 172.

This task includes the following steps:

- ▶ "Enable Power Mode for your test" on page 227
- ▶ "Configure the application for your test" on page 227
- ▶ "Configure data injection" on page 227
- ▶ "Review the macros for your application" on page 228
- ▶ "Results" on page 228

Enable Power Mode for your test



Click the **Power Mode** button in the Power Mode group. The **Power Mode** button turns green and displays **On**, the **Run** button displays the Power Mode icon , and the Power Mode group nodes are displayed.

Configure the application for your test

You must configure an application for your test to run it with Power Mode.

Click the **Application** node in the **Power Mode** group and use the options in the Application pane to configure your application.

For details on working in the Application pane, see "Application Pane (Power Mode Group)" on page 231.

Configure data injection

1 Create a data set.

To use data injection you must first create a data set in **.xls**, **.xlsx**, or **.csv** format. For details on how to format a data set, see "Guidelines for Creating Data Injection Data Sets" on page 249.

After you create a data set you can store it in your file system or in ALM. To store data sets in ALM, upload them to the **Resources** folder for your project. For details on uploading resources, see the *HP Application Lifecycle Management User Guide*.

Note: Sprinter stores user information in the **Sprinter** folder in the **Resources** folder. It is recommended that you not modify this folder.

2 Associate the data set with your application.

After you create the data set, you associate it with your application in the **Data Injection** pane of the Tests Explorer. For details, see "Data Injection Pane (Power Mode Group)" on page 253.

Data can be automatically entered into forms only in the application that is defined in the Application Pane (Power Mode Group). For details, see "Application Pane (Power Mode Group)" on page 231.

3 Define which fields you want to inject, and in what order - Optional.

If you want to use all the fields in your data set, in the order they appear, you can skip this step.

Click the **Customize Fields** button in the **Data Injection** pane to define which field you want automatically enter in your application and in what order they should be entered. For details, see "Customize Fields Dialog Box" on page 256.

Review the macros for your application

If you have already defined macros for this application, click the Macros node to review, edit, and delete the Macros associated with your application.

For more details, see "Macros Pane (Power Mode Group)" on page 265.

Results

You are now ready to run a test in Power Mode, as described in "How to Run a Manual Test in Sprinter" on page 122.

Reference

Power Mode Group

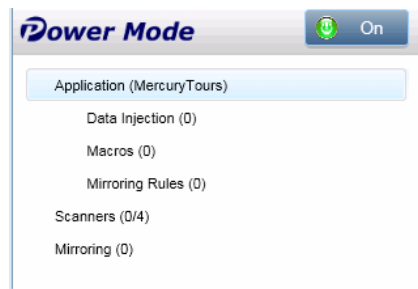
The Power Mode group enables you to turn Power Mode on and off. When you turn Power Mode on and select one of the nodes in the Power Mode group, the right pane displays the settings for that node.

For details on which features are available in Power Mode, see "Running Tests in Power Mode" on page 172.

Tasks you can accomplish with the Power Mode group:

- "How to Prepare a Test to Run in Power Mode" on page 226
- "How to Prepare a Test for Mirroring" on page 306

The following image shows the Power Mode group.



To access	In the Power Mode group, click the On button.
Important information	You must define an application for your test in order to run it in Power Mode.

The Power Mode group contains the following nodes:

UI Elements	Description
Application	<p>Defines the application you want to test.</p> <p>The application currently defined for your test is displayed in parenthesis in the Application node.</p> <p>For details, see "Application Pane (Power Mode Group)" on page 231.</p>
Data Injection	<p>Defines the data sets you want to use with the data injection feature.</p> <p>The number of data sets currently defined for use with your application is displayed in parenthesis in the Data Injection node.</p> <p>For details, see "Data Injection Pane (Power Mode Group)" on page 253.</p>
Macros	<p>Displays the macros that are associated with the currently defined application.</p> <p>The number of macros currently defined for use with your application is displayed in parenthesis in the Macros node.</p> <p>For details, see "Macros Pane (Power Mode Group)" on page 265.</p>
Mirroring Rules	<p>Displays the rules that are associated with the currently defined application.</p> <p>The number of rules currently defined for use with your application is displayed in parenthesis in the Rules node.</p> <p>For details, see "Mirroring Rules Pane (Power Mode Group)" on page 328.</p>

UI Elements	Description
Scanners	<p>Defines the settings for each scanner that you want to use during your run.</p> <p>You can scan your application for spelling errors, Web Standards errors (Web applications only), broken links, and localization errors. For details, see "Scanners Pane (Power Mode Group) / Scanner Settings Dialog Box" on page 281.</p>
Mirroring	<p>Defines the secondary machines on which you want to replicate the actions you perform during your run.</p> <p>The number of secondary machines currently defined for with your application is displayed in the parenthesis in the Mirroring node. For details, see "Mirroring Pane (Power Mode Group)" on page 317.</p>

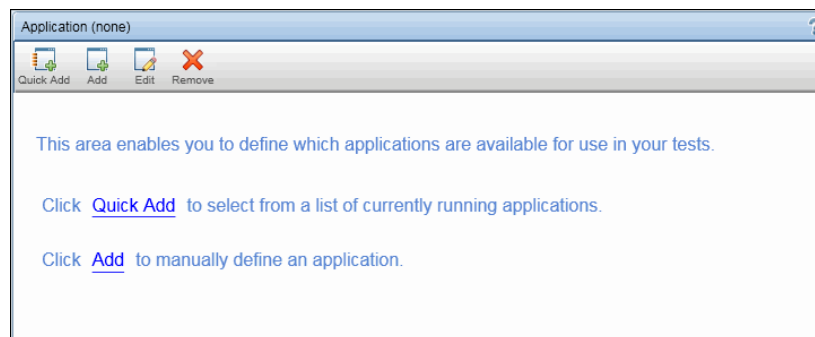
Application Pane (Power Mode Group)

This pane enables you to define or select the application that your test will use. You can also add, edit, or delete existing applications.

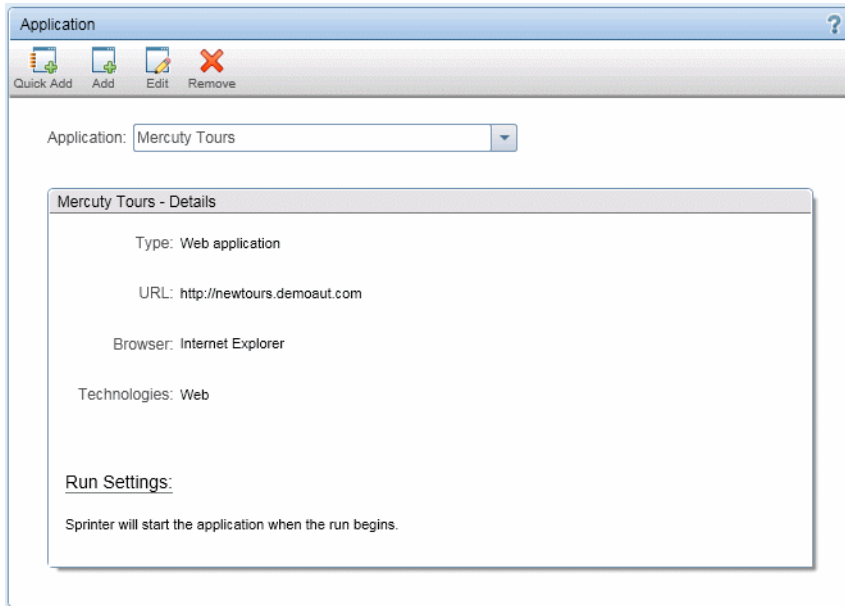
Tasks you can accomplish with the Application pane:

- "How to Prepare a Test to Run in Power Mode" on page 226

The following image shows the Application pane when there are no previously defined applications.







The following image shows the Application pane when there are previously defined applications.



To access	Select Power Mode group > Application node.
Important information	For details on how Sprinter maintains the list of applications, see "How User Information is Maintained" on page 47.
See also	"Applications" on page 223

The Application pane contains the following user interface elements:

UI Elements	Description
	<p>Opens the Quick Add Application Dialog Box (described on page 234), enabling you to add an application to your application list from a list of currently running applications.</p>
	<p>Opens the Add/Edit Application Dialog Box (described on page 237), enabling you to manually define a new application to add to your application list.</p>
	<p>Opens the Add/Edit Application Dialog Box (described on page 237), enabling you to edit the application details for the selected application in the application list.</p>
	<p>Removes the selected application from the application list.</p>
<p>Application</p>	<p>The list of available applications (when applications are defined). Use the QuickAdd, Add, Edit, and Remove buttons to manage your list of applications.</p> <p>To use a previously defined application, enter the first few characters of the name and then select it from the displayed list.</p> <p>For details on how Sprinter maintains the list of applications, see "How User Information is Maintained" on page 47.</p>
<p>Application details area</p>	<p>Displays information about the application you selected in the Application list (when applications are defined). Click the Edit button to open the Add/Edit Application Dialog BoxAdd/Edit Application Dialog Box (described on page 237) and edit these details.</p>

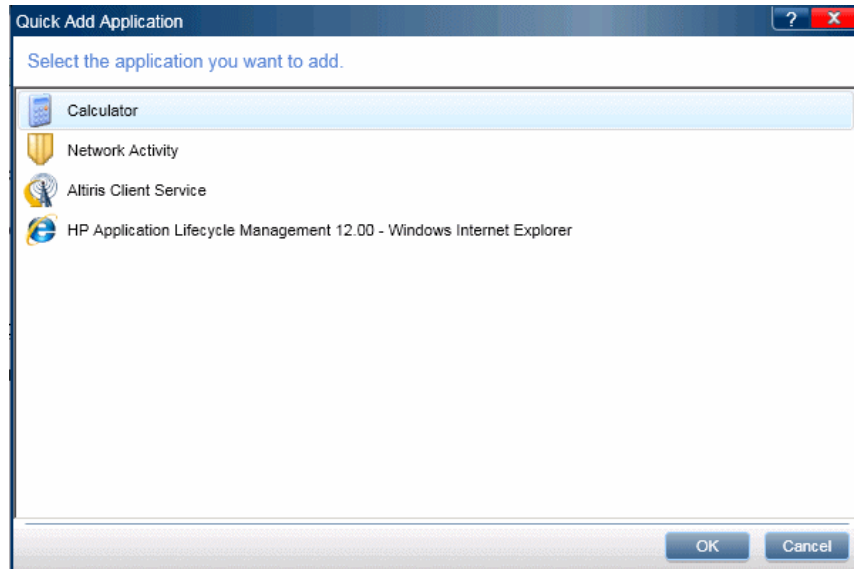
Quick Add Application Dialog Box

This dialog box enables you to add a new application to your application list by selecting it from a list of currently running applications.

Tasks you can accomplish with the Quick Add Application dialog box:

- "How to Author a Test or Component" on page 73
- "How to Prepare a Test to Run in Power Mode" on page 226

The following image shows the Quick Add Application dialog box.



<p>To access</p>	<p>In Plan mode:</p> <ul style="list-style-type: none"> ➤ Create or open a test or component. ➤ In the right pane, click the Steps tab. ➤ Expand the Steps Capture button and choose Select Application. ➤ Click the Quick Add button. <p>In Run mode:</p> <ul style="list-style-type: none"> ➤ Select Power Mode group > Application node > Quick Add button.
<p>Important information</p>	<p>Application details are entered automatically.</p> <ul style="list-style-type: none"> ➤ To change the application details, open the Add/Edit Application Dialog Box (Power Mode group > Application node. Select the application from the application list and click the Edit button.) ➤ Quick Add does not automatically enter the URL of Web applications in the URL field. You need to enter the URL information manually in the Add/Edit Application Dialog Box. <p>Quick Add automatically selects the technologies used in developing the application being tested.</p> <ul style="list-style-type: none"> ➤ You need to ensure that all the technologies that were used to develop your application are selected. ➤ Some technologies depend on other technologies to run. Some of these dependencies are automatically selected and disabled in the Technologies list. ➤ Web is selected by default for Web applications. <p>For desktop applications that use ActiveX and Web applications:</p> <ul style="list-style-type: none"> ➤ Sprinter can only work with these applications if they start when the runs begins. Sprinter is set by default to start these applications when the run begins. <p>For desktop applications that do not use ActiveX:</p> <ul style="list-style-type: none"> ➤ Sprinter can work with these applications if they were already running when the run begins. Sprinter is set by default to not run these applications when the run begins.

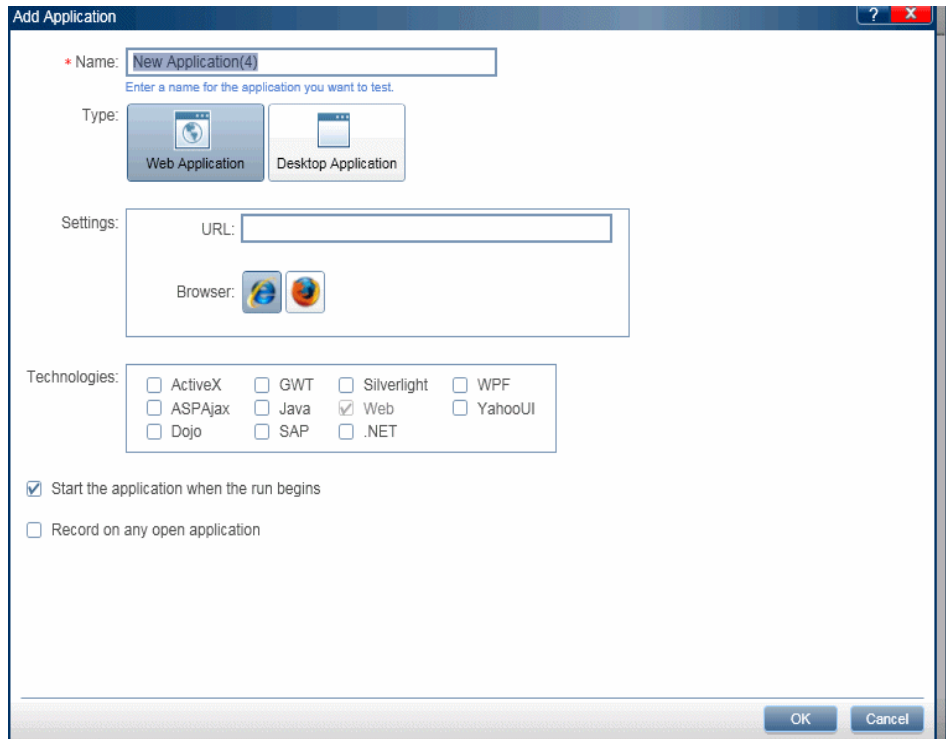
Add/Edit Application Dialog Box

This dialog box enables you to define or modify the settings for your application.

Tasks you can accomplish with the Add/Edit Application dialog box:

- "How to Author a Test or Component" on page 73
- "How to Prepare a Test to Run in Power Mode" on page 226

When you select the **Web Application** button, the **Settings** area enables you to set options specific to Web applications.





Add Application

Name:
Enter a name for the application you want to test.

Type:

Settings:

URL:

Browser:  

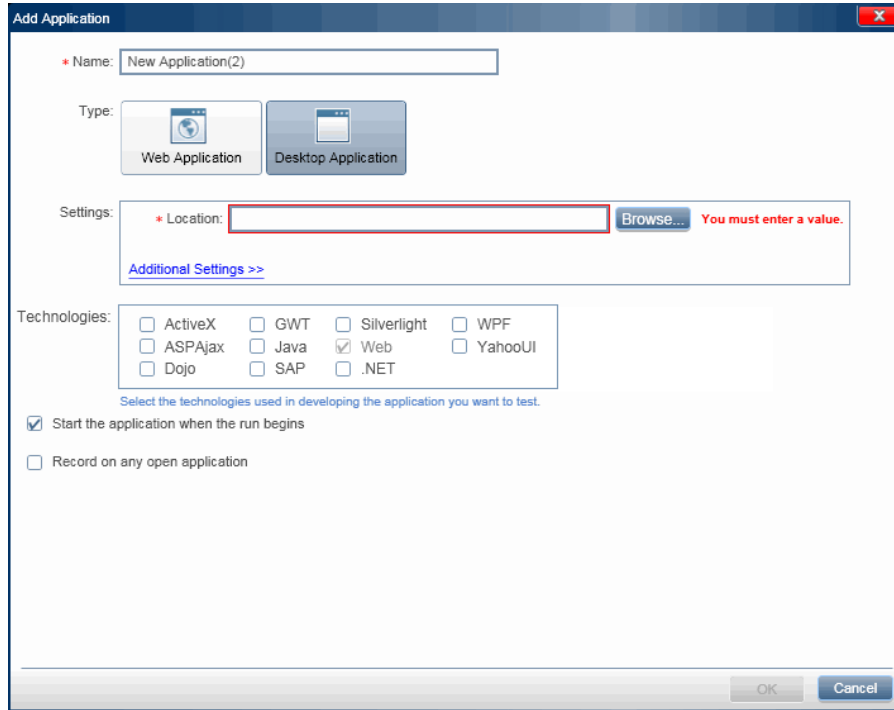
Technologies:

<input type="checkbox"/> ActiveX	<input type="checkbox"/> GWT	<input type="checkbox"/> Silverlight	<input type="checkbox"/> WPF
<input type="checkbox"/> ASPAjax	<input type="checkbox"/> Java	<input checked="" type="checkbox"/> Web	<input type="checkbox"/> YahooUI
<input type="checkbox"/> Dojo	<input type="checkbox"/> SAP	<input type="checkbox"/> .NET	

Start the application when the run begins

Record on any open application

When you select the **Desktop Application** button, the **Settings** area enables you to set options specific to desktop applications.



<p>To access</p>	<p>In Plan mode:</p> <ul style="list-style-type: none"> ➤ Create or open a test or component. ➤ In the right pane, click the Steps tab. ➤ Expand the Steps Capture button and choose Select Application. ➤ Click the Add or Edit button. <p>In Run mode:</p> <ul style="list-style-type: none"> ➤ Select Power Mode group > Application node > Add or Edit button.
<p>See also</p>	<p>"Applications" on page 223</p>

User interface elements are described below:

UI Elements	Description
Name	<p>The name of the application you want to run in your test. You can give the application any name that will help to clarify the application.</p> <p>For example, you might want to use a name that identifies the application as the foreign language version of an application, such as <i>My application - Spanish</i>.</p>
Type	<p>Web Application. Select this button if you want to define a web application.</p> <p>Desktop application. Select this button if you want to define a desktop application.</p>
Settings (when defining a Web application)	<p>URL. The URL address of the Web application you are defining.</p> <p>Browser. The browser in which you want to run the Web application. For a list of supported browser versions, see the <i>HP Sprinter Readme</i>.</p>
Settings (when defining a desktop application)	<p>Location. The path to the desktop application.</p> <p>Additional Settings:</p> <p>Parameters. Any parameters you want Sprinter to use when it starts the application.</p> <p>Working folder. The working folder for the desktop application. The working folder is used by the application to search for related files. If a working folder is not specified, the application's executable folder is used as the working folder.</p>

UI Elements	Description
Technologies	<p>The technologies used in developing the application being tested.</p> <ul style="list-style-type: none"> ▶ For Power Mode to work, you need to ensure that all the technologies that were used to develop your application are selected. Consult the application developers if you are not sure which technologies to select. <p>Some technologies depend on other technologies to run. Some of these dependencies are automatically selected and disabled in the Technologies list.</p> <ul style="list-style-type: none"> ▶ For best performance it is recommended to avoid selecting unnecessary technologies. ▶ Web is selected by default for Web applications. ▶ You can make use of Web Extensibility packages developed for QuickTest to enable Power Mode to support objects that are not supported out-of-the-box. For details, see "Using Web Extensibility Packages" on page 361. ▶ For SAP GUI for Windows troubleshooting and limitations, see "SAP GUI for Windows Applications" on page 244.

UI Elements	Description
<p>Start the application when the run begins</p>	<p>Instructs Sprinter to automatically start the application when you start your run.</p> <p>It is recommended that you configure Sprinter to start your application when the run begins or manually start your test application after you begin your run.</p> <p>For desktop applications that use Java, ActiveX, and Web applications:</p> <ul style="list-style-type: none"> ▶ Sprinter can only work with these applications if they start when the runs begins. ▶ If you do not configure Sprinter to start your application when the run begins, you need to manually start your application after you begin your run. ▶ Sprinter will work with any Java application that is started when the run begins or after the run begins. <p>For desktop applications that do not use ActiveX:</p> <ul style="list-style-type: none"> ▶ Sprinter can work with these applications that were already running before the run begins. Sprinter is set by default to not start these applications when the run begins.
<p>Record on any open application</p>	<p>Instructs Sprinter to record user actions on any open application and not only the application defined in the Add Application dialog box. This can be useful when your test involves using more than one application and you want to record the user actions for all applications.</p> <p>Selecting this option may affect performance.</p>

Troubleshooting and Limitations

This section describes troubleshooting and limitations for Power Mode.

General Limitations

- ▶ When working with Power Mode, you should not have more than one instance of the application you are testing open on any machine in your run.
- ▶ Applications that have a hidden mode may not display in the list of applications, if they were hidden when you opened the **Quick Add Application** dialog box.
- ▶ If you do not have Excel 2007 installed on your machine, you must have the 2007 Office System Driver installed, to work with data sets in the **.xlsx** format. The 2007 Office System Driver is available for download at <http://www.microsoft.com/download/en/details.aspx?displaylang=en&id=23734>.
- ▶ Application names cannot contain the following characters:
\\ / : * ? " < > | ' % ! { }

Workaround: Remove the characters from the name of the application in Sprinter to enable the test to run.

- ▶ It is recommended that when you work with Power Mode you configure Sprinter to start your application when the run begins or manually start your application after the run begins.

If your application was started before the start of the run, Sprinter may not be able to work with your application.

Web Browsers

- Sprinter does not recognize dialog boxes opened by **Mozilla Firefox**.
- To test your Web application on Firefox 8 or higher, you need to enable ALM support, in any of the following ways:
 - If the **Select Your Add-ons** screen is displayed when opening Firefox, select to keep the **QuickTest Professional Plugin**.
 - If the **Install Add-on** tab opens and displays **QuickTest Professional Plugin** when opening Firefox, select the **Allow this installation** check box and click **Continue**.
- If neither of these are available, enable the add-on manually:
 - a In Firefox, select **Tools > Add-ons**.
 - b In the **General** tab, click **Manage Add-ons** (not relevant in some versions).
 - c In the **Add-ons Manager** tab, select the **Extensions** node.
 - d Click the **Enable** button in the **QuickTest Professional Plugin** row.

Java Applications

- Before Sprinter can work with **Java** objects for the first time on the **Windows 7** or **Vista** operating systems, you need to run the **Sprinter JRE Support Tool** (JavaEnabler.jar).
 - You need to run this tool before you work with Java object for the first time, and anytime after you install a new JRE.
 - You need to run this tool on every machine in your run that works with these operating systems. The tool can be found in the **C:\<Sprinter installation folder>\bin** directory.
 - For more information, run the **Sprinter JRE Support Tool** and click the **Help** button.

Google Web Toolkit (GWT)

- In user action descriptions, Sprinter does not properly identify **GWT Richtext edit boxes** by their name.

Silverlight

- ▶ Sprinter does not support windowless **Silverlight** applications hosted in **Mozilla Firefox**.
- ▶ To work with **Silverlight**, your **Silverlight** application must be initialized with the **EnableHtmlAccess** property value set to 'True'. For details, see [http://msdn.microsoft.com/en-us/library/cc838264\(VS.95\).aspx](http://msdn.microsoft.com/en-us/library/cc838264(VS.95).aspx)

SAP GUI for Windows Applications

General Limitations

- ▶ Sprinter does not support capturing and replicating user actions performed on HTML elements embedded in SAP GUI for Windows applications.
- ▶ Microsoft Office controls within an SAP window are not supported.
- ▶ The SAP Editor control is not supported.
- ▶ The **OK** button in SAP messages for connecting to the SAP Scripting API is not captured.
- ▶ When the **Compare All** option is selected in the **Machines** sidebar during a mirroring session, Sprinter does not compare cell content in SAP Table controls.
- ▶ Sprinter captures user actions only when the SAP GUI for Windows client sends information to the SAP back-end server. When this occurs, all of the user actions that were performed between the previous communication and the current one are captured. Therefore, Sprinter captures an image of each screen that is sent to the server only after all of the user actions have been performed during that communication.
- ▶ For security reasons, the SAP scripting API prevents capturing user actions that contain passwords. When you insert a password in a password box, Sprinter captures a **Set** statement using asterisks (****) as the method argument value. For this reason, **Login** cannot be recorded as a macro and cannot be replicated when using mirroring.

- ▶ Sprinter does not capture user actions performed in standard Windows dialog boxes that are used by your SAP GUI for Windows application (such as the **Open File** and **Save As** dialog boxes). This is because the SAP scripting API does not support these dialog boxes. This may also occur when using SAP GUI for Windows with GuiXT. Therefore, you must manually perform these user actions on all machines while running macros or using mirroring.
- ▶ When opening the **Sprinter Results Viewer** from an ALM 11.00 version earlier than Quality Pack 2, user actions and differences for SAP GUI for Windows applications may not be displayed correctly.

Workaround: Open the Sprinter Results Viewer directly from Sprinter.

Installation Prerequisites

When you install your SAP GUI for Windows application, you must select the **SAP GUI Scripting** installation option. If you did not select this option when you installed the SAP GUI for Windows application, it is essential that you reinstall it and select this option before running steps on that application.

Note: SAP provides a range of security mechanisms that allow the administrator to limit the use of SAP GUI Scripting by system, by group, by user, and by scripting functionality. To test SAP GUI for Windows applications, you must ensure that these security mechanisms are not activated for the application you are testing. For details on the various security options, see the online SAP GUI Scripting Security Guide at the SAP Service Marketplace.

Enabling Scripting on the SAP Application (Server-Side)

After you confirm that you have the proper support package and kernel patch levels installed, you must enable scripting on your SAP application. By default, scripting is disabled.

You enable scripting by entering the Maintain Profile Parameters window with administrative permissions and setting the *sapgui/user_scripting* profile parameter to TRUE on the application server.

To enable scripting for all users, set this parameter on all application servers. To enable scripting for a specific group of users, set the parameter only on application servers with the appropriate access restriction settings.

Note: If you connect to a server on which scripting is disabled, an error message displays when you try to record on your SAP GUI for Windows application.

Enabling Scripting on the SAP Application (Client-Side)

To test SAP GUI for Windows applications with Sprinter, you must confirm that scripting is enabled on the SAP GUI for Windows client.

It is recommended to disable warning messages in the SAP GUI for Windows environment when working with Sprinter. When using mirroring, it is recommended to also disable warning messages on all secondary machines.

Eliminating Warning Messages

When Sprinter connects to the Scripting API, the following warning message is displayed: A script is trying to attach to the gui.

It is recommended to disable this warning message in the SAP GUI for Windows application when working with Sprinter.


Checking the Connection Speed on the SAP Server

When you log on to SAP using the **Low speed connection** option to communicate with the server, the SAP server does not send sufficient information for Sprinter to properly run steps. (Sprinter displays an error message if the **Low speed connection** option is selected.) Therefore, confirm that this option is not selected for the server to which you are connecting before running Sprinter tests.

For details, see SAP OSS note #587202.

8

Data Injection

Throughout this guide, descriptions of features that are available only in Power Mode are identified by the Power Mode  icon.

This chapter includes:

Concepts

- ▶ Data Injection Overview on page 248

Tasks

- ▶ How to Inject Data into your Application on page 251

Reference

- ▶ Data Injection Pane (Power Mode Group) on page 253
- ▶ Data Injection Sidebar on page 257

Troubleshooting and Limitations on page 259

Concepts

Data Injection Overview

During the testing process, it is often necessary to enter pre-defined data into a form in the application being tested. To make the data entry process faster and less error-prone, data injection enables you to automatically enter data contained in an **.xls**, **.xlsx**, or **.csv** file (data set) into fields in your application.

You can store data sets in your file system or in ALM. To store data sets in ALM, upload them to the **Resources** folder for your project. For details on uploading resources, see the *HP Application Lifecycle Management User Guide*.

Note: Sprinter stores user information in the **Sprinter** folder in the **Resources** folder. It is recommended that you not modify this folder.

After you create the data set, you associate it with your application in the Data Injection pane of the main window. When you associate a data set with an application, it is available for use in any test that is configured to use the currently defined application.

If you previously associated a data set with your application it is automatically available for your test.

To use data injection during your run, you select which data set you want to use, in the **Data Injection** sidebar. You then select the appropriate row of information and inject the data into your application.

Data injection maps between the column headings of your data set and the field names in your application and enters the data from that row, in the matching fields in the form.

You can define which fields in your data set you want automatically enter in your application and in what order they should be entered. For details, see "Customize Fields Dialog Box" on page 256.

For details on preparing a test to run with data injection, see "How to Prepare a Test to Run in Power Mode" on page 226.

For details on associating a data set with your application, see "Data Injection Pane (Power Mode Group)" on page 253.

For details on using data injection during a test run, see "How to Inject Data into your Application" on page 251.

Guidelines for Creating Data Injection Data Sets

To use data injection you must first create a data set in **.xls**, **.xlsx**, or **.csv** format.

- Each application field into which you want to inject data must be represented by a column in your data set. The column header should be the field name of the field in your application. Data injection matches the column headers with the field names in your application.
 - Field matching is not case-sensitive.
 - Field matching ignores leading and trailing blank spaces in column headers.
 - Field matching ignores double blank spaces in column headers.
 - If a field in your application has a very long text label, the column header needs to include at least the first 10 characters of the label for field matching to create a match.

- ▶ To use Data Injection to select a check box in your application, use the field name of the check box as the column header, and use any of the following as the data value to set the check box as selected/deselected:
 - ▶ On/Off
 - ▶ Yes/No
 - ▶ Y/N
 - ▶ 1/0
 - ▶ True/False
 - ▶ Succeed/Fail
 - ▶ Success/Failure

- ▶ To use Data Injection for drop-down boxes, use the field name of the drop-down as the column header, and the selection from the drop-down list as the data value.

- ▶ Data Injection cannot be used on radio buttons.


- ▶ If your application has a field name that is followed by multiple unlabeled fields (for example a Date field that is followed by edit boxes for Day, Month, and Year, but which are not individually labeled), Data Injection will inject data only into the first field.

- ▶ Data Injection ignores empty lines in your data set, and instead skips to the nearest row containing data.

Tasks

How to Inject Data into your Application

This task describes how to automatically enter pre-defined data into a form in your application. Entering data automatically can make the data entry process faster and less error-prone.

 Data Injection can be used only in tests run in Power Mode.

This task includes the following steps:

- ▶ "Prerequisites" on page 251
- ▶ "Define which fields you want to inject, and in what order - Optional" on page 251
- ▶ "Inject the data into your application during your run" on page 252

1 Prerequisites

- ▶ To use data injection, you must first configure data injection for your application. For details, see the step on configuring data injection in "How to Prepare a Test to Run in Power Mode" on page 226.
- ▶ To use data injection, you must have only one instance of your application open.



2 Define which fields you want to inject, and in what order - Optional

If you want to use all the fields in your data set, in the order by which they appear, you can skip this step.



To define which fields to automatically enter in your application and the order by which they should be entered, click the **Customize Fields** button in the Data Injection Sidebar . For details, see "Customize Fields Dialog Box" on page 256.

3 Inject the data into your application during your run

- a** In the **Data Injection** Sidebar select the data set you want to use from the list of data sets.
-  **b** Click the **Display Field Mapping** button to verify the field mapping between your data set and the fields in your application .
-  **c** Select the row of data you want to inject and click the **Inject Data** button.
- d** The **Data Injection** sidebar displays an icon in its tab indicating the success or failure of the injection. If the data injection fails, a popup box opens with more details.

For more details, see "Data Injection Sidebar" on page 257.

Reference

Data Injection Pane (Power Mode Group)

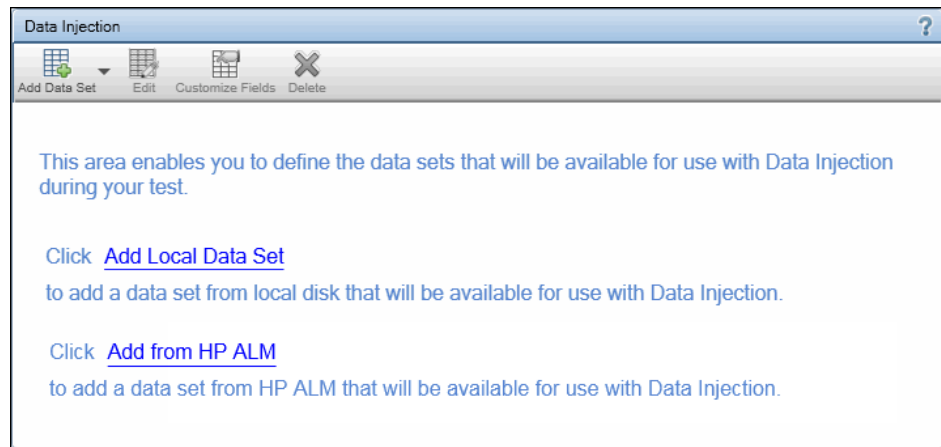
This tab enables you to define which data sets will to be available to use with the Data Injection feature during a test run.

You can also delete data sets and define which fields from your data set will be injected, and in which order.

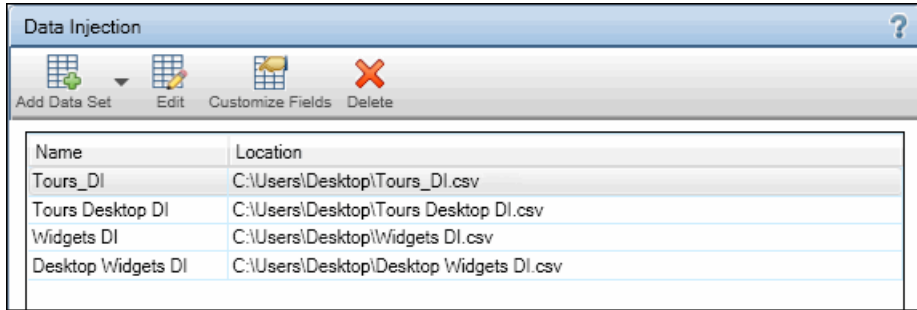
Tasks you can accomplish with the Data Injection pane:

- ▶ "How to Prepare a Test to Run in Power Mode" on page 226

The following image shows the Data Injection pane when there are no defined data sets.







The following image shows the Data Injection pane with defined data sets.



To access	Select Power Mode group > Data Injection node.
Important information	<ul style="list-style-type: none"> ▶ Data sets can be .xls, .xlsx, or .csv files. ▶ For details on how Sprinter maintains the list of data sets, see "How User Information is Maintained" on page 47.
See also	"Data Injection Overview" on page 248

User interface elements are described below:

UI Elements	Description
	Drop-down options: <ul style="list-style-type: none"> ▶ Add Local Data Set. Opens the Data Set Details Dialog Box (described on page 255), enabling you to define a new data set for your application from your file system. ▶ Add from HP ALM. Opens the Data Set Details Dialog Box (described on page 255), enabling you to define a new data set for your application from your ALM Resources folder.
	Opens the Data Set Details Dialog Box (described on page 255), enabling you to edit the data set information for your application.

UI Elements	Description
	Opens the Customize Fields Dialog Box (described on page 256), enabling you to define which fields from your data will be injected, and in which order.
	Removes the selected data set from your application.

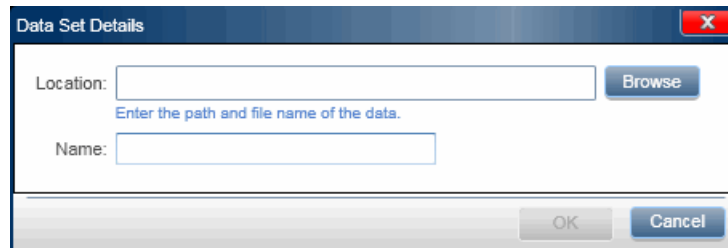
Data Set Details Dialog Box

This dialog box enables you to define a data set for your application, to be used with the Data Injection feature during a test run.

Tasks you can accomplish with the Data Details dialog box:

- "How to Prepare a Test to Run in Power Mode" on page 226

The following image shows the Data Details dialog box.



To access	Do one of the following: <ul style="list-style-type: none"> ► Select Power Mode group > Data Injection node > Add button. ► Select Power Mode group > Data Injection node. Select from the list of defined data sets and click the Edit button.
Important information	<ul style="list-style-type: none"> ► Data sets can be .xls, .xlsx, or .csv files. ► Data sets cannot be edited from within Sprinter.
See also	"Data Injection Overview" on page 248

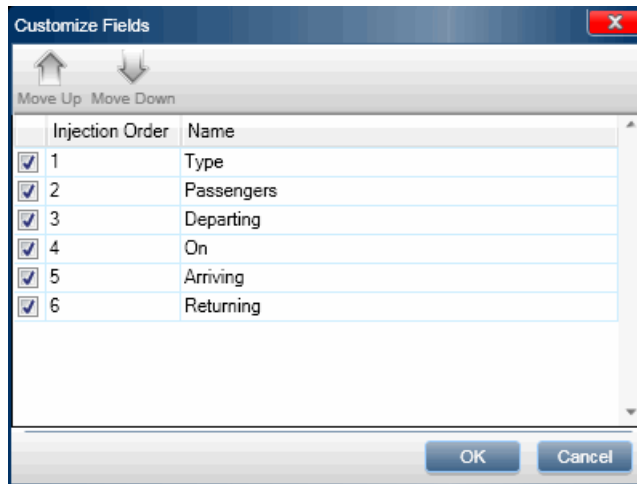
Customize Fields Dialog Box

This dialog box enables you to define which fields from your data set will be injected, and in which order.

Tasks you can accomplish with the Customize Fields dialog box:



- ▶ "How to Prepare a Test to Run in Power Mode" on page 226
- ▶ "How to Inject Data into your Application" on page 251

The following image shows the Customize Fields dialog box.



To access	<p>Do one of the following:</p> <ul style="list-style-type: none"> ▶ Select Power Mode group > Data Injection node > Customize Fields button. ▶ During a run select Data Injection sidebar > Customize Fields button.
See also	"Data Injection Overview" on page 248

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Elements	Description
	Moves the selected field up one level in the order of injected fields.
	Moves the selected field down one level in the order of injected fields.
<Enable check box>	Select or deselect the check box to enable or disable the field.
Injection Order	The order in which the data will be injected in your application. Use the Move Up and Move Down buttons to modify the order.
Name	The name of the field as it appears in the column header of the data set.

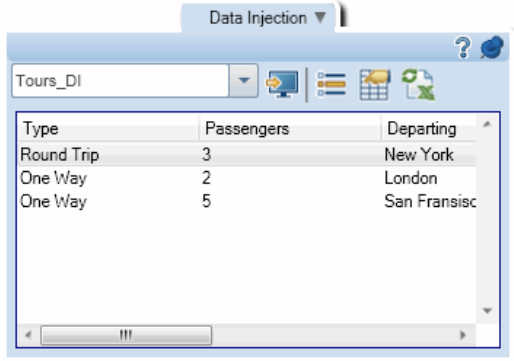
Data Injection Sidebar



This sidebar enables you to automatically enter data into forms in desktop applications or Web pages.

Tasks you can accomplish with the **Data Injection** sidebar:


- "How to Inject Data into your Application" on page 251
- "How to Run a Manual Test in Sprinter" on page 122







The following image shows the **Data Injection** sidebar.



<p>To access</p>	<p>Do the following:</p> <ol style="list-style-type: none"> 1 Enter Run mode and open a test or component. 2 Turn on Power mode. 3 In the Power Mode group, click the Data Injection node. 4 In the Data Injection pane, add at least one data set. 5 Click the Power Mode Run  button. <p>Tip: To lock the sidebar in the open position, click the thumbtack  icon. To reposition the sidebar, click and drag on the sidebar header.</p>
<p>Important information</p>	<p>If your application does not have any associated data sets, the Data Injection sidebar is not displayed.</p>
<p>See also</p>	<p>"Data Injection Overview" on page 248</p>

User interface elements are described below (unlabeled elements are shown in angle brackets>):

UI Elements	Description
<p><Data set list></p>	<p>A drop-down list of the data sets associated with your application.</p>
<p></p>	<p>Inject Data. Injects the data from the selected row of the data table into the fields in your application.</p>

UI Elements	Description
	<p>Display Field Mapping. Highlights and labels the fields in the application that match the column headings in the data set. The column headings in the data set are displayed in the highlighted fields in the application. Click again to turn off the highlighting. For more details, see "Data Injection Overview" on page 248.</p>
	<p>Customize Fields. Opens the Customize Fields Dialog Box, enabling you to define which fields from your data will be injected, and in which order. For details, see "Customize Fields Dialog Box" on page 256.</p>
	<p>Refresh Data. Reloads the data from the data set into the Data Injection sidebar.</p>
<p><Data injection status></p>	<p>The Data Injection sidebar displays an icon in its tab indicating the success , partial success , or failure  of data that was most recently injected. Click the icon for more details.</p>


Troubleshooting and Limitations

This section describes troubleshooting and limitations for data injection.

- ▶ Data injection may not work with all technologies.
- ▶ If data injection cannot identify the matching field in the application, the data will not be injected.
- ▶ In the grid within the Data Injection sidebar, the following characters are not displayed if they appear in the column headers of a data set: [] { } / \ , (). This affects the display only—data injection will still identify the matching field.

9

Macros

Throughout this guide, descriptions of features that are available only in Power Mode are identified by the Power Mode  icon.

This chapter includes:

Concepts

- ▶ Macros Overview on page 262

Tasks

- ▶ How to Record and Run Macros on page 263

Reference

- ▶ Macros Pane (Power Mode Group) on page 265
- ▶ Macros Sidebar on page 266

Troubleshooting and Limitations on page 271

Concepts

Macros Overview

During the testing process, you may have parts of your test that require performing a series of user actions that you want Sprinter to perform for you. You may also have parts of your test that involve performing the same set of actions in multiple areas of your application. Having Sprinter perform the set of actions can save testing time and reduce errors.

A macro is a series of actions that you can save and run as a single command.

Sprinter can perform these actions for you when you create and run macros.

For example, you may want to use macros to:


- ▶ Automate a login procedure.
- ▶ Perform a series of introductory steps to set up your application for testing.

Sprinter only saves a macro if it contains at least one user action. Your user actions are only recorded after they are completed. For edit boxes and combo boxes, the action is not complete, and will not be recorded until you move the focus off the box.

Tasks

How to Record and Run Macros

This task describes how to use macros to have Sprinter perform a series of user actions in your test and run them as a single command.

 Macros can be used only in tests run in Power Mode.

This task includes the following steps:

- "Activate Power Mode" on page 263
- "Record a macro" on page 263
- "Run a macro" on page 264

1 Activate Power Mode



In Run mode, make sure you have a test open and that Power Mode is active. Click the Power Mode Run button. For details, see the relevant steps in "How to Prepare a Test to Run in Power Mode" on page 226.

2 Record a macro

If your application already has a macro associated with it that you want to run, you can skip this step.



a In the **Macros** sidebar click the **Record** button

b Perform the actions you want to include in your macro.



c In the **Macros** sidebar, click the **Stop** button. The Macro Details Dialog Box opens.

d Set the definitions for your macro and save it. For details, see "Macro Details Dialog Box" on page 268.

For more details, see "Macros Sidebar" on page 266.

3 Run a macro

a In the **Macros** sidebar select the macro you want to run from the macros drop-down list.



b In the **Macros** sidebar click the **Run** button.

c The **Macros** sidebar displays an icon in its tab indicating the progress and success or failure of the macro. Click the icon for more details.

For more details, see "Macros Sidebar" on page 266.

For more details on using macros in your test, see "Macros Overview" on page 262.

Reference

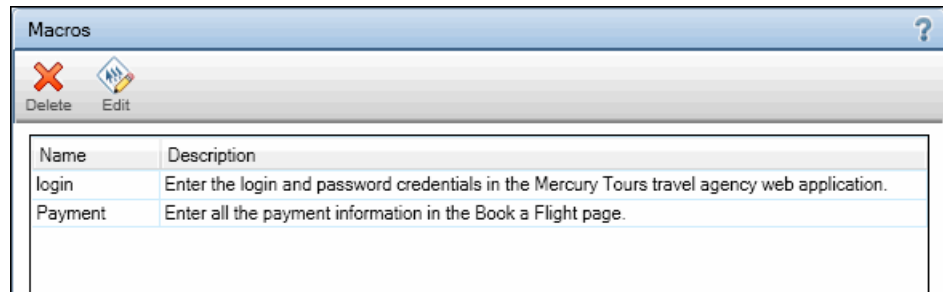
Macros Pane (Power Mode Group)

This pane displays the macros that are associated with the currently defined application.

Tasks you can accomplish with the Macros pane:

- "How to Prepare a Test to Run in Power Mode" on page 226

The following image shows the Macros pane.



To access	Select Power Mode group > Macros node.
Important information	You can edit only the macro Name and Description.
See also	"Macros Overview" on page 262

Descriptions of the user interface elements are available in the pane when you hover over them.

Macros Sidebar


This sidebar enables you to record and run macros during your test run.

Tasks you can accomplish with the **Macros** sidebar:




- ▶ "How to Record and Run Macros" on page 263
- ▶ "How to Run a Manual Test in Sprinter" on page 122


The following image shows the **Macros** sidebar.



To access	<p>During a test run, click the Macros sidebar tab.</p> <ul style="list-style-type: none"> ▶ Click the sidebar tab again, or click off the sidebar tab, to close the sidebar. ▶ To lock the sidebar in the open position, click the thumbtack  icon. ▶ To reposition the sidebar, click and drag on the sidebar header.
See also	"Macros Overview" on page 262

User interface elements are described below (unlabeled elements are shown in angle brackets>):

UI Elements	Description
 	<p>Record/Stop. Starts and stops recording user actions you perform in your application. When you stop recording, the Macro Details Dialog Box opens, enabling you to name and save your macro. For details, see "Macro Details Dialog Box" on page 268.</p>
	<p>Run. Runs the selected macro from the macros drop-down list.</p>

UI Elements	Description
	Manage. Opens the Manage Macros Dialog Box. For details, see "Manage Macros Dialog Box" on page 270.
<Macros drop-down list>	The list of macros you can run in this test. Sprinter associates macros with the application for which they were created.
<Macro status>	The Macros sidebar displays an icon in its tab indicating the progress of the macro and the success or failure of a macro that was run. Click the icon for more details.

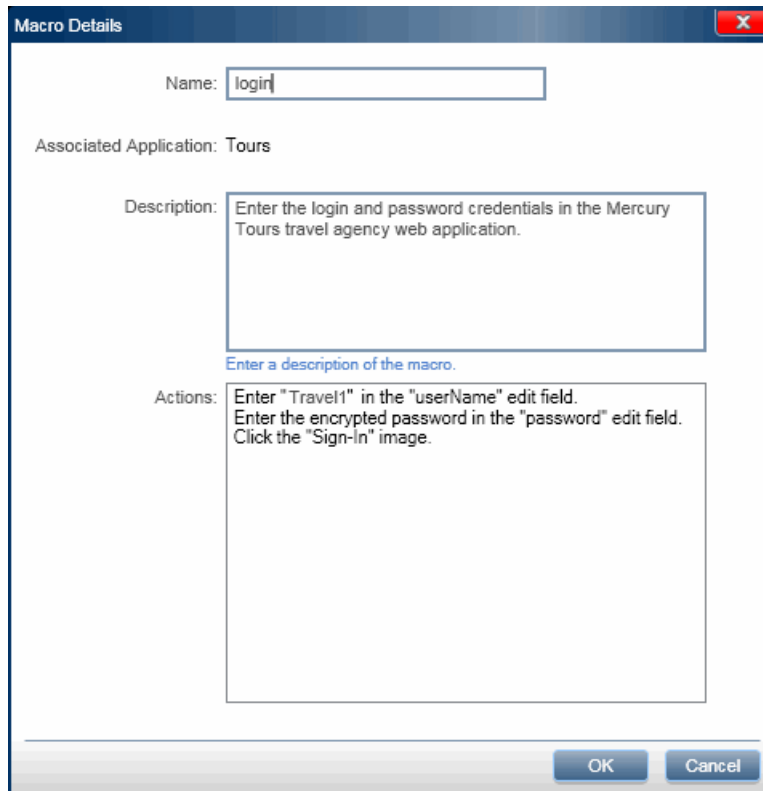
Macro Details Dialog Box



This dialog box enables you to name your macro and view and edit its details.

Tasks you can accomplish with the Macro Details dialog box:

- ▶ "How to Record and Run Macros" on page 263
- ▶ "How to Run a Manual Test in Sprinter" on page 122

The following image shows the Macro Details dialog box.



To access	<p>Do one of the following:</p> <ul style="list-style-type: none"> ▶ After recording a new macro click the Macros sidebar > Stop button . ▶ In the Macros sidebar click the Manage Macros button . Select a macro in the Macros pane and click the Edit button. ▶ In the Power Mode Group in the main window select the Macros node. Select a macro in the Macros pane and click the Edit button.
See also	"Macros Overview" on page 262

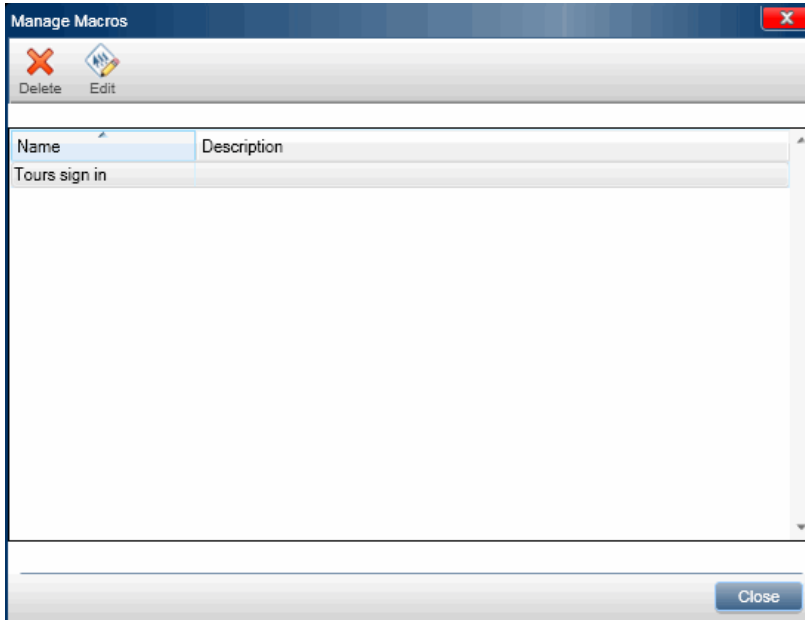
Descriptions of the user interface elements are available in the dialog box when you hover over them. The table below provides additional information for some of these elements:


UI Elements	Description
Associated application	<p>The application for which this macro is available.</p> <p>The associated application is the application that was defined for the test in which the macro was recorded.</p>
Steps	<p>A list of the steps that were recorded in the macro. Each user action in the application is recorded as a step in the macro.</p>

Manage Macros Dialog Box

This dialog box enables you to delete and modify the details of your macros.

The following image shows the Manage Macros dialog box.



To access	Click the Macros sidebar > Manage Macros button  .
See also	"Macros Overview" on page 262

Descriptions of the user interface elements are available in the dialog box when you hover over them. The table below provides additional information for some of these elements:

UI Elements	Description
Macros List	<p>The list of macros that are associated with your application.</p> <ul style="list-style-type: none"> ▶ To edit a macro, select it from this list and click the Edit button. The Macro Details Dialog Box opens enabling you to edit the macro. ▶ To delete a macro, select it from this list and click the Delete button.

Troubleshooting and Limitations


This section describes troubleshooting and limitations for macros.

- ▶ Macros may not work with all technologies.
- ▶ User actions on an edit box are recorded only after you move the focus off the edit box.

For example, if you click the Record button, enter text in an edit box, and then click the Stop button, your action is not recorded in your macro. You need to perform an action on another object in your application for your action on the text box to be recorded.

10

Scanners

Throughout this guide, descriptions of features that are available only in Power Mode are identified by the Power Mode  icon.

This chapter includes:

Concepts

- ▶ Scanners Overview on page 274

Tasks

- ▶ How to Scan Your Application For Potential Defects on page 277
- ▶ How to Add or Remove Words From a Dictionary on page 278
- ▶ How to Create a Custom Scanner on page 280

Reference

- ▶ Scanners Pane (Power Mode Group) / Scanner Settings Dialog Box on page 281
- ▶ Scanners Sidebar on page 286
- ▶ Scan Results Viewer on page 290

Troubleshooting and Limitations - Scanners on page 292

Concepts

Scanners Overview

During the testing process, you may want to check that different aspects of your application behave or display correctly. Sprinter's scanners enable you to check whether strings in your application are spelled correctly, whether the application conforms to Web Standards (Web applications only), if there are broken links, or whether the user interface of your application is translated correctly.

You can select which scanners to use both prior to the run session and during the run session. After each scan is completed, the scan results are displayed in the Scan Results Viewer. In the Scan Results Viewer you can perform several actions, such as creating smart defects and defect reminders.

For task details, see "How to Scan Your Application For Potential Defects" on page 277.

For user interface details, see "Scanners Pane (Power Mode Group) / Scanner Settings Dialog Box" on page 281.

Sprinter includes the following scanners:

Broken Links Scanner

This scanner, relevant only for Web applications, checks your application for broken hyperlinks and missing referenced content. You can set the threshold time—the time in seconds after which the link will be considered broken.

Localization Scanner

This scanner checks your application for errors resulting from translating the application's user interface into different languages. You can scan for the following issues:

- ▶ **Incomplete strings.** Suppose that after translating the user interface strings in your application, the main title of the page is too long to be displayed within the title bar. When this option is selected, the Localization scanner identifies the string as incomplete. Make sure to set the **target** language, as the scanner performs a check against this language during the scan.
- ▶ **Untranslated strings.** Suppose that after translating the user interface strings of your application you want to verify that all of the strings were translated from the source language to the target language. When this option is selected, the Localization scanner compares any string that is not spelled correctly with both the target dictionary and the source dictionary. If the string is found in the source dictionary, the scanner identifies the string as untranslated.

Spellcheck Scanner

This scanner checks your application for spelling errors. You can define up to two dictionaries for the scanner to use. This enable you to check spelling for applications that contain strings in more than one language.

Web Standards Scanner

This scanner checks that the Web page complies with Web standards for HTML validity, as defined by the World Wide Web Consortium (W3C). The scanner detects and reports any Web standards errors that are found in the Web page during the run session.

The Web Standards scanner is available only if you select a Web application in the Application Pane (Power Mode Group) (described on page 231).

Custom Scanner

Sprinter allows you to extend the scanner's capabilities by defining custom scanners. This allows you to design a scanner that will detect the desired items in your application.


You can use a sample scanner provided with Sprinter as a starting point for designing your own custom scanner.

For details, see "How to Create a Custom Scanner" on page 280.

Tasks

How to Scan Your Application For Potential Defects

This task describes how to configure, run, and analyze scans for your application during a run session.

 Scanners can be used only in tests run in Power Mode.

This task includes the following steps:

- "Prerequisites" on page 277
- "Configure scanner settings" on page 277
- "Scan your application during a run session" on page 278
- "Analyze scan results" on page 278

Prerequisites

To use scanners you must first enable Power Mode and configure an application for your test. For details, see the relevant steps in "How to Prepare a Test to Run in Power Mode" on page 226.

Configure scanner settings

- **Before the run session begins.** Use the **Scanners** pane (Power Mode group) to turn on the relevant scanners. For details, see "Scanners Pane (Power Mode Group) / Scanner Settings Dialog Box" on page 281.
- **During the run session.** In the Scanners sidebar, click the **Scanner Settings** button. The Scanner Settings dialog opens. This dialog box contains all of the available settings that the **Scanners** pane (Power Mode group) contains. For details, see "Scanners Sidebar" on page 286 and "Scanners Pane (Power Mode Group) / Scanner Settings Dialog Box" on page 281.



Scan your application during a run session



In the Scanners sidebar, click the **Start Scan** button. The progress window opens, displaying the status of each scanner. For details, see "Scanners Sidebar" on page 286 and "Scan Progress Window" on page 287.

Analyze scan results

After the scan ends, click **Continue** in the Scan Progress window, to open the Scan Results Viewer. Handle the results for each scanner by creating a defect or a defect reminder, or performing a custom action. For example, for Spellcheck scan results, add the word to a dictionary. For details, see "Scan Results Viewer" on page 290.



Tip: If you closed the Scan Results Viewer, click the **Last Scan Results** button in the **Scanners** sidebar to display the results of the last scan.

How to Add or Remove Words From a Dictionary

This section explains how to modify a dictionary for the Spellcheck scanner. For details, see "Spellcheck Scanner" on page 276.

In normal use, if your scanner detects a spelling error, you can choose to add the word to the scanner directly from the Scan Results user interface using the **Add to** button. For details, see "Scan Results Viewer" on page 290.

When modifying a dictionary, you need to modify it on ALM and on the local copy stored on the file system.

This section describes how to manually add entries to the dictionary, and how to remove existing entries.

The dictionaries used are based on the OpenOffice **Hunspell** dictionaries. For details, see <http://wiki.services.openoffice.org/wiki/Dictionaries>.

1 Download the dictionary file from ALM

- a** Log into ALM with administrator privileges.
- b** Open the **Test Resources** module.
- c** Select **Resources > Sprinter > <your_user_name>/SpellChecker**.
- d** Click the **Resource Viewer** tab.
- e** Click **Download** to download the dictionary file in XML format and save it on the file system.

2 Edit the file

- a** Open the saved file in a text or XML editor.
- b** Locate the Elements list for your language.

```
<Key>English</Key>
  <Value objectID="5" type="System.Collections.Generic.List`1[[System.String,
mscorlib, Version=4.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089]],
mscorlib">
  <Elements isCollection="True">
    <String>Sprinter</String>
    <String>Facebook</String>
    <String>NewWord</String>
  </Elements>
</Value>
```

- c** To add a word, add an entry for each word in the following format:
<String>New_Word</String>.
- d** To remove a word, delete the entire line with the word.
- e** Save the file.

3 Upload the dictionary file to ALM


In ALM's **Test Resources** module, in the **Resource View** tab, click **Upload File** to upload the file to ALM.

4 Modify the local copy

In the file system, open `%appdata%\HP\Sprinter\SpellChecker.xml` in a text editor and add or remove the same word from the XML file.

How to Create a Custom Scanner

This task describes how to create a custom scanner for your application.

 Scanners can be used only in tests run in Power Mode.

This task includes the following steps:

- "Open the sample scanner" on page 280
- "Implement the interface" on page 280
- "Save the custom scanner" on page 281
- "Configure scanner settings" on page 281

1 Open the sample scanner

Select **Start > All Programs > HP Sprinter > Extensibility > Broken Links Scanner Code Sample** to open the sample in Visual Studio 2010.

Alternatively, open the sample scanner project located in `<Installation_Directory>\Sample\Scanners\BrokenLinks\HP.Sprinter.DemoScanners.BrokenLinks.csproj`.

2 Implement the interface

Make sure to implement the **IScanner** interface located in the `<Installation_Directory>\bin\HP.Sprinter.Scanners.API.dll`.

If you are using additional external dependencies, note that the custom scanner's working folder during run time is `<Installation_Directory>\bin`

3 Save the custom scanner

Save custom scanner assemblies in the `<Installation_Directory>\bin\CustomScanners` folder in order to allow it to load when you invoke Sprinter.

4 Configure scanner settings

Restart Sprinter and activate Power Mode. Activate and define the custom scanner settings as necessary.

For complete information about the Scanners API provided with Sprinter, select **Programs > HP Sprinter > Extensibility > Sprinter Scanners API Reference** to open the online reference.

Reference

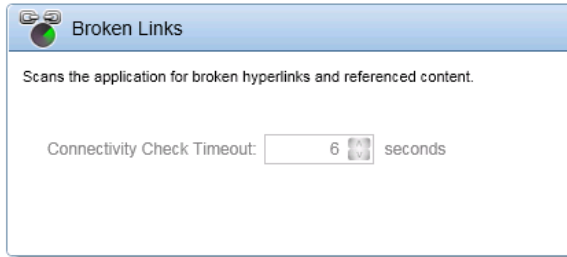
Scanners Pane (Power Mode Group) / Scanner Settings Dialog Box

The Scanners pane and the Scanner Settings dialog box enable you to select which scanners to use during a run session. You can also configure settings for each scanner.

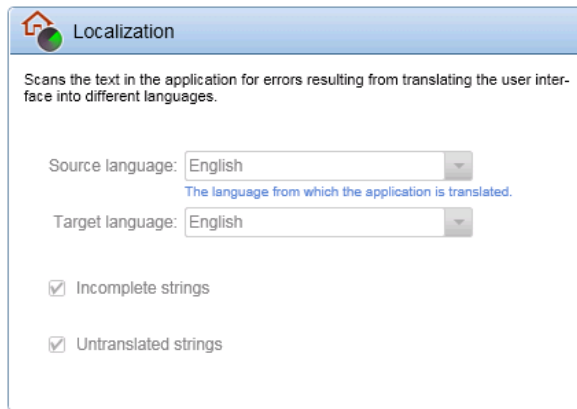
Tasks you can accomplish with the Scanners pane:

- ▶ "How to Scan Your Application For Potential Defects" on page 277

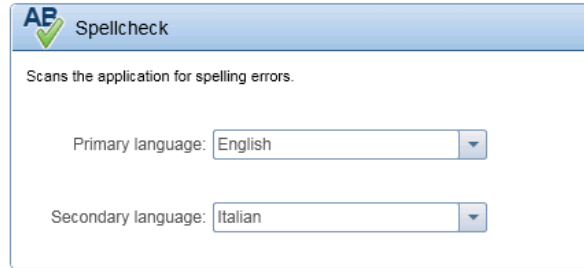
The following image shows the Broken Links scanner.



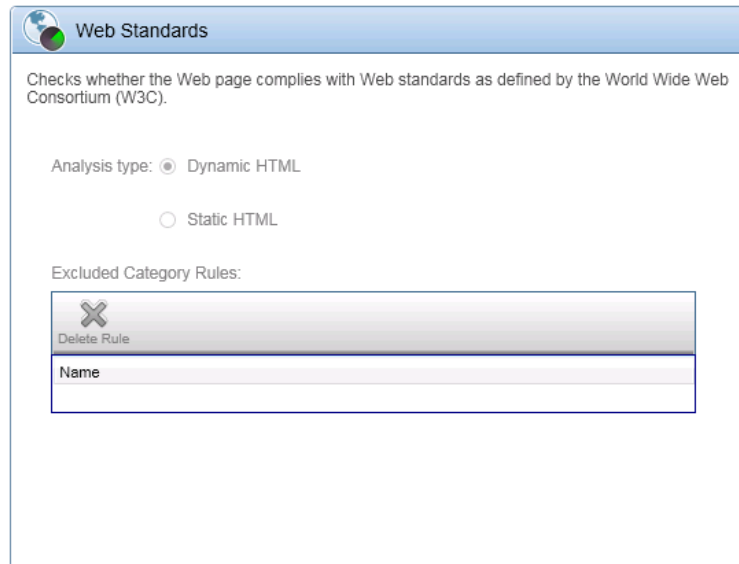
The following image shows the Localization scanner.



The following image shows the Spellcheck scanner.



The following image shows the Web Standards scanner.



To access	<ul style="list-style-type: none"> ▶ Scanners pane. In the Power Mode group, select Scanners. ▶ Scanner Settings dialog box. During a run session, click the Scanners sidebar tab and click the Scanner Settings button.
Important information	<ul style="list-style-type: none"> ▶ The options in the Scanners pane and the Scanner Settings dialog box are identical. ▶ The Broken Links and Web Standards scanners are only available if you select a Web application in the Application Pane (Power Mode Group) (described on page 231). ▶ You must be connected to the internet before performing a Web Standards scan. ▶ For the Localization scanner: Set the Target language to match the currently visible user interface. Set the Source language to the original user interface language. If you select other languages, the scanner may provide false results.

User interface elements for all scanners are described below:

Broken Links Scanner

UI Elements	Description
Connectivity Check Timeout	The threshold in seconds after which a link will be considered broken.

Localization Scanner

UI Elements	Description
Source Language	The language from which the application is translated.
Target Language	The language to which the application is translated.
Incomplete strings	Scans for strings that do not fit within a specific area in the application.
Untranslated string	Scans for string that are not translated from the source language to the target language.

Spellcheck Scanner

UI Elements	Description
Main language	The main language in which the user interface strings of the application are displayed. This determines which dictionary to use when scanning the application for spelling errors. Default: English
Additional language	(Optional) An additional language or locale used in the application.

To add words to the main and additional dictionaries use the Scan Results Viewer. For details see "Scan Results Viewer" on page 290.

For details about custom dictionaries, see "How to Add or Remove Words From a Dictionary" on page 278.

Web Standards Scanner

UI Elements	Description
Analysis type	The type of analysis to perform on the Web page: <ul style="list-style-type: none"> ▶ Dynamic HTML. Scan the document's dynamic HTML content. ▶ Static HTML. Scan the document's static HTML content.
Excluded Category Rules	The list of rules that instruct the Web Standards scanner to ignore specific result categories. You can delete rules from this list, but you can add rules only from the Scan Results Viewer.
Delete Rule	Deletes the selected results category rule from the list.

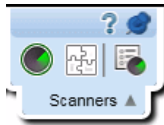
Scanners Sidebar



This sidebar enables you to scan your application, configure scanner settings, and view scan results.

Tasks you can accomplish with the **Scanners** sidebar:




- "How to Scan Your Application For Potential Defects" on page 277
- "How to Run a Manual Test in Sprinter" on page 122

The following image shows the **Scanners** sidebar.



<p>To access</p>	<p>Do the following:</p> <ol style="list-style-type: none"> 1 Enter Run mode and open a test or component. 2 Turn on Power mode. 3 In the Power Mode group, click the Scanners node. 4 In the Scanners pane, turn on at least one scanner. 5 Click the Power Mode Run  button. <p>Tip: To lock the sidebar in the open position, click the thumbtack  icon. To reposition the sidebar, click and drag on the sidebar header.</p>
<p>Important information</p>	<p>If you do not turn on any scanners prior to the run session, the Scanners sidebar is not displayed. To display the sidebar, stop the run and turn on at least one scanner.</p>
<p>See also</p>	<p>"Scanners Overview" on page 274</p>

User interface elements are described below (unlabeled elements are shown in angle brackets>):

UI Elements	Description
	Start Scan. Instructs all enabled scanners to scan the currently active screen/page/area of the application. You can monitor the scan progress in the Scan Progress Window (described on page 287).
	Last Scan Results. Opens the Scan Results Viewer, which enables you to view the results from the last performed scan. If no scan was performed during the run session, this option is disabled. For details, see "Scan Results Viewer" on page 290. Note: The Scan Results Viewer displays results only for the last performed scan.
	Scanner Settings. Opens the Scanner Settings dialog box, which enables you to turn individual scanners on or off. It also enables you to define settings for each scanner. The options in this dialog box are identical to the options in the Scanners pane. For details, see "Scanners Pane (Power Mode Group) / Scanner Settings Dialog Box" on page 281.

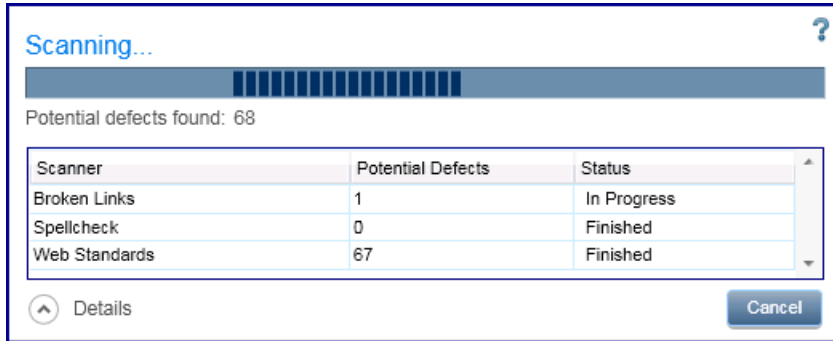
Scan Progress Window


This window enables you to monitor the status of each selected scanner during the scan. It also displays the number of potential defects found by each scanner.

Tasks you can accomplish with the **Scan Progress** window:

- "How to Scan Your Application For Potential Defects" on page 277
- "How to Run a Manual Test in Sprinter" on page 122

The following image shows the **Scan Progress** window.



To access	During a run session, click the Start Scan button  on the Scanners Sidebar tab (described on page 286).
Important information	<ul style="list-style-type: none"> ▶ By default, only summary information is displayed. You can expand the window to view detailed information about each scanner. ▶ If all scans run successfully and results are found, this window closes after the scan is completed, and the Scan Results Viewer opens. For details, see "Scan Results Viewer" on page 290. ▶ If one or more scans fail, the failure reason is displayed in a tooltip when you hover over the scanner name.
See also	<ul style="list-style-type: none"> ▶ "Scanners Sidebar" on page 286 ▶ "Scanners Overview" on page 274

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element	Description
<Scan status>	The overall progress of the scan.
Potential defects found	The total number of scan results, which may indicate defects in the application.

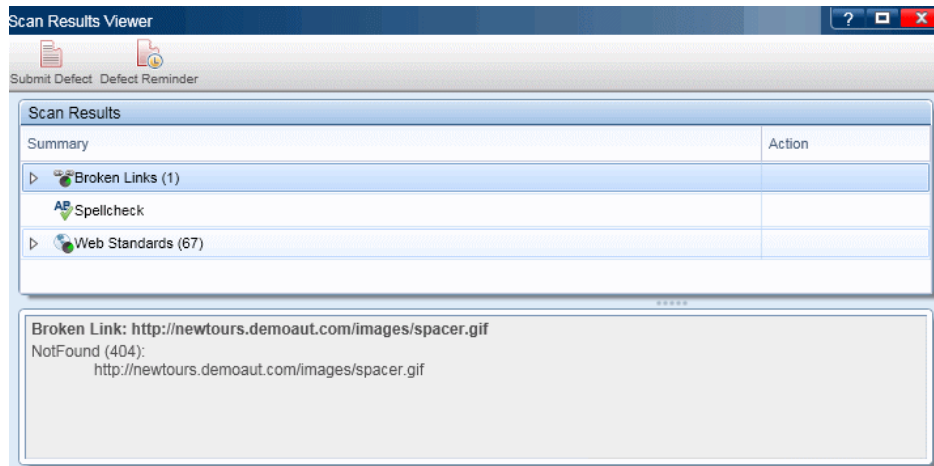
UI Element	Description
<Scan status details>	The scanner name, potential defects, and status for each scanner that you selected to use.
Details	Shows or hides the scan status details.

Scan Results Viewer

This viewer displays the results of the last scan that you performed during the run session.

The Scan Results Viewer also enables you to address the results by submitting defects to ALM based on the results. You can also create defect reminders to be submitted after the run session ends.

The following image shows the Scan Results Viewer.





To access

Do the following:

- 1** During a run session, click the Scanners Sidebar tab (described on page 274).
- 2** Click the **Start Scan** button.
- 3** After the scan, click **Continue** in the Scan Progress dialog box.

Important information	<ul style="list-style-type: none"> ➤ The Scan Results Viewer displays results only from the last scan that you performed. ➤ The Scan Results Viewer is available only during the run session.
See also	<ul style="list-style-type: none"> ➤ "Scanners Sidebar" on page 286 ➤ "Scan Progress Window" on page 287 ➤ "Scanners Overview" on page 274

User interface elements are described below (unlabeled elements are shown in angle brackets>):

UI Element	Description
	Opens the Smart Defect Settings Dialog Box (described on page 189), enabling you to automatically include defect scenario information in your defect. The defect summary includes a description of the selected results.
	Opens the Defect Reminder Dialog Box (described on page 194), enabling you to add a reminder to open a defect for the selected results at a later time.
Add to Target Dictionary	<p>Adds the selected results to the target dictionary.</p> <p>Available only when Localization results are selected.</p> <p>Note: To remove words that you added to the dictionary, follow the steps in "How to Add or Remove Words From a Dictionary" on page 278.</p>
Add to Dictionary (<language>)	<p>Adds the selected results to the primary dictionary.</p> <p>Available only when Spellcheck results are selected.</p> <p>Note: To remove words that you added to the dictionary, follow the steps in "How to Add or Remove Words From a Dictionary" on page 278.</p>
Exclude Category	<p>Creates a rule that excludes the selected results category from future scans.</p> <p>Available only when Web Standards results are selected.</p>

UI Element	Description
Scan Results	<p>The list of results for each scanner: Summary and Action.</p> <ul style="list-style-type: none"> ▶ Click the arrow adjacent to each scanner to expand its results. ▶ Select one or more results in the list to perform actions on them using the right-click menu or toolbar buttons. ▶ To perform an action on all results for a specific scanner, select its parent node and expand the right-click menu.
<Results display>	<p>The display of the results. The results are indicated in red boxes. This pane also contains a slider control, which allows you to zoom in or out.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ Not available when Broken Links or Web Standards results are selected. ▶ If the results are located outside of the captured area of the application, they are not shown in the display.
<Results description>	A textual description of the selected results.

Troubleshooting and Limitations - Scanners

This section describes troubleshooting and limitations for scanners.

General

- ▶ Activating Sprinter scanners does not guarantee detecting all relevant results. In certain environments, the Sprinter scanners might also detect false positive results.

- A scan operation can fail for one of the following reasons:
 - The window of the AUT (application under test) was closed before the scan started.
 - The window of the AUT was minimized before the scan started.
 - The SprinterRTE process was terminated unexpectedly before the scan started.
 - A technical issue is preventing Sprinter from interacting with the AUT.
 - The AUT's add-in definitions are missing or not valid.

Defects

Issues listed in scanner results for which you created defects, will continue to be listed in subsequent scan results.

L10N

The following applies to Localization scanner:

- **Scroll Bars:** The scanner may display certain controls containing scroll bars (horizontal and/or vertical) as a string cut. As a result, it may report a false positive.
- **Left Side Cut:** The scanner cannot detect string cuts on the left side of the text. This is mostly relevant in right-to-left languages.
- **Vertical Cut:** If the control's text is not fully visible in the vertical axis, and does not contain scroll bars, the scanner will be unable to analyze the text in the hidden area. As a result, it may report a false positive.
- **East Asian Languages:** East Asian Languages are not supported.
- **Multiple Child Controls:** The scanner cannot detect string cuts on very small controls (less than three characters in length) such as lists and tree view.

11

Mirroring Tests

This chapter includes:

Concepts

- ▶ Testing on Multiple Machines - Overview on page 296
- ▶ Rules Overview on page 301

Tasks

- ▶ How to Prepare a Test for Mirroring on page 306
- ▶ How to Run a Test with Mirroring on page 308
- ▶ How to Resolve Differences During a Run on page 312
- ▶ How to Handle Replication Errors During a Run on page 315

Reference

- ▶ Mirroring Pane (Power Mode Group) on page 317
- ▶ New Machine/Machine Details Dialog Box on page 319
- ▶ Mirroring Rules Pane (Power Mode Group) on page 328
- ▶ Health Console on page 329
- ▶ Sprinter Agent on page 333
- ▶ Machines Sidebar on page 333
- ▶ Machines Viewer on page 339
- ▶ Differences Viewer on page 341
- ▶ Rules Manager Dialog Box on page 347
- ▶ Rule Wizard - Rule Details Page on page 349

Troubleshooting and Limitations on page 358

Concepts

Testing on Multiple Machines - Overview

A common testing requirement is the need to test your application's compatibility with different computer configurations, and in the case of Web applications, with different browsers.

Sprinter's **Mirroring** feature enables you to run your test simultaneously on multiple machines with different configurations.

A test run with mirroring has a **primary machine** and **secondary machines**:

- ▶ **Primary machine.** The machine on which you manually perform all the user actions in your test.
- ▶ **Secondary machine.** The machine on which Sprinter **replicates** your user actions.

To run a test with Mirroring, you configure each of the secondary machines with the specific configuration you want to test. After you perform each user action on your primary machine, Sprinter replicates that user action on your secondary machines.

When you configure your secondary machines, consider that Sprinter replicates your user actions the same way they were performed on your primary machine. You need to configure your secondary machines in such a way that there will not be a conflict between the actions that are performed on all the machines.

Example:

Suppose your application works with a database. When you create or modify a record in your primary machine, Sprinter will attempt to create or modify the same record when it replicates your action in the secondary machines. Therefore, you cannot use the same database schema in your primary and secondary machines.

To address this issue, you can configure each secondary machine in your run to work with its own database, or with a dedicated database schema.

You can **compare** your primary machine with all the secondary machines in your run, to see if there are differences in their displays. Sprinter provides a number of different options to resolve differences it detects between the displays.

Sprinter associates the list of secondary machines available for mirroring with your user in your ALM project.

To work with mirroring, you need to have a certain number of available ALM licenses. The number of licenses you need depends on the number of secondary machines you want to use in your test. You can work with a maximum of five secondary machines in a run.

The following table describes the total number of licenses required in a run with mirroring:

Secondary Machines	Total Number of ALM Licenses Required
1	1
2-3	2
4-5	3

This section also includes:

- ▶ "How Sprinter Replicates Your User Actions" on page 298
- ▶ "Comparing Machines" on page 299
- ▶ "Resolving Problems on and Unlocking Secondary Machines" on page 299

How Sprinter Replicates Your User Actions

Each time you perform a user action on your primary machine, Sprinter updates the action number on the primary machine display in the **Machines** sidebar.

Sprinter then replicates that action on all the secondary machines in your run. As the action is replicated, there is a visual indication on the **Machines** sidebar tab, as well as on the replication icon for each secondary machine display. The replication icon for each secondary machine also turns gray during the replication process.

If the action is replicated successfully, the replication status returns to green and the action number for that machine is updated to reflect the performed action.

If Sprinter was unable to replicate your user action, the replication status turns red. Sprinter also turns the secondary machine display red and locks the secondary machine.

When a secondary machine is locked, you can continue to perform actions on your primary machine. These actions will be **pending** for any secondary machines that are locked. When you perform these actions, the action number of the primary machine will advance, but those of any locked secondary machines will remain at the action number that caused the failure.

Pending actions may or may not be replicated when you unlock the machine, depending on how you resolve the differences between machines. For details, see "Resolving Problems on and Unlocking Secondary Machines" on page 299.

During replication, Sprinter checks only those user interface elements that are needed to replicate the action, to determine if it can replicate the action. All other objects in the user interface are not compared between the primary and secondary machines.

To check for all differences between the displays of the primary and secondary machines, you perform a **Compare All** operation from the **Machines** sidebar.

Comparing Machines

When you compare machines, Sprinter compares the display of your primary machine with those of all the secondary machines in your run.

When Sprinter begins comparing the machines, the display on your primary machine will display a gray overlay, indicating that Sprinter is learning all the objects in your primary display. There is also a visual indication on the **Machines** sidebar tab. During the learning process, Sprinter learns each of the individual objects in the displays as well as their properties, and compares them. For example, Sprinter can learn that your display contains a check box, as well as whether the checkbox is enabled or disabled, even if there is no indication in the display as to its state.

After Sprinter learns the display of your primary machine, it compares it to the displays of the secondary machines. While each secondary machine is being compared, the comparison status turns gray. If Sprinter did not detect any differences in the displays, the comparison icon returns to green

If Sprinter detects differences between the displays, the comparison status and the secondary machine display both turn red and Sprinter locks the secondary machine.

When a secondary machine is locked, you can continue to perform actions on your primary machine. These actions will be **pending** for any secondary machines that are locked. Pending actions may or may not be replicated, depending on how you resolve the differences between machines.

Resolving Problems on and Unlocking Secondary Machines

When a secondary machine is locked, you need to solve the problem and unlock the machine so that Sprinter can continue replicating your user actions.

Sprinter provides the following operations to address problems on the secondary machine:

- **Stop/Continue Replication.** When you stop replication on a secondary machine, any actions you perform on the primary machine are not kept as pending actions and will not be replicated on the secondary machine.

This may be useful if you need to perform actions to resolve the difference that are not part of your test on your primary machine, and that you do not want replicated. You can also use the **Stop Recording** button in the **Tools** sidebar to stop recording all your user actions on your primary machine.

- ▶ **Differences Viewer.** The Differences Viewer enables you to view the details of differences that were found during a **Compare All** operation. From the Differences Viewer you can:
 - ▶ Submit a defect to ALM about the problem.
 - ▶ Ignore the difference.
 - ▶ Create a rule so that Sprinter ignores the difference now and in the future.

If you use the Differences Viewer to ignore all the differences or to create rules for all the differences, the secondary machine is unlocked and Sprinter attempts to replicate any pending actions.

- ▶ **Open Remote Desktop.** You can open a remote desktop connection from the **Machines** sidebar or the Differences Viewer.

This may be useful if the problem with the secondary machine is due to a display issue that is not related to the application you are testing. You can open a remote desktop connection and correct the problem. You would then use one of the operations below to unlock the machine.

- ▶ **Show Screen.** Displays a current screen capture of the secondary machine.

Sprinter provides the following operations to unlock the machine after you address the problem:

- ▶ **Skip.** You can ignore the problem that Sprinter found with the secondary machine and continue replicating pending user actions.
- ▶ **Sync.** You can ignore the problem that Sprinter found with the secondary machine, delete all pending actions, and synchronize the actions number with the primary machine.
- ▶ **Retry.** You can try to replicate the failed user action again.

This may be useful if you opened a remote desktop connection to address a display issue that is not related to the application you are testing. After addressing the issue, you can try to replicate the action again.

- **Recompare.** You can recompare the secondary machine with the primary machine.

After you resolve differences that were detected by a **Compare All** operation, you can **Recompare** the machines to confirm that there are no differences, and to unlock the secondary machine.

If you resolved the differences between machines using the Differences Viewer, the machines are automatically recompared and unlocked when all the differences are resolved.

Rules Overview

During a test run with mirroring, you may want to periodically compare the display of your primary machine with those of your secondary machines. When you compare the displays, Sprinter detects differences between the displays.

Once you resolve the difference between the displays, you may want Sprinter to ignore similar differences in the future.

When you create a **rule**, you teach Sprinter to ignore certain types of differences during a compare operation.

Rules are associated with a specific application, and are available for all tests that are configured to use that application. You can also create rules that apply to all your Sprinter tests, regardless of their configured application.

When you create a rule in the **Differences Viewer**, Sprinter automatically re-compares the secondary machine with the primary machine, to determine if the difference is no longer detected.

This section also includes:

- "Built-in Rules" on page 302
- "Pre-Defined Rules" on page 302
- "Custom Rules" on page 303
- "Rules for Nested Objects" on page 304

Built-in Rules

Sprinter provides you with a set of built-in rules that address the most common differences that can occur between machines. These rules tell Sprinter to ignore differences up to a certain amount, in the position, size, and location of objects in your display. By default, Sprinter will not detect differences between displays, that meet these rules. Built-in rules apply to all your Sprinter tests, regardless of their configured application.

For more details on these rules and how to enable, disable, and configure them, see "Mirroring Settings Pane (Settings Dialog Box)" on page 68.

Pre-Defined Rules

When you view a difference in the Differences Viewer, you have the option to create a new rule to resolve the difference. When you create a new rule, Sprinter gives you the option to select from a set of pre-defined rules or to create a custom rule.

A pre-defined rule teaches Sprinter to ignore the same type of difference in the future. For example, if the difference is that an object is present in one display and missing in another, a pre-defined rule would ignore the missing object in the future.

If the difference is that a property value of an object is different between machines, the pre-defined rule would ignore that property value in the future.

For details on the specific options available when you select a pre-defined rule, see "New Rule Dialog Box" on page 345.

If a pre-defined rule does not meet your needs, you can create a custom rule.

Custom Rules

You create a custom rule using the Rule Wizard. The rule wizard gives you control over the following aspects of a rule:

- ▶ **Type.** The type determines whether the rule will ignore a specific object, a property of a specific object, but not the entire object, or a property of all objects. When you define the rule type you do not define which object or object property will be ignored, only what type of action the rule will take.
- ▶ **Scope.** The scope determines when the rule will apply. You can choose to have the rule apply to the currently configured application, or to all applications. Applying the rule to all applications means that the rule will apply whenever you run a test in Sprinter with mirroring.
- ▶ **Target.** The target is the object to which the rule will apply. If your rule **Type** ignores a specific object property, the object you select determines which properties are available to ignore.
- ▶ **Action.** The action determines the specific action the rule will take when it is applied. If your rule **Type** ignores an object, the action will be to ignore the object. If, however, your rule **Type** ignores a specific property, the action enables you to select the specific properties you want to ignore. The properties you can ignore will be the properties associated with your **Target** object.

- **Condition.** The condition determines the specific conditions under which the rule will apply.

The condition does not have to depend on the property value you want to ignore.

For example: Suppose you create a rule to ignore the color of a button. But you know that the color will only be different when the text in the button displays OK instead of Yes. You want to ignore the color of the button, but when you want to ignore the color depends on the text in the button.

You can create a rule to ignore the value of the **Color** property, and then set the condition for the rule so that it applies only when the **Text** value is OK.

It is not necessary to set a condition for a rule. If you do not set a specific condition for a rule, the rule will apply whenever the property value you selected for the rule is different between machines.

Rules for Nested Objects

When Sprinter detects differences between machines, it sometimes combines multiple differences into one difference to simplify the displayed information.

Example:

Suppose Sprinter detects a difference between two machines, where one machine displays a table and the other does not. In this case, Sprinter will list the missing table as a difference in the Differences Viewer, but will not list each individual cell within the table as a difference.

When you create a rule to resolve a difference, Sprinter recompares the two displays to apply the new rule and remove the difference from the list of detected differences.

When Sprinter applies a rule to a difference that combined many differences and removes it, the individual differences it combined are now detected separately.

Example:

In the above example, when you create a rule to ignore the difference of the missing table between the two machines, Sprinter recomputes the machines to apply the new rule and removes the missing table from the list of differences. Once the missing table is no longer detected, Sprinter detects all the individual cells within the table as differences between the machines.

In this case, when you create a rule to resolve a difference, you may see new differences appear in the Differences Viewer. You need to create a rule for each of these newly detected differences as well. Sprinter may detect multiple differences for Web objects as well, such as browser, page, and frame objects in the same window.

Tasks

How to Prepare a Test for Mirroring

This task describes how to prepare your test to run with mirroring.

Note: This task is part of a higher-level task. For details, see "How to Run a Manual Test in Sprinter" on page 122.

This task includes the following steps:

- "Prerequisites" on page 306
- "Configure your comparison settings - Optional" on page 307
- "Review the rules for your application" on page 307
- "Configure the secondary machines for your run" on page 308

1 Prerequisites

- a** Install Sprinter on the computers or virtual machines you want to use as secondary machines.



Confirm that the Sprinter Agent icon is displayed in the task bar and that the computers or machines are not locked. The Sprinter application does not need to be running on the secondary machines.

- b** Disable screen savers for the secondary machines in your run.
- c** Ensure that your application is not running on the secondary machines.
- d** Make sure that the secondary machines in your run are not locked.
- e** If you open an external remote desktop connection to a secondary machine (not via Sprinter), make sure it is not minimized.

- f** Make sure that the firewall on all secondary machines is configured to allow the **Sprinter Agent** process.
- g** The **Sprinter Agent** must be run with administrator permissions on each secondary machine. Therefore, if the user that started a secondary machine does not have administrator permissions on that machine, mirroring will work only if you have an active remote desktop connection to that machine.
- h** You can work with a maximum of five secondary machines in a run with mirroring.

Working with mirroring requires that you have the required number of available ALM licenses. The number of licenses you need depends on the number of secondary machines you want to use in your test.

For details on the number of ALM licenses needed, see "Testing on Multiple Machines - Overview" on page 296.

- i** If you want to use Remote Desktop Connection during your mirroring test, Remote Desktop Connection (Terminal Services Client 6.0) must be installed on your primary machine. If it is missing, Sprinter will prompt you to install it.
- j** For more things to consider when preparing your test for mirroring, see "Mirroring Test Preparation" on page 358 in Troubleshooting and Limitations.

2 Configure your comparison settings - Optional

Your comparison settings control which built-in rules you want to activate for your run.

For details on comparison settings and built-in rules, see

- "Mirroring Settings Pane (Settings Dialog Box)" on page 68
- The section on **Built-in Rules** in "Rules Overview" on page 301

3 Review the rules for your application

Click the **Rules** node in the Power Mode Group to view or delete any rules you may have already created for your application.

For details on rules, see "Rules Overview" on page 301.

4 Configure the secondary machines for your run

A test run with mirroring has a primary machine on which you manually perform all the user actions in your test and secondary machines on which Sprinter replicates your user actions.

When you configure a secondary machine, you provide the information Sprinter needs to connect to the machine and how Sprinter will start the application on the secondary machine. You can also provide the information needed to open a remote desktop connection. (This can be provided during the run as well.)

For details on configuring secondary machines, see "Mirroring Pane (Power Mode Group)" on page 317.

How to Run a Test with Mirroring

The following steps describe how to run a test with Mirroring. This task assumes that you already understand the basic functionality of Sprinter and how to run a test without Mirroring as described in "How to Run a Manual Test in Sprinter" on page 122, and includes the following steps:

- "Prerequisites" on page 309
- "Start the run" on page 309
- "Perform the user actions in your test" on page 309
- "View the status of your secondary machines in the Machines sidebar" on page 310
- "View a current screen capture of all the machines in your run - Optional" on page 310
- "Compare the displays of your primary and secondary machines - Optional" on page 310
- "Resolve replication or comparison problems on a secondary machine - Optional" on page 311
- "Continue with your test as usual" on page 311

1 Prerequisites

To run a test with mirroring, you need to configure the secondary machines in your run. You may also want to review any rules you already have for your application and your comparison settings.

For details, see "How to Prepare a Test for Mirroring" on page 306

2 Start the run

When you start a run with mirroring, the **Health Console** (described on page 329) opens, displaying the status and connection progress of all the machines in the run.

From the Health Console you can:

- **Initialize a machine that failed to connect**
- **Open the Machine Details Dialog Box**
- **Open a remote desktop connection to the machine**

When all the machines connect successfully, the Health Console closes and the run begins.

3 Perform the user actions in your test

Run your test as usual. Each of the user actions you perform on your primary machine are replicated on your secondary machines.

Note: Sprinter replicates your user actions only after they are completed. For edit boxes and combo boxes, the action is not complete, and will not be replicated, until you move the focus off the box.

4 View the status of your secondary machines in the Machines sidebar

The **Machines** sidebar displays:

- ▶ The number action that was last attempted on each machine.
- ▶ The status of each machine as a tool tip, when you hover over the machine display.
- ▶ The replication status of your action.
- ▶ The comparison status of each machine.

For details on using the **Machines** sidebar, see "Machines Sidebar" on page 333.

5 View a current screen capture of all the machines in your run - Optional



Click the **Machines Viewer** button to open the Machines Viewer (described on page 339).

6 Compare the displays of your primary and secondary machines - Optional

When you compare machines, Sprinter compares the display of your primary machine with those of all the secondary machines in your run and detects any differences between the displays.



Click the **Compare All** button to compare the display of your primary machine with those of all your secondary machines.

Compare All compares only those secondary machines whose **action numbers** are the same as the primary machine.

For more details on comparing the machines in your run, see "Comparing Machines" on page 299.

7 Resolve replication or comparison problems on a secondary machine - Optional

If Sprinter could not replicate your user action on a secondary machine, or if it detected differences between your machines during a **Compare All** operation, the **Machines** sidebar indicates the problem and the secondary machine is locked.

In order for subsequent user actions to be replicated, you must resolve the replication problem or difference and unlock the machine.

For details on how to handle differences and replication errors, see:

- "How to Resolve Differences During a Run" on page 312
- "How to Handle Replication Errors During a Run" on page 315

For more details, see:

- "Resolving Problems on and Unlocking Secondary Machines" on page 299
- The section on **Secondary Machines Display** in "Machines Sidebar" on page 333
- The section on **Secondary Machine Right-click Options** in "Machines Sidebar" on page 333
- "How Sprinter Replicates Your User Actions" on page 298
- "Comparing Machines" on page 299

8 Continue with your test as usual

Continue performing the user actions in your test as usual.

How to Resolve Differences During a Run

If you run your test on multiple machines (as described in "How to Run a Test with Mirroring" on page 308), you may want to compare the display of the secondary machines to that of the primary machine, and find those areas where the displays may not match.

Sprinter detects differences between these displays. It also enables you to address these differences and continue your test.

During the time that you are resolving differences, you may need to perform actions on your primary machine. In this case you may want to stop capturing your user actions so they are not replicated on your secondary machines. For details on stopping capturing, see "Tools Sidebar" on page 186.

The following steps describe how to resolve differences detected between displays.

- ▶ "Determine the type of difference" on page 312
- ▶ "Resolve the difference" on page 313
- ▶ "Unlock the secondary machine" on page 314

1 Determine the type of difference

Before you can resolve a difference between machines, you need to understand the type of difference Sprinter found. You can view the difference in one of the following ways:

- ▶ Open the Differences viewer to view the difference. The Differences Viewer displays the differences between machines, and enables you to create a rule or submit a defect based on the difference. For details on the Differences Viewer, see "Differences Viewer" on page 341.
- ▶ Display a screen capture of the current state of a secondary machine with the **Show Screen** operation.
- ▶ Open a remote desktop connection to the secondary machine.

These operations are available by for each of the secondary machines in the **Machines** sidebar, by right-clicking the secondary machine display. For more details on these options, see the section on **Secondary Machine Right-click Options** in "Machines Sidebar" on page 333.

2 Resolve the difference

Once you determine the type of difference, you can decide the best method to resolve it. The following are the types of differences and options for resolving them:

- ▶ **A one-time difference between displays.** This might be a message box, warning, or other object that displays in a machine, based on settings for that machine. It may not represent a defect in the application, and it is not likely to occur again during your test.
 - ▶ You might resolve this type of difference by opening a remote desktop connection to the secondary computer and performing the actions necessary to resolve the difference.
 - ▶ If the difference represents a defect in your application, you can submit a defect for this difference. For details on submitting defects, see "How to Detect and Submit a Defect" on page 183.
- ▶ **A difference in the displays that is likely to occur again.**

If the difference is likely to occur again, it is recommended that you resolve the difference through the Differences Viewer.

- ▶ If the difference represents a defect in your application, you can submit a defect for this difference. In the Differences Viewer, click the **Submit Defect** button to submit the defect to ALM. For more details, see "Differences Viewer" on page 341.

When you submit a defect, Sprinter also creates a rule to ignore this specific difference on this object, with its current properties.

- ▶ If the difference does not represent a defect, but it is likely to occur again, you may want to teach Sprinter to ignore similar differences in the future.

In the Differences Viewer, click the **New Rule** button to open the New Rule Dialog Box (described on page 345), and follow the on screen instructions.

When you create a rule to ignore a difference, Sprinter automatically recomparates the secondary machine with the primary machine, to determine if the difference is no longer detected.

3 Unlock the secondary machine

If you resolved the difference by creating a rule, the secondary machine is unlocked, and you can continue your test. A secondary machine will only be unlocked if all the detected differences are resolved.

If you used a different method to resolve the difference, you need to unlock the secondary machine to continue replicating your user actions on that machine.

- ▶ **Right-click > Skip** unlocks the machine and attempts to replicate any pending user action.
- ▶ **Right-click > Recompare** compares the secondary machine with the primary machine, and unlocks the machine if no differences are found.
- ▶ **Right-click > Sync** ignores the problem that Sprinter found with the secondary machine, deletes all pending actions, and synchronizes the actions number with the primary machine.

For more details, see the section on **Secondary Machine Right-click Options** in "Machines Sidebar" on page 333.

How to Handle Replication Errors During a Run

If you run your test on multiple machines (as described in "How to Run a Test with Mirroring" on page 308), you may experience a replication error on a secondary machine.

Replication errors can occur due to differences between the displays of the primary and a secondary machine, or due to a communication error with the secondary machine.

During the time that you are handling replication errors, you may need to perform actions on your primary machine that are not part of your test. In this case you may want to stop capturing your user actions so they are not replicated on your secondary machines. For details on stopping capturing, see "Tools Sidebar" on page 186.

For details on how Sprinter replicates user actions, see "How Sprinter Replicates Your User Actions" on page 298.

- "Determine the type of replication error" on page 315
- "Handle the error" on page 316
- "Unlock the secondary machine" on page 316

1 Determine the type of replication error

Before you can handle a replication error, you need to understand its cause by viewing the current display of the secondary machine. You can view the secondary machine in one of the following ways:


- Display a screen shot of the current state of a secondary machine with the **Show Screen** operation.
- Open a remote desktop connection to the secondary machine.

You can also hover over the secondary machine display to view details of the error.

These operations are available for each of the secondary machines in the **Machines** sidebar. For more details on these options, see the section on **Secondary Machine Right-click Options** in "Machines Sidebar" on page 333.

2 Handle the error

Once you determine the cause of the error, you can decide the best method to handle it. The following are the types of errors and options for handling them:

- ▶ **A problem with the display.** This might be a message box, warning, or other object that displays in a machine, based on settings for that machine. It could also represent a defect in your application.
 - ▶ You can handle this type of error by opening a remote desktop connection to the secondary machine and performing the actions necessary to modify the display to match that of the primary machine.
 - ▶ If the problem was caused by a defect in your application, you can report it by submitting a defect to ALM. For details, see "How to Detect and Submit a Defect" on page 183.
- ▶ **A communication problem with the secondary machine.**
 - ▶ A replication error may occur if the connection to the secondary machine is lost. You can use the options in the Health Console (**Machines** sidebar > **Health Console** button ) to reconnect to a secondary machine. For details, see "Health Console" on page 329.

3 Unlock the secondary machine

After you handle a replication error you need to unlock the secondary machine to continue replicating your user actions on that machine. You can unlock a machine in one of the following ways:

- ▶ **Skip.** This option unlocks the machine and attempts to replicate any pending user action.
- ▶ **Sync.** This option unlocks the machine and does not replicate any pending user actions. The action number is set to match the number of actions on the primary machine.
- ▶ **Retry.** Retries replicating the failed user action.

For more details on these options, see the section on **Secondary Machine Right-click Options** in "Machines Sidebar" on page 333.

Reference

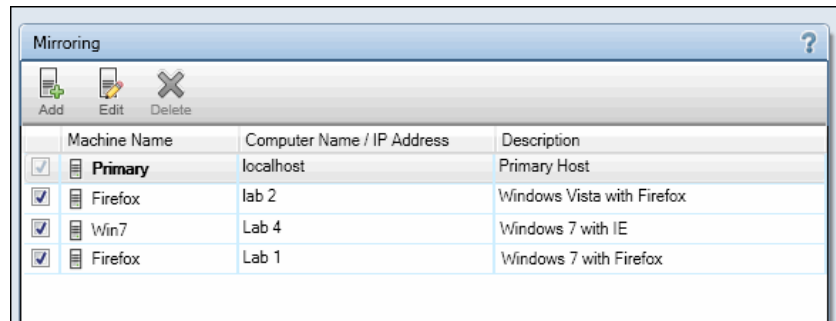
Mirroring Pane (Power Mode Group)

This pane enables you to add, edit, and delete secondary machines for your test.

Tasks you can accomplish with the Mirroring pane:




- ▶ "How to Prepare a Test to Run in Power Mode" on page 226
- ▶ "How to Prepare a Test for Mirroring" on page 306

The following image shows the Mirroring pane.



To access	Select Power Mode group > Mirroring node.
Important information	<ul style="list-style-type: none"> ▶ By default, your local computer is defined as the Primary machine. ▶ For details on how Sprinter maintains the list of secondary computers, see "How User Information is Maintained" on page 47.
See also	"Testing on Multiple Machines - Overview" on page 296

User interface elements are described below:

UI Elements	Description
	<p>Opens the New Machine dialog box, enabling you to define the configuration of a secondary machine.</p> <p>The New Machine dialog box contains the following tabs:</p> <ul style="list-style-type: none"> ▶ "General Tab (New Machine/Machine Details Dialog Box)" on page 319 ▶ "User Credentials Tab (New Machine/Machine Details Dialog Box)" on page 326 ▶ "Run Configuration Tab (New Machine/Machine Details Dialog Box)" on page 322
	<p>Opens the Machine Details dialog box, enabling you to edit the configuration of a secondary machine.</p> <p>The Machine Details dialog box contains the following tabs:</p> <ul style="list-style-type: none"> ▶ "General Tab (New Machine/Machine Details Dialog Box)" on page 319 ▶ "User Credentials Tab (New Machine/Machine Details Dialog Box)" on page 326 ▶ "Run Configuration Tab (New Machine/Machine Details Dialog Box)" on page 322
	<p>Deletes the selected machine from the list of secondary machines.</p> <p>Note: You can disable a secondary machine for a particular test run by clearing its check box, without removing it from the list of machines. It will then be available with its configuration, for use in future tests.</p>

New Machine/Machine Details Dialog Box

This dialog box enables you to define edit the configuration of a secondary machine, and includes the following tabs:

- General Tab (New Machine/Machine Details Dialog Box)
- Run Configuration Tab (New Machine/Machine Details Dialog Box)
- User Credentials Tab (New Machine/Machine Details Dialog Box)

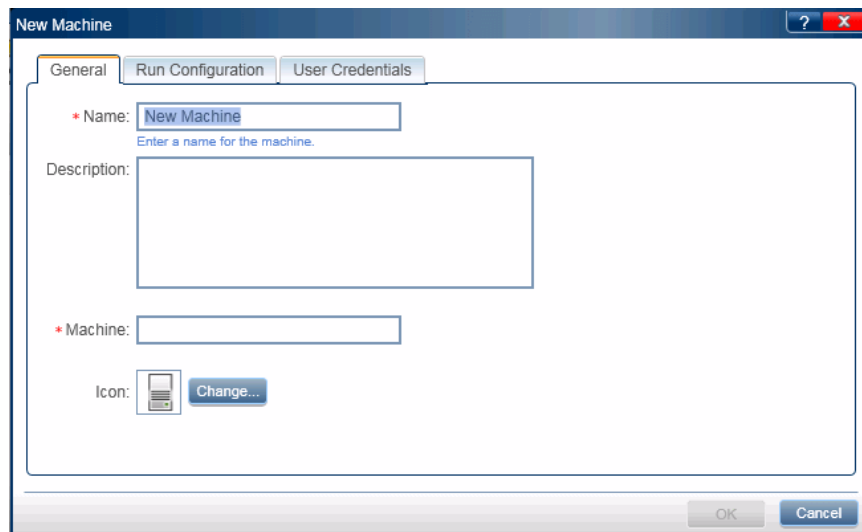
General Tab (New Machine/Machine Details Dialog Box)

This tab enables you to define the configuration of a secondary machine.

Tasks you can accomplish with the General tab:

- "How to Prepare a Test to Run in Power Mode" on page 226
- "How to Prepare a Test for Mirroring" on page 306

The following image shows the General tab.



To access	<ol style="list-style-type: none"> 1 Select Power Mode group > Mirroring node. 2 In the Mirroring pane, click the Add button. The New Machine dialog box opens. 3 Select New Machine dialog box > General tab.
See also	"Testing on Multiple Machines - Overview" on page 296

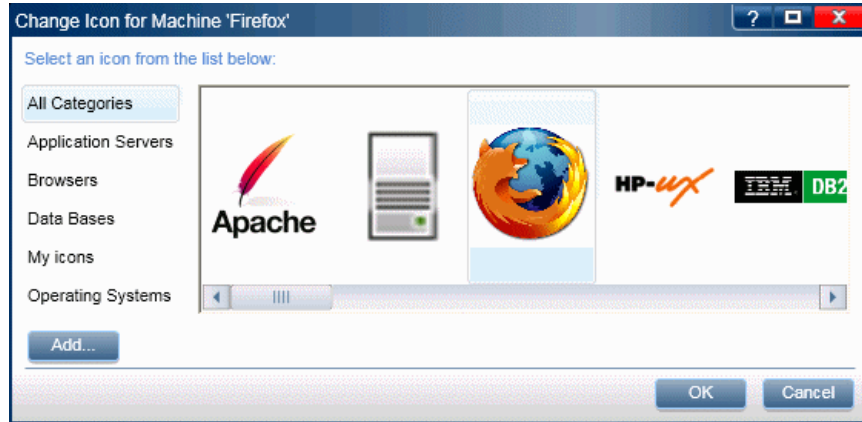
Descriptions of the user interface elements are available in the dialog box when you hover over them. The table below describes the user interface elements:

UI Elements	Description
Name	A logical name for the secondary machine.
Description	A description of the secondary machine's environment, for example, a browser or operating system name.
Machine	<p>The computer or virtual machine you want to use as a secondary machine.</p> <p>The following are valid entries:</p> <ul style="list-style-type: none"> ➤ The IP address of the computer or virtual machine ➤ The machine name of the computer or virtual machine in one of the following formats: <ul style="list-style-type: none"> ➤ MachineName.DomainName ➤ DomainName\MachineName
Icon	<p>The icon that will be displayed in the Machines sidebar, to represent the secondary machine.</p> <p>Click the Change Icon button to open the Change Icon Dialog Box and select a different icon for the secondary machine.</p> <p>You may want to select an icon that helps you identify the specific configuration of the secondary machine. For example, if the secondary machine is testing a different browser, you can use an icon to represent that browser.</p>

Change Icon Dialog Box

This dialog box enables you to select an icon to represent the secondary machine in the **Machines** sidebar.

The following image shows the Change Icon dialog box.



To access	<ol style="list-style-type: none"> 1 Select Power Mode group > Mirroring node. 2 In the Mirroring pane, click the Add button. The New Machine dialog box opens. 3 Select New Machine dialog box > General tab > Change button.
See also	"Testing on Multiple Machines - Overview" on page 296

User interface elements are described below:

UI Elements	Description
Select an icon from the list below	The list of categories from which to select an icon for the machine. The category you select changes the displayed list of icons available in the right pane.

UI Elements	Description
<Icon display>	A display of the icons you can select to represent the machine.
Add	Enables you to browse the file system and select an icon for the machine.

Run Configuration Tab (New Machine/Machine Details Dialog Box)

This tab enables you to define how the secondary machine will run the application in your test run.

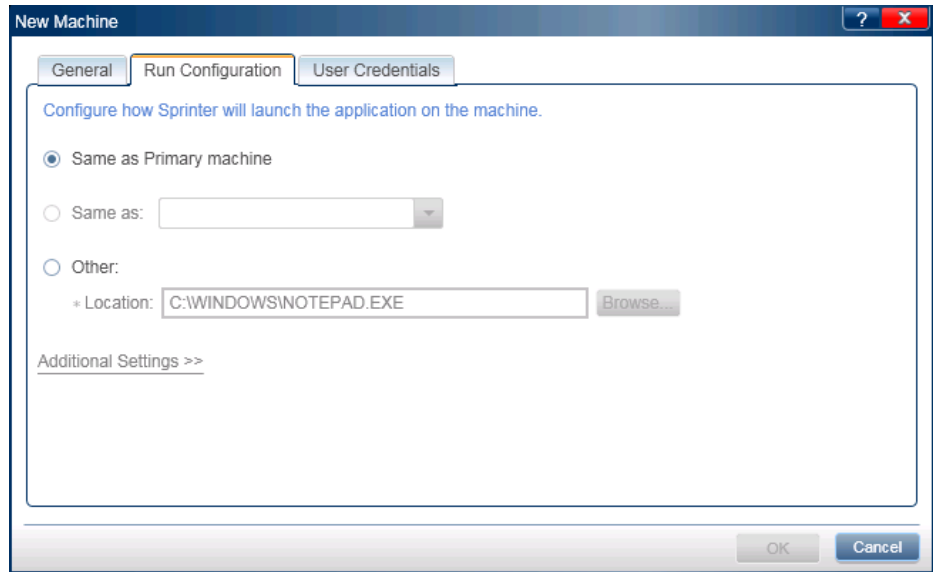
When you have a desktop application selected in the Application Pane (Power Mode Group), this tab displays options for desktop applications.

When you have a Web application selected in the Application Pane (Power Mode Group), this tab displays options for Web applications.

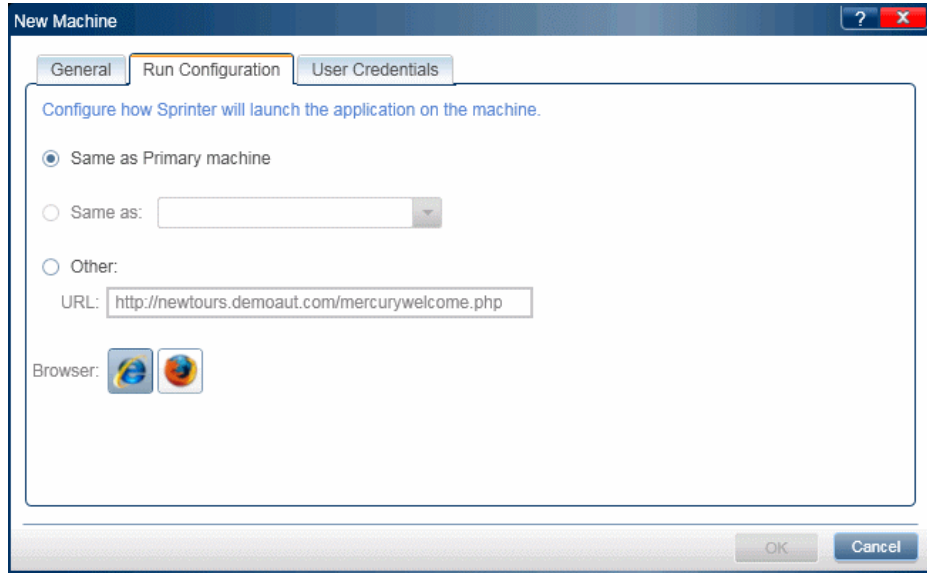
Tasks you can accomplish with the **Run Configuration** tab:

- "How to Prepare a Test to Run in Power Mode" on page 226
- "How to Prepare a Test for Mirroring" on page 306

The following image shows the **Run Configuration** tab with options for a desktop application.



The following image shows the **Run Configuration** tab with options for a Web application.



To access	<ol style="list-style-type: none"> 1 Select Power Mode group > Mirroring node. 2 In the Mirroring pane, click the Add button. The New Machine dialog box opens. 3 Select New Machine dialog box > Run Configuration tab.
Important information	Sprinter remembers your modifications to the run configuration as long as you continue to work with your currently defined application. If you change applications, the run configurations return to their default settings.
See also	"Testing on Multiple Machines - Overview" on page 296

User interface elements are described below. Some options are displayed differently, depending on whether you are working with a desktop or Web application:

UI Elements	Description
Same as Primary machine	Instructs the machine to run the application according to the settings for the application in the Application Pane (Power Mode Group) described on page 231. (Default)
Same as <secondary machine>	Instructs the machine to run the application according to the settings for the selected secondary machine. Only secondary machines that have unique run settings are displayed in this list.
Other (for desktop applications)	<p>Defines new run settings for the application, for this machine.</p> <p>Path. The path to the desktop application. The Browse option displays the file system for your local computer and not the secondary machine.</p> <p>Additional Settings:</p> <ul style="list-style-type: none"> ▶ Parameters. Any parameters you want to run the application with. Parameter settings are maintained per-application. When you select an application in the Application name field, any previously defined parameters are run by default. To change or remove the parameters, edit them in the Parameters field. ▶ Working folder. The working folder for the desktop application.
Other (for Web applications)	<p>URL. The URL address of the Web application you want to run in your test.</p> <p>Browser. The browser in which you want to run the Web application.</p>

User Credentials Tab (New Machine/Machine Details Dialog Box)

This tab enables you to provide login information for your secondary machine. This information is used for the following:

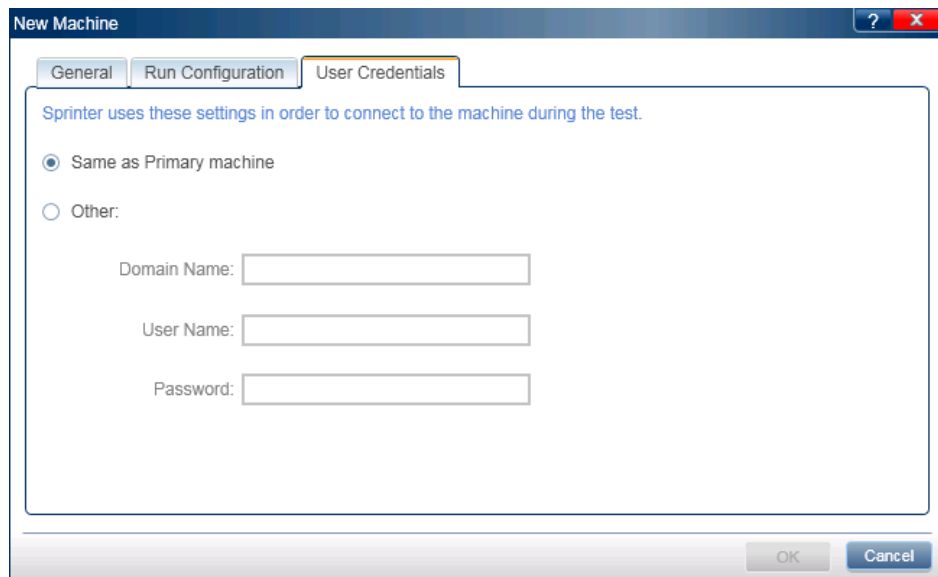
- ▶ Opening a remote desktop connection to the secondary machine, when running the test.
- ▶ Interacting with the Sprinter Agent on the secondary machine. In this case Sprinter will only use a Sprinter Agent that is launched by the specified user, with the correct credentials.

To allow Sprinter to use any Sprinter Agent running on the secondary machine, set the **ProtectSessions** flag in the **Sprinter.exe.config** file (in the product's **bin** folder) to **False** on the secondary machine.

Tasks you can accomplish with the User Credentials tab:

- ▶ "How to Prepare a Test to Run in Power Mode" on page 226
- ▶ "How to Prepare a Test for Mirroring" on page 306

The following image shows the **User Credentials** tab.



To access	<ol style="list-style-type: none"> 1 Select Power Mode group > Mirroring node. 2 In the Mirroring pane, click the Add button. The New Machine dialog box opens. 3 Select New Machine dialog box > User Credentials tab.
Important information	<ul style="list-style-type: none"> ▶ If you try to connect to the machine during your run and you did not enter the remote desktop connection credentials in this tab or the credentials are incorrect, you will be prompted for this information. ▶ The credentials you provide must match the credentials for the user currently logged on to the secondary machine. If they do not match, you will be prompted for this information.
See also	"Testing on Multiple Machines - Overview" on page 296

Descriptions of the user interface elements are available in the dialog box when you hover over them.

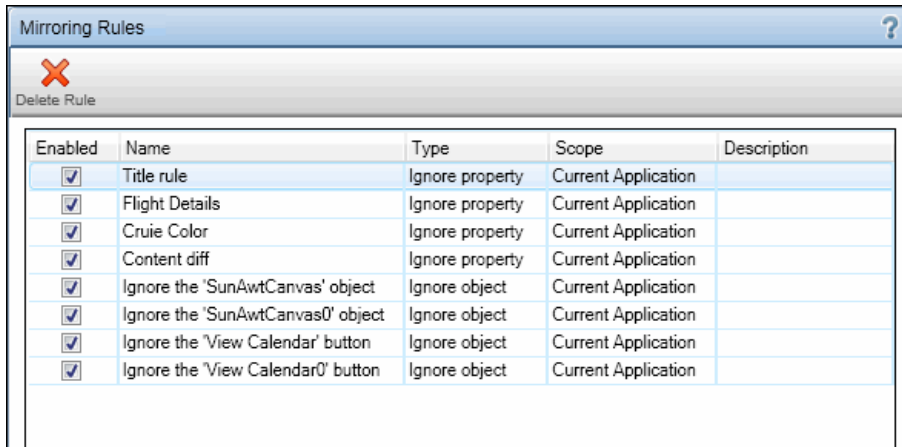
Mirroring Rules Pane (Power Mode Group)

This pane enables you to view and delete the rules that are associated with the mirroring for the currently defined application.

Tasks you can accomplish with the Rules pane:

- ▶ "How to Prepare a Test to Run in Power Mode" on page 226

The following image shows the Mirroring Rules pane.



To access	Select Power Mode group > Rules node.
Important information	For details on the Type and Scope of a rule, see the Custom Rules section in "Rules Overview" on page 301.

Descriptions of the user interface elements are available in the pane when you hover over them.

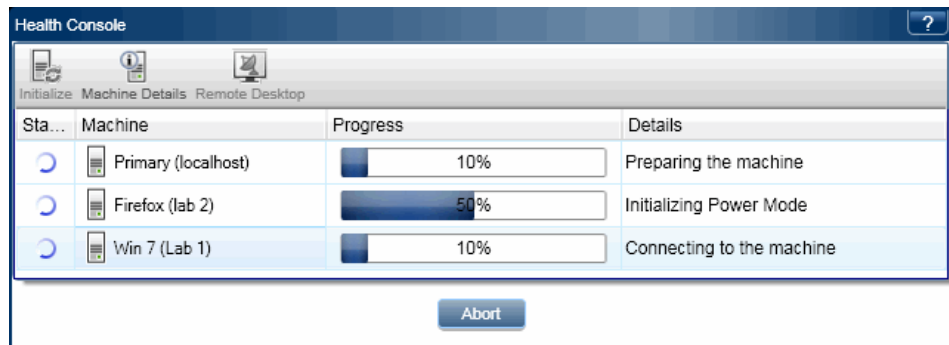
Health Console


This window displays the status of each machine in a mirroring test.

Tasks you can accomplish with the Health Console:



- ▶ "How to Run a Manual Test in Sprinter" on page 122


The following image shows the Health Console as it prepares a run with mirroring with two secondary machines.



To access	<ul style="list-style-type: none"> ▶ The Health Console automatically opens when you run a test with mirroring. ▶ During a run you can also access the health console by clicking the Health Console button  Machines sidebar.
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User interface elements are described below (unlabeled elements are shown in angle brackets>):

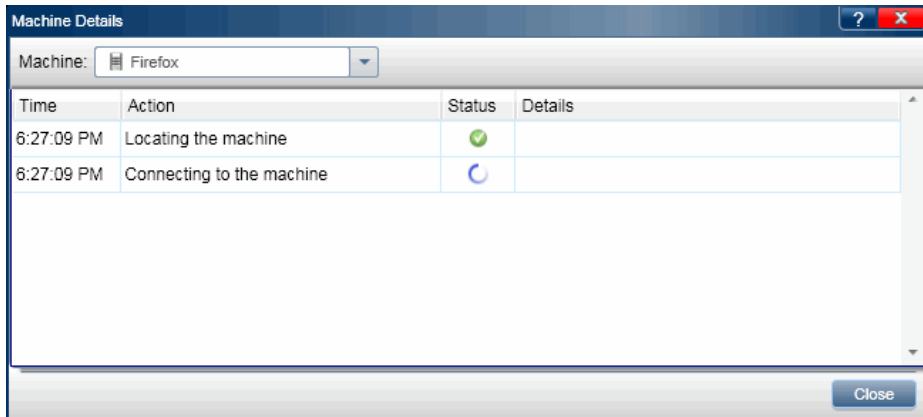
UI Elements	Description
	Instructs Sprinter to attempt to initialize the Sprinter Agent on the selected machine if it failed to connect.
	Opens the Machine Details Dialog Box (described on page 330) for the selected machine.

UI Elements	Description
	Opens a remote desktop connection to the selected machine.
<Machine list>	The list of machines for the current run. The machine list displays the status, machine name, a progress bar, and details for each machine.

Machine Details Dialog Box

This dialog box displays the details of the connection process for machines during a mirror test.

The following image shows the Machine Details dialog box.



To access	In the Health Console, click the Machine Details button.
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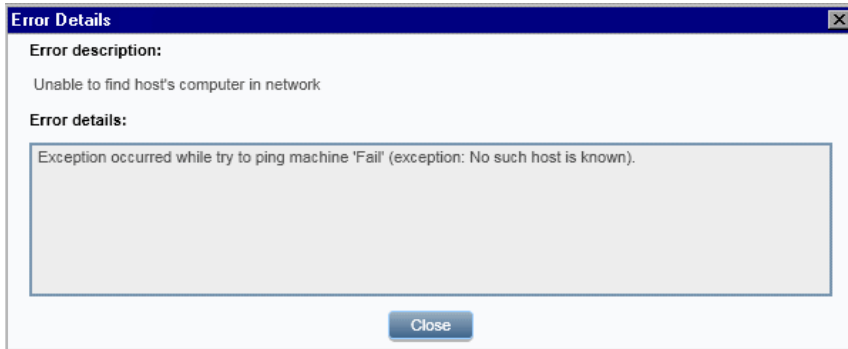
User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Elements	Description
Machines	A drop-down list of the machines for this run.
<Action list>	<p>The list of actions for the selected machine. The action list displays the Time, Action, Status, and Details for each action.</p> <ul style="list-style-type: none">▶ If an action completes successfully, no details are displayed.▶ If an action fails, the Details column displays the specific problem. You can click on the error message and select More Details to open the Error Details Dialog Box (described on page 332).

 **Error Details Dialog Box**

This dialog box displays error information when Sprinter fails to connect to a machine.

The following image shows the Error Details dialog box.




To access	<p>Do the following:</p> <ol style="list-style-type: none"> 1 In the Health Console for a failed connection, click the Machine Details Dialog Box button. 2 The details column displays the specific problem. Click on the error message and select More Details.
See also	"Testing on Multiple Machines - Overview" on page 296

Descriptions of the user interface elements are available in the dialog box.

Sprinter Agent

The Sprinter Agent enables Sprinter to run tests in Power Mode and with mirroring.

To access	In the task bar, right-click the Sprinter Agent icon  to display the Sprinter Agent options.
Important information	When you hover over the Sprinter Agent icon, the agent status is displayed. For a secondary machine, the status displays if the agent is in use in a test with mirroring, or if it is available for use.

Right-click shortcuts are described below:

UI Elements	Description
Reset	Stops and restarts the Sprinter Agent.
Exit	Stops the Sprinter Agent.
Run When Computer Starts	Instructs the machine to invoke the Sprinter Agent automatically on startup.

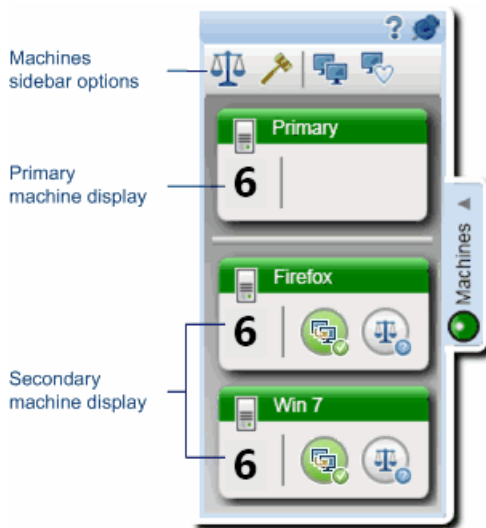
Machines Sidebar


This sidebar enables you to work with your secondary machines during a test with mirroring.

Tasks you can accomplish with the **Machines** sidebar:

- "How to Run a Test with Mirroring" on page 308
- "How to Resolve Differences During a Run" on page 312
- "How to Handle Replication Errors During a Run" on page 315





The following image shows the **Machines** sidebar with two secondary machines.



<p>To access</p>	<p>During a test run, click the Machines sidebar tab.</p> <ul style="list-style-type: none"> ➤ Click the sidebar tab again, or click off the sidebar tab, to close the sidebar. ➤ To lock the sidebar in the open position, click the thumbtack  icon. ➤ To reposition the sidebar, click and drag on the sidebar header.
<p>See also</p>	<ul style="list-style-type: none"> ➤ "Testing on Multiple Machines - Overview" on page 296 ➤ "How Sprinter Replicates Your User Actions" on page 298 ➤ "Comparing Machines" on page 299 ➤ "Resolving Problems on and Unlocking Secondary Machines" on page 299 ➤ "Rules Overview" on page 301

Machines Sidebar Operations




User interface elements are described below:


UI Elements	Description
	<p>Compare All. Compares the display of the primary machine against the displays of all the secondary machines in your run. Compare All compares the primary machine only with secondary machines that are synchronized with the primary machine.</p> <p>Note: If you edit an edit box or combo box, the Compare All option is disabled until you move the focus off the box.</p> <p>User actions on edit boxes and combo boxes are not replicated until you move the focus off the box. The Compare All operation is therefore disabled, to prevent Sprinter from comparing edit boxes and combo boxes that have not yet been updated on the secondary machines.</p>
	<p>Show Rules. Opens the Rules Manager Dialog Box (described on page 347) enabling you to create, view, edit, and delete the rules in your test.</p>
	<p>View Machines. Opens the Machines Viewer (described on page 339), displaying the current display of all the machines in your test.</p>
	<p>Health Console. Opens the Health Console, displaying the connection status of each machine. For details, see "Health Console" on page 329.</p>

Secondary Machine Display

Each secondary machine display provides information that is specific to its machine, indicates the status of the machine, and provides you with operations you can perform on the machine.

User interface elements are described below (unlabeled elements are shown in angle brackets>):

UI Elements	Description
	<p>Replication status. Indicates the status of replication on the secondary machine.</p> <ul style="list-style-type: none"> ▶ After every action you perform on the primary machine, there is a visual indication on this icon telling you that your action is being replicated on the secondary machine. ▶ If your action was replicated successfully, the icon turns green. If the action could not be replicated, the icon turns red and the secondary machine is locked. ▶ For details on how to handle replication problems and unlock the secondary machine, see "How to Handle Replication Errors During a Run" on page 315.
	<p>Comparison status. Indicates the status of the comparison of the secondary machine with the primary machine.</p> <ul style="list-style-type: none"> ▶ Secondary machines are compared with the primary machine when you click the Compare All button , or when you select Recompare from the Secondary Machine Right-click Options. ▶ If the comparison did not detect any differences between the primary and secondary machine, the icon turns green. If the comparison detected differences, the icon turns red and the secondary machine is locked. ▶ For details on how to handle differences and unlock the secondary machine, see "How to Resolve Differences During a Run" on page 312.

UI Elements	Description
<tooltip>	<p>When you hover over the Secondary Machine Display a tooltip is displayed, providing you with information about the machine.</p> <ul style="list-style-type: none"> ➤ Action. Lists the number of the action performed on the machine and provides a description of the action. ➤ Status. Indicates the status of the machine. If the machine is locked, provides a description of the problem. Indicates connections status with primary machine. Click the Health Console button  to address connection problems.
<right-click options>	The right-click options for each machine enable you to control your secondary machines and address replication and comparison errors on machines. For details, see Secondary Machine Right-click Options.

Secondary Machine Right-click Options

The right-click options for each secondary machine are described below:

UI Elements	Description
Start/Stop Replication	<p>Starts or Stops replicating user actions performed on the primary machine, on the secondary machine.</p> <p>When you stop replicating on the secondary machine, any user actions performed on the primary machine are not replicated on the secondary machine.</p>
Skip	<p>Ignores the problem found with replication or comparison and unlocks the machine, enabling replication of user actions to continue.</p> <p>Any pending actions that have not yet been replicated are performed on the secondary machine.</p>

UI Elements	Description
Sync	<p>Synchronizes the secondary machine with the primary machine.</p> <ul style="list-style-type: none"> ▶ Ignores the replication error and unlocks the machine, enabling replication of user actions to continue. ▶ The user action and any pending actions that failed to replicate are not performed on the secondary machine. ▶ The number of user actions is set to match the number of actions on the primary machine.
Retry	<p>Retries replicating the current user action on the secondary machine.</p>
Show Screen	<p>Displays a screen capture of the secondary machine.</p>
Recompare	<p>Compares the secondary machine with primary machine . Comparing an individual secondary machine can be performed only after performing a Compare All operation from the Machines Sidebar Operations.</p> <p>When you recompare machines, the secondary machine is compared with the primary machine at the state the primary machine was in when the secondary machine became locked. If you made any changes to the state of the primary machine after the secondary machine was locked, they are not recognized by the Recompare operation.</p> <p>Note: The Recompare operation is designed to be used after you resolve differences that were found between machines. You cannot perform a Recompare operation if you perform a user action on your primary machine after a Compare All operation.</p> <p>If you click the Stop Recording button in the Tools sidebar, you can perform user actions on your primary machine and still perform a Recompare operation on your secondary machine when you continue recording.</p>

UI Elements	Description
Differences Viewer	Opens the Differences Viewer (described on page 341), enabling you to view and resolve differences that were detected between machines.
Remote Desktop	<p>Opens a remote desktop connection with the secondary machine.</p> <p>You should not have an external remote desktop connection (not via Sprinter) open, when you open a remote desktop connection via Sprinter.</p>

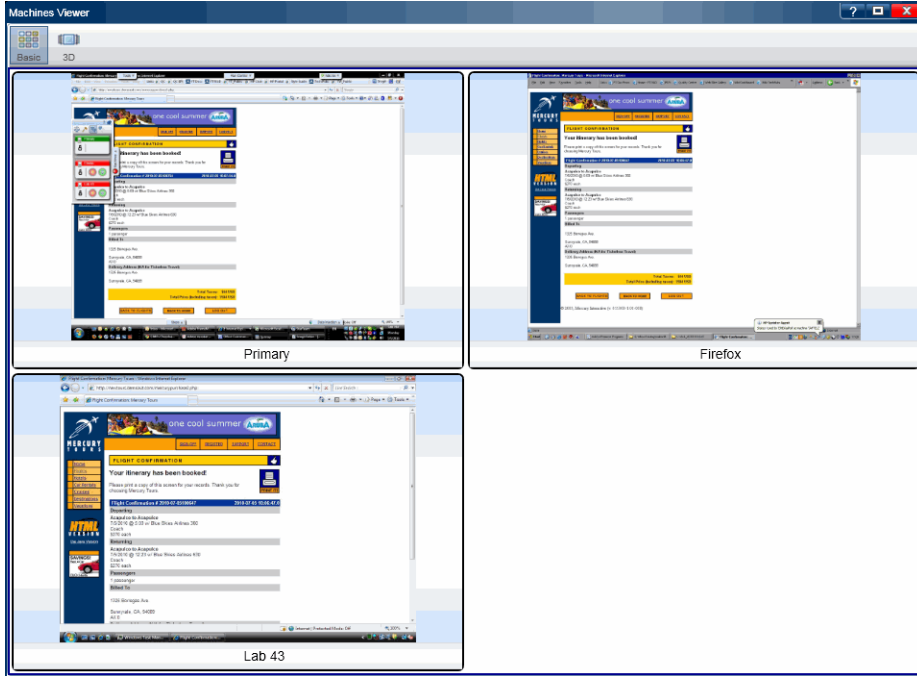
Machines Viewer


This viewer displays a current screen capture of the machines in the run.

Tasks you can accomplish with the Machines Viewer:



- "How to Run a Test with Mirroring" on page 308
- "How to Resolve Differences During a Run" on page 312
- "How to Handle Replication Errors During a Run" on page 315

The following image shows the Machines Viewer.



To access	Select Machines side bar > View Machines button  .
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User interface elements are described below:

UI Elements	Description
	Displays the machines in a split-screen view. Clicking on a machine brings that machine into the main view. Clicking again returns the display to the split-screen view.
	Displays the machines in a three dimensional view. Clicking on a machine rotates that machine into the main view. You can also scroll through the machines by using the scroll bar on the bottom of the screen.

Differences Viewer

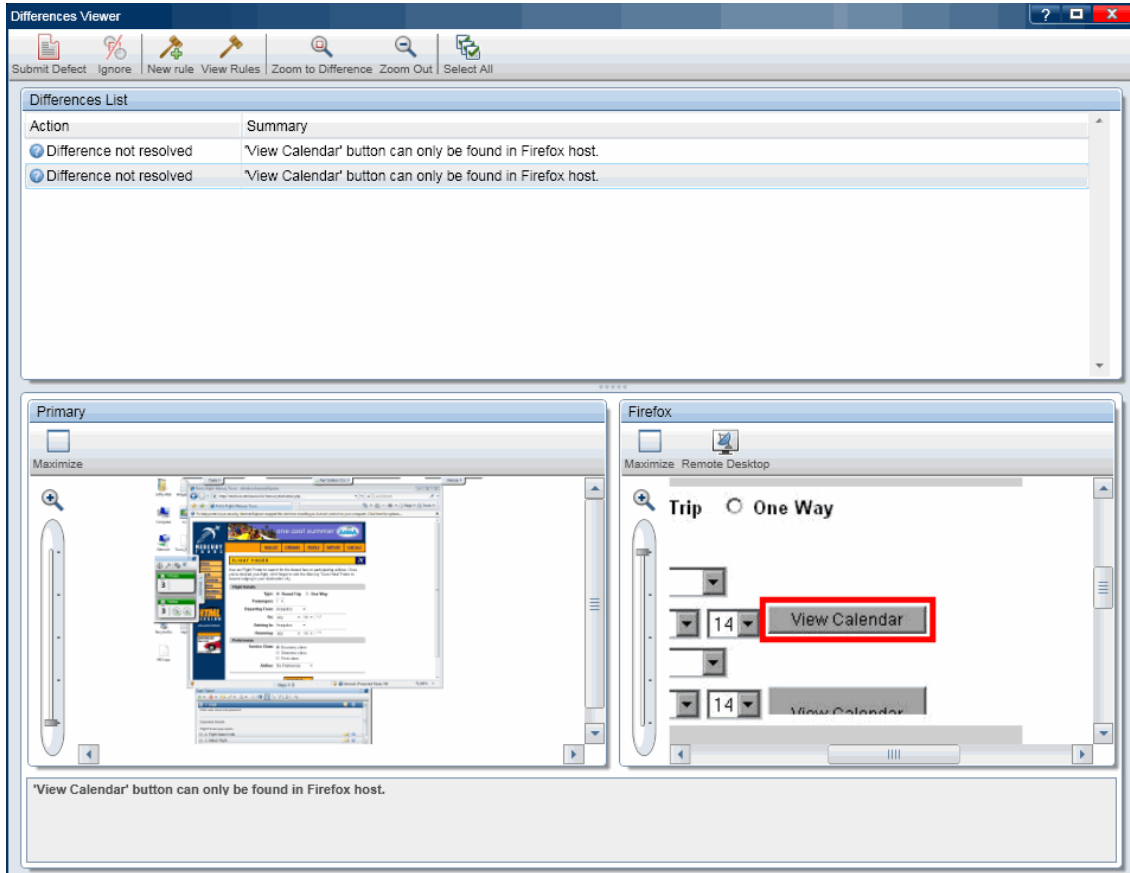
This viewer displays the differences detected between the displays of the primary machine and secondary machines in your test.

The Difference Viewer also enables you to address the differences by creating rules for them or ignoring them. You can also submit defects to ALM based on the detected differences.

Tasks you can accomplish with the Differences Viewer:





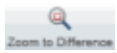
- "How to Run a Test with Mirroring" on page 308
- "How to Resolve Differences During a Run" on page 312



The following image shows the Differences Viewer.



<p>To access</p>	<p>Do one of the following:</p> <ul style="list-style-type: none"> ▶ Right-click a secondary machine with comparison errors in the Machines sidebar and select Differences Viewer. ▶ Select Results > Storyboard. Select an action where differences were found and in the action details area click the Show link in the Differences section.
<p>See also</p>	<p>"Rules Overview" on page 301</p>

User interface elements are described below:

UI Elements	Description
	<ul style="list-style-type: none"> ▶ Submit Defect. (Default) Opens the Smart Defect Settings Dialog Box (described on page 189), enabling you to automatically include defect scenario information in your defect. The defect summary includes a description of the difference. ▶ If you choose to attach a screen capture to your defect, screen captures of both machines are attached to the defect. ▶ When you submit a defect in the Differences Viewer, Sprinter also creates a rule to ignore this specific difference on this object, with its current properties.
	<p> Ignores the selected differences.</p> <p>When you create a rule to ignore a difference, Sprinter automatically recompares the secondary machine with the primary machine, to determine if the difference is no longer detected.</p> <p>Not available when you open the Differences Viewer from the Storyboard, Results, or the Sprinter Standalone Results Viewer.</p>
	<p>Opens the New Rule Dialog Box (described on page 345).</p> <p>When you create a rule to ignore a difference, Sprinter automatically recompares the secondary machine with the primary machine, to determine if the difference is no longer detected.</p> <p>Not available when you open the Differences Viewer from the Storyboard, Results, or the Sprinter Standalone Results Viewer.</p>
	<p>Opens the Rules Manager Dialog Box (described on page 347).</p>
	<p>Zooms the display in to the selected difference.</p>

UI Elements	Description
	Zooms the display out to 100%.
	Selects all the differences in the Differences List.
Differences List	The list of differences detected between the primary machine and the secondary machine. Select a difference in the list to perform an action on it.
<Difference display>	<p>The display of the difference. The difference is indicated in the display in a red box. In the case of a missing object there is no indication in the display where the object is missing.</p> <p>The difference display contains the following elements:</p> <ul style="list-style-type: none"> ▶ Maximize/Minimize. Expands the machine's display to fill the entire Differences Viewer window. Minimize returns the display to normal. ▶ Slider control. Zooms in and out on the display. ▶ Remote Desktop. (Secondary machines only) Opens a remote desktop connection to the secondary machine.
<Difference description>	A text description of the difference.

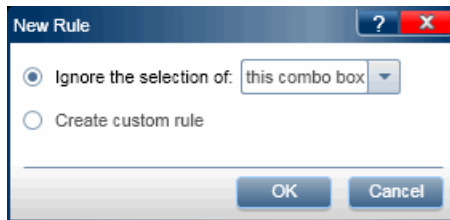
New Rule Dialog Box

This dialog box enables you to accept a pre-defined for the difference, or create a custom rule.

Tasks you can accomplish with the New Rule dialog box:

- "How to Resolve Differences During a Run" on page 312

The following image shows the New Rule dialog box.



To access	From the Differences Viewer , select a difference and click the New Rule button.
Important information	The options displayed in the dialog box are different depending on the type of difference detected.
See also	"Rules Overview" on page 301

Options when the object is found in one display and missing in another:

User interface elements are described below (variable text is shown in angle brackets):

UI Elements	Description
Ignore the <object name> <object type>	Ignore every occurrence of the specified object.

UI Elements	Description
Create custom rule	Opens the Rule Wizard (described on page 349).
Ignore all the objects in the area that contains the <object type> (the <area name> <area type>)	Ignore all the objects in the area where this specified object is located. Note: This option is displayed only in certain cases where the object that is missing is located within a container object, but that container object is not a window.

Options when a specific property value is different between machines

User interface elements are described below (variable text is shown in angle brackets):

UI Elements	Description
Ignore the <property name> of <object>	Defines when the property value that was different will be ignored. <ul style="list-style-type: none"> ▶ this <object name>. Ignore the property value for this specific object only. For example: Ignore the color of the OK button. ▶ all <object type>. Ignore the property value for all objects of the same type as this object. For example: Ignore the color of all buttons. ▶ all objects. Ignore the property value for all objects. For example: Ignore the color of all objects. <p>Note: This option is displayed only for the following properties that are common to all objects:</p> <ul style="list-style-type: none"> ▶ background color ▶ enabled state ▶ location ▶ size
Create custom rule	Opens the Rule Wizard (described on page 349).

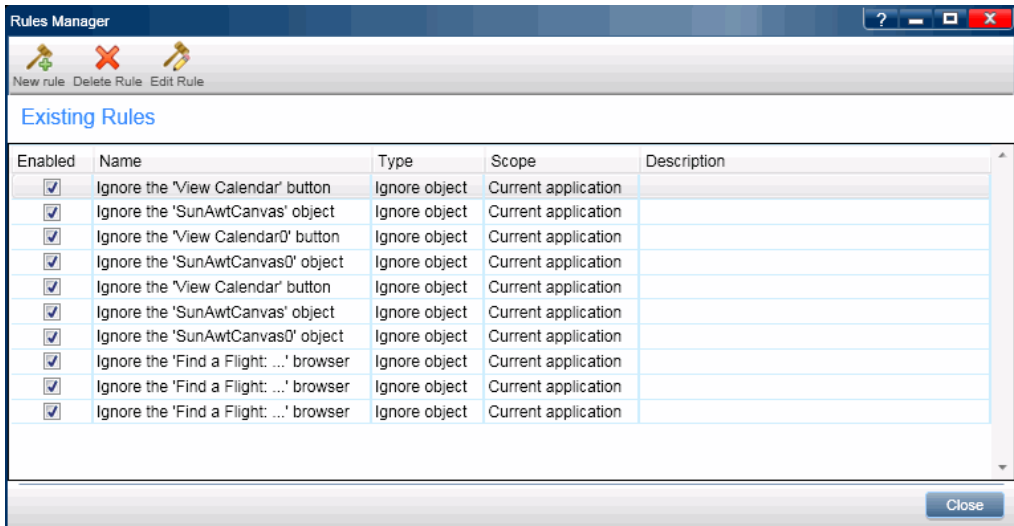
Rules Manager Dialog Box

This dialog box enables you to create, view, edit, and delete the rules for your application.

Tasks you can accomplish with the Rules Manager dialog box:




- "How to Resolve Differences During a Run" on page 312

The following image shows the Rules Manager dialog box.



To access	From the Machines sidebar or the Differences Viewer , click the View Rules button.
See also	"Rules Overview" on page 301

User interface elements are described below:

UI Elements	Description
 New rule	<p>Opens the Rule Wizard, enabling you to create a custom rule. For details, see "Rule Wizard - Rule Details Page" on page 349.</p>
 Delete Rule	<p>Deletes the selected rule. The rule will no longer be available depending on its scope, as defined in the Rule Wizard - Rule Details Page (described on page 349).</p>
 Edit Rule	<p>Opens the Rule Wizard for the selected rule, enabling you to edit the rule. For details, see "Rule Wizard - Rule Details Page" on page 349.</p>
<p>Existing Rules</p>	<ul style="list-style-type: none"> ➤ Enabled. Select the check box next to the rule to enable it for your run. ➤ Name. The name of the rule as defined in the Rule Wizard. ➤ Type. The type of rule. <ul style="list-style-type: none"> ➤ Ignore Property. Ignores a specific property of an object. ➤ Ignore Object. Ignores all objects of a specific type. ➤ Scope. When the rule is applied. <ul style="list-style-type: none"> ➤ Current Application ➤ All Applications ➤ Description. The description of the rule as defined in the rule wizard. <p>For more details on rule definitions and settings, see "Rule Wizard - Rule Details Page" on page 349.</p>

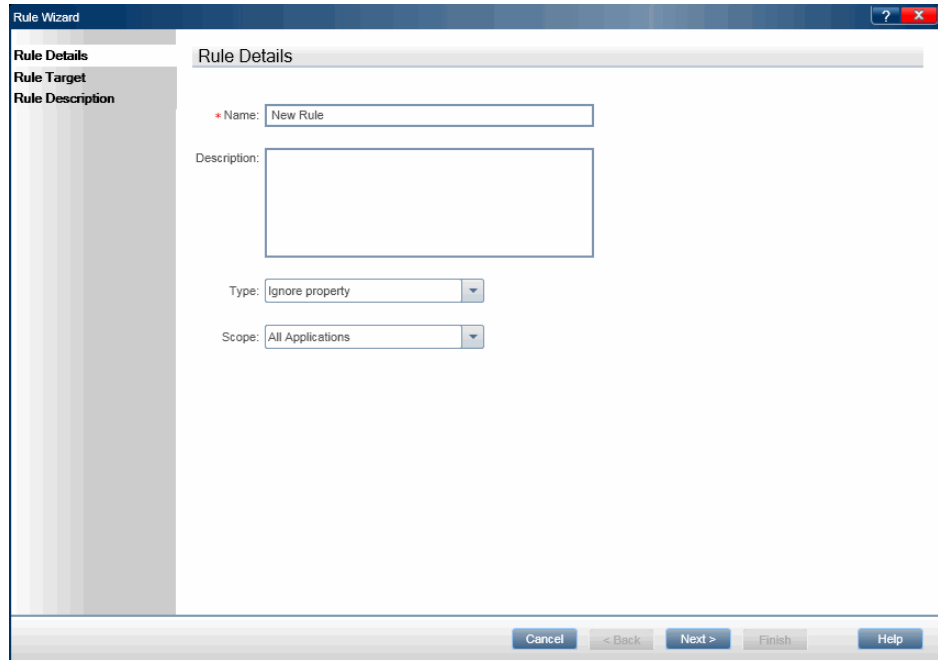
Rule Wizard - Rule Details Page

This wizard enables you to create a custom rule to resolve differences between machines in a test with mirroring.

Tasks you can accomplish with the Rules Wizard:

- "How to Resolve Differences During a Run" on page 312

The following image shows the Rules Wizard.



<p>To access</p>	<p>Use one of the following:</p> <ul style="list-style-type: none"> ► In the Differences Viewer > New Rule button > Create custom rule option. ► Start a run and click the View Rules button in the Machine sidebar. In the Rules Manager click the New Rule or Edit Rule buttons.
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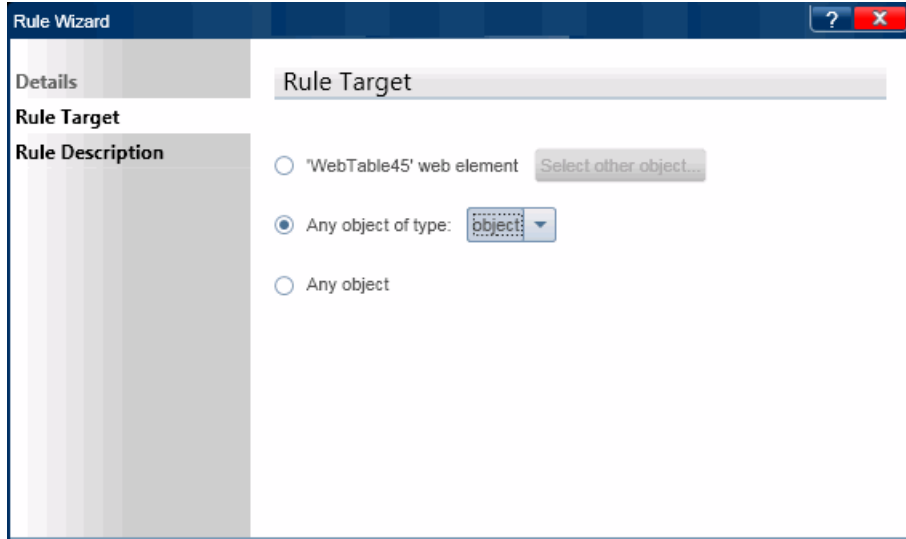
Wizard map	This wizard contains: Rule Details page > Rule Target Page > Rule Description Page
See also	"Rules Overview" on page 301

Descriptions of the user interface elements are available on the wizard page when you hover over them. The table below provides additional information for some of these elements:

UI Elements	Description
Type	<p>Determines what the rule will ignore.</p> <ul style="list-style-type: none"> ▶ Ignore property. Only differences in the specific property of the object will be ignored. ▶ Ignore object. All differences in the object will be ignored.
Scope	<p>Determines when the rule will apply.</p> <ul style="list-style-type: none"> ▶ All Applications. The rule will apply to all test runs. ▶ Current Application. The rule will apply to the application currently defined for the test only. Any tests configured to use the same application will use this rule.

Rule Target Page

This wizard page enables you to define the object to which your rule will apply.



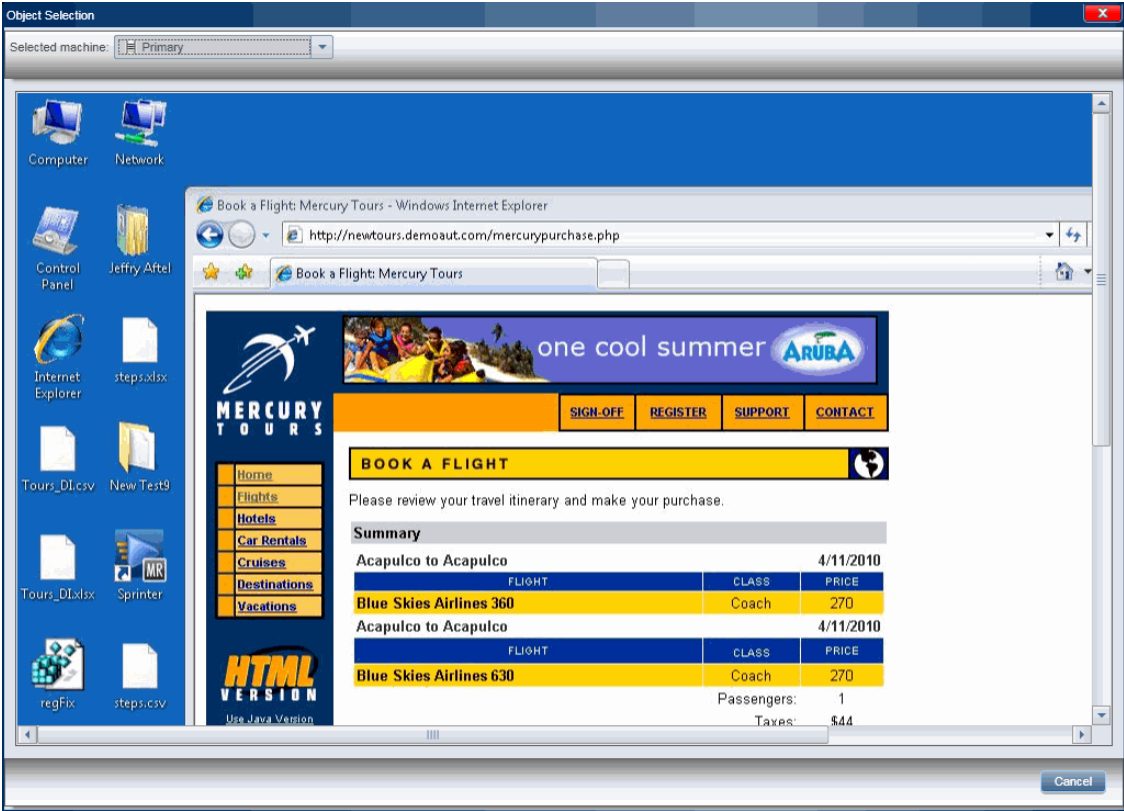
Wizard map	This wizard contains: Rule Wizard - Rule Details Page > Rule Target Page > Rule Description Page
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User interface elements are described below (variable text and unlabeled elements are shown in angle brackets):

UI Elements	Description
<p><object name> <object type> / Specific object</p>	<p>Define a specific object for which the rule will apply.</p> <ul style="list-style-type: none"> ▶ When you access the wizard from the Differences Viewer, the object on which the difference was found is automatically selected. <p>Click the Select other object button to open the Object Selection Window (described on page 353), and select a different object for the rule.</p> <ul style="list-style-type: none"> ▶ When you access the wizard by creating a new rule from the Rules Manager, no object is selected. Click the Select object button to open the Object Selection Window (described on page 353), and select an object for the rule.
<p>Any object of type <object drop-down box></p>	<p>Apply the rule to all objects of a specific type.</p>
<p>Any object</p>	<p>Apply the rule to all objects.</p>

Object Selection Window

This window enables you to define an object for your rule.



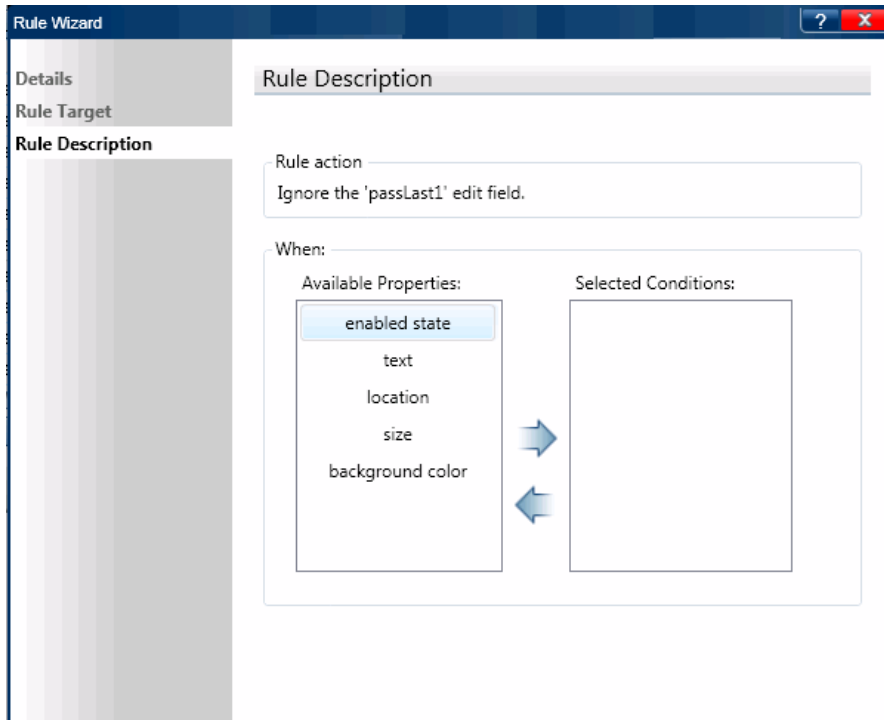
To access	In the Rules Wizard > Rule Target Page, click the Select other object button.
Relevant tasks	"Resolving Problems on and Unlocking Secondary Machines" on page 299
See also	"Rules Overview" on page 301

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Elements	Description
Select machine	Select the machine to display in the Display window.
<Display window>	Displays the selected machine. As you hover over the display, each object in the display is highlighted in red. Click on an object to select it for the rule.

Rule Description Page

This wizard page enables you to define when the rule will be applied and on which specific property.



Important information	The options displayed in the page are different depending on the selections in previous pages.
Wizard map	This wizard contains: Rule Wizard - Rule Details Page > Rule Target Page > Rule Description Page

User interface elements are described below:

UI Elements	Description
Rule action	<p>This area defines the specific action the rule will take. Its display depends on selections you made earlier in the wizard.</p> <ul style="list-style-type: none"> ▶ Ignore the <object name> <object type>. If you selected Ignore object in the Rule Details page, the rule action is set to ignore the object you selected in the Rule Target page. ▶ Select Properties to ignore. If you selected Ignore property in the Rule Details page, you need to select the properties you want the rule to ignore. Click the browse button <input type="button" value="..."/> to select from a list of properties for the object you selected in the Rule Target page. Press Enter to accept your selections.

UI Elements	Description
When	<p>This area defines the specific conditions under which the rule will be applied.</p> <p>Select properties and conditions to limit when the rule will be applied.</p> <ul style="list-style-type: none"> ▶ Available Properties. The list of properties that are available for the selected object. Select a property from the list and click the right arrow to move it to the Selected Conditions list. ▶ Selected Conditions. When you move a property to this list it is automatically set to apply the rule when the property is different between machines. You can create a more specific definition of the conditions under which the rule will apply, by clicking the browse button <input type="button" value="..."/>. For details on the selections available, see "Property Conditions" on page 357. <p>Note: You do not need to set any conditions in this area. If no conditions are set, the rule action will be applied based on your previous selections in the wizard with no additional limiting conditions.</p> <p>For example: Suppose these are your selections in the previous wizard pages:</p> <ul style="list-style-type: none"> ▶ In the Rule Details page - you selected Ignore Property. ▶ In the Rule Target page - you selected the Any object of type radio button and selected image. <p>If you do not set any conditions in the When area, the properties you selected in the Rule Action area will be ignored for all image objects.</p>

Property Conditions

The property conditions enable you to set a specific condition under which the rule will apply.

Choose condition for the location property

- Value in Primary = and value in Secondary =
- Value in Primary equals to value in Secondary
- Value in Primary is different from value in Secondary
- Value in Value in
- Value in Primary Value in Secondary
- Absolute difference between Primary and Secondary
- Absolute difference between Primary and Secondary

The selections available in the property conditions depend on the property you selected in the Selected Conditions section of the Rule Description page.

Some selections are available for integer values only, some for boolean values only, and some for text values only.

Some conditions can be a simple or **composite** statement. The simple statement compares the property value with a value that you set. To enable the composite statement, select the **Use composite statement** check box. This enables the second part of the statement so you can further refine the condition.

For integers, you can specify an absolute difference between the primary and secondary machine values. You can specify an actual value or a percentage. These options are useful when you only want to know the magnitude of the differences between the machines—you don't care if the value on one machine was greater than another.

Troubleshooting and Limitations

This section describes troubleshooting and limitations for mirroring.

Mirroring Test Preparation

- ▶ Actions on objects in desktop applications that are visible on the primary machine display, but are not visible on the secondary machine display, are not replicated.
- ▶ You cannot use a machine as a secondary machine in your run, if you are not the active user for that machine, and there is another active user on the machine. In this case, replication will not work for that machine.
- ▶ Sprinter prevents mirroring when the process user on the primary machine and the logged in user on the secondary machine are not the same. To allow mirroring without authentication, set the **ProtectSessions** flag in **Sprinter.exe.config**, located in the product's **bin** folder, to **false** on the secondary machine.
- ▶ See the list of **Prerequisites** in "How to Prepare a Test for Mirroring" on page 306.

Mirroring While Connected to ALM

- ▶ If you run Sprinter tests with mirroring while connected to an ALM server that runs on WebLogic or WebSphere, you must disable the default Basic Authentication filter to enable the test to run.
- ▶ Running Sprinter tests with mirroring while connected to an ALM server that uses a proxy is not supported.

General Limitations

- Mirroring may not work with all technologies.
- Secondary machines must have at least one address in ipv4 format. It may also include address in ipv6 format.
- The following actions performed on your application window are not replicated in secondary machines for Web applications:
 - Autocomplete of user credentials
 - Maximize
 - Minimize
 - Restore from task bar
 - Restore size
 - Move
 - Resize
- If a browser automatically enters a password, that user action is not learned by Sprinter.

Workarounds:

- Delete the automatically entered password, place the pointer focus on a different object, and re-enter the password manually.
- Disable automatic password completion in the browser.
- For some technologies, Sprinter does not learn the inner objects of tables. Sprinter will not detect differences between tables in this case.
- If you run Sprinter on a machine via a remote desktop connection and use the **3D mode** in the **Machines Viewer**, memory consumption on some operating systems can be very high.
- In this case, it is recommended that you minimize your use of the Machines Viewer 3D mode. User actions that are replicated on a secondary machine may not be displayed on an active remote desktop connection.

Workaround: Perform an action on the secondary machine via the remote desktop connection to refresh the display.

- ▶ When working with **Mozilla Firefox**, user actions are replicated only if you are logged in to the secondary machine with Administrator permissions.
- ▶ Creating a rule in the **Differences Viewer** will not mark a difference as **Resolved**, in the following situation:

Open the **Differences Viewer** for a secondary machine in your run that is not synchronized with your primary machine (their action numbers do not match) and create a rule for the difference.

In this situation, the rule will apply only to any future actions in your run, but the current difference will not be marked as **Resolved**.

Workarounds:

- ▶ Click **Ignore** in the **Differences Viewer** to ignore the current difference.
- ▶ Exit the **Differences Viewer** and select the **Skip** or **Sync** options in the **Machines** sidebar for the secondary machine.
- ▶ When running Sprinter with mirroring, using the **Color Picker** tool on machines with different screen resolutions or aspect ratios may not detect identical RGB for all machines.
- ▶ Actions may not replay properly if the primary and secondary machines have different screen resolutions. To ensure proper replay, make sure the resolutions on the machines are identical.
- ▶ When using Citrix, you can run Sprinter with mirroring on up to 10 secondary machines simultaneously.
- ▶ Sprinter may fail to communicate with a secondary machine which uses an empty password. The Health Console will show "Invalid username or password" and the details will indicate a user account restriction.

Workarounds:

- ▶ Define a user account with a non-empty password on the secondary machine, and configure Sprinter to communicate with this account.
- ▶ On the secondary machine, type **regedit** in the **Run** box to open the Registry Editor. Change the value of the following key:
HKLM\System\CurrentControlSet\Control\Lsa\limitblankpassworduse from 1 to 0.

A

Using Web Extensibility Packages

You can make use of Web Extensibility packages developed for QuickTest Professional to enable Power Mode to learn Web objects that are not supported out-of-the-box.

After you obtain an Extensibility package, install it by placing the files that it contains under the Sprinter installation folder as described in the sections below. The next time you open Sprinter, the Extensibility package appears in the list of technologies in the **Add/Edit Application** dialog box as a sub-node under the relevant technology. To work with an Extensibility package, select the package and its parent technology.

For the Extensibility packages to take effect, rerun the applications you are testing.

This chapter includes:

- Web Extensibility Package Content on page 362
- Installing a Web Extensibility Package on page 362

Web Extensibility Package Content

The Web Extensibility package consists of:

- **XML files.**
 - One test object file named **<Extensibility Package Name>TestObjects.xml**
 - One configuration file named **<Extensibility Package Name>.xml** (or **.cfg** for WPF and Silverlight)
- **JavaScript files (.js)**
- **Icon and Help files (Optional).**

Icons can be provided in the following file types: **.ico**, **.exe**, **.dll**.

Help files are provided as **.chm** files.

Installing a Web Extensibility Package

To install a Web Extensibility package, place the files that it contains in the locations specified below. If any of the sub-folders in the specified paths do not exist, create them.

Extensibility Package File	Location on Sprinter Machine
<Extensibility Package Name>TestObjects.xml Note: If there is more than one test object configuration file, place them all in the same folder.	<Sprinter Installation folder>\dat\Extensibility\Web
<Extensibility Package Name>.xml	<Sprinter Installation folder>\dat\Extensibility\Web\Toolkits\<Extensibility package name>

Extensibility Package File	Location on Sprinter Machine
<p>JavaScript files</p>	<p>The .js files can be located on the computer on which Sprinter is installed, or in an accessible network location. Their locations are specified in the <Extensibility Package Name>.xml file.</p> <p>Do the following:</p> <ol style="list-style-type: none"> 1 Search the XML file for lines that contain one of the following: file_name, default_imp_file, common_file, file_for_func_to_get_base_elem, JSLibrary. 2 Place the files referenced in those lines in the specified locations. <p>Note:</p> <ul style="list-style-type: none"> ➤ You can place the files in another location, and adjust the location specified in the XML file accordingly. ➤ If the specified location is not a full file system path, it is relative to the <Sprinter installation folder>\dat\Extensibility\Web\Toolkits\<Extensibility package name> folder. ➤ If the specified file location begins with INSTALLDIR, this refers to the Sprinter installation path.

Extensibility Package File	Location on Sprinter Machine
<p>Icon files (optional)</p>	<p>The files can be .dll, .exe, or .ico files, located on the computer on which Sprinter is installed, or in an accessible network location. Their locations are specified in the <Extensibility Package Name>TestObjects.xml file.</p> <p>Search the XML file for lines that contain IconFile, and then place the files referenced in those lines in the specified locations.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ You can place the files in another location, and adjust the location specified in the XML file accordingly. ▶ If the specified file location begins with INSTALLDIR, this refers to the Sprinter installation path.
<p>Help files (optional)</p>	<p>These are .chm files, which must be located on the computer on which Sprinter is installed. Their locations are specified in the <Extensibility Package Name>TestObjects.xml file.</p> <p>Search the XML file for lines that contain HelpFile, and then place the files referenced in those lines in the specified locations.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ You can place the files in another location, and adjust the location specified in the XML file accordingly. ▶ If the specified file location begins with INSTALLDIR, this refers to the Sprinter installation path.