



Rapise User Manual

Version 3.1

Inflectra Corporation

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1 Company & Copyright

The logo for Rapise, featuring the word "Rapise" in a bold, black, sans-serif font. The letter "i" is lowercase and colored orange. A thick orange horizontal bar is positioned above the "i". A registered trademark symbol (®) is located to the upper right of the word.

The logo for inflectra, featuring the word "inflectra" in a lowercase, black, sans-serif font. To the right of the word is a stylized orange and yellow flame-like graphic.

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2 Rapise User's Guide

2.1 About this Guide

The Rapise User's Guide is divided into four sections: Getting Started; Features; Dialogs, Views, and Menus; HowTos.

Getting Started

The **Getting Started** section is for new Rapise users. It has the following subsections:

1. An [Overview](#) of Rapise: what it's for and how to use it.
2. [Samples Index](#), where the sample projects included with Rapise are described.
3. [Tutorial: Windows Testing](#), a step-by-step tutorial for creating your first test with Rapise using a Windows desktop application.
4. [Tutorial: Web Testing](#), a slightly more advanced tutorial in using Rapise to test a web page.
5. [Tutorial: Testing REST Web Services](#), a tutorial in using Rapise to test a RESTful web service API.
6. [Tutorial: Testing Adobe Flex Application](#) - a tutorial explaining how to use Rapise to test an Adobe Flex application
7. [Tutorial: Mobile Testing](#) - a tutorial explaining how to use Rapise to test a mobile application (in this case using Android)
8. [Tutorial: Exploratory Testing](#) - a tutorial explaining how to use Rapise to do exploratory [manual testing](#).

Features

The features of Rapise are many. The features have been designed to make all aspects of test automation as easy as possible.

Most of the features of Rapise fall into one of five categories:

1. Building test scripts with little or no manual scripting.
2. Reading and interpreting results and reports.
3. Additional features and capabilities for sophisticated testing.
4. Writing more involved or complicated tests using scripting.
5. Extending Rapise to learn new or extended libraries of capabilities.

Depending on the application set being tested, not all of these features are necessarily needed for every situation.

For each feature, this document attempts to present:

1. The reason you might use a given feature.

2. A summary of the basic value of the feature.
3. An overview of how the feature works from the perspective of using it.
4. At least one useful sample that demonstrates how to use the feature.

Dialogs, Views, and Menus

This section details the Rapise GUI. Each subsection describes the function of a particular Dialog, View, or Menu. The purpose and consequences of all buttons, options, lists, and check boxes are listed.

How-Tos

This section focuses on specific tasks that a Rapise user might want to accomplish.

2.2 Glossary

This glossary presents a list of terms and their definitions as they are used in this guide.

API - Application Programming Interface

AUT - Application Under Test

DOM - Document Object Model

GUI - Graphical User Interface

GWT - Google Web Toolkit

IDE - Integrated Development Environment

JSON - JavaScript Object Notation

REST - REpresentation State Transfer

SOAP - Simple Object Access Protocol

UI - User Interface

XML - eXtensible Markup Language

YUI - Yahoo! User Interface (library)

2.3 Getting Started

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1. An [Overview](#) of Rapise: what it's for and how to use it.
2. [Samples Index](#), where the sample projects included with Rapise are described.
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5. [Tutorial: Testing REST Web Services](#), a tutorial in using Rapise to test a RESTful web service API.

6. [Tutorial: Testing Adobe Flex Application](#) - a tutorial explaining how to use Rapise to test an Adobe Flex application
7. [Tutorial: Mobile Testing](#) - a tutorial explaining how to use Rapise to test a mobile application (in this case using Android)
8. [Tutorial: Exploratory Testing](#) - a tutorial explaining how to use Rapise to do exploratory [manual testing](#).

2.3.1 Overview

Why Use Rapise?

Rapise was created to make software testing easy and manageable without being prohibitively expensive.

Rapise was made easy for software test professionals, developers and professionals concerned with quality assurance to simply and quickly write a test to cover an application, a web page, or a single bug to prevent regression.

Make Testing Fast and Repeatable

Consider for a moment what it is you do to test your software today. Most likely it has some for of **user interface (UI)**, probably a **graphic user interface (GUI)**. So you will run the application, click around, perhaps in some way that gives you complete coverage of all the features (but probably not if it's a large application or web). Then you will login, if appropriate, and you will fetch some data and modify some data, test some more controls - edit boxes, buttons, drop-down lists, links, etc. If you have just fixed a bug then you will focus on the area of the application where the bug occurred. You will enter data that causes the bug, or go through the control sequence that causes the bug.

Next time you come to fix a bug in this application, you will **do the same thing again**.. Once again, you will focus on the area where the bug was.

Rapise presents you with **two methods for capturing specific tests**, and it will keep the test as a solo test or as part of a suite of tests that help you to qualify the application for release or a more formal QA process. Rapise is designed to allow the developer or the test professional to add new tests quickly and so to build up a library of tests.

There are two methods for capturing tests:

- [Record](#) and [playback](#). In this type of test creation, you turn on the recorder and perform the actions needed to execute the test. Each test is saved to its own directory. A test consists of a javascript [test script](#) (.js), a meta-data file (*.sctest), and any number of additional supplementary scripts and data files. The test script is automatically generated after recording; simple modifications are required to make the test [data driven](#). [Checkpoints](#) can be added during recording, or manually into the script.
- [Object-driven learning](#). Rapise considers each item on the page or within the application window to be an object. Examples are buttons, edit boxes, links, etc. To create a test using this technique, you have Rapise "[learn](#)" each control, and it will keep a miniature [database](#) of all the controls you "teach" it. To create a test, you write a script to instruct Rapise to perform a particular action on each object in the prescribed order. As any point along the way, the script you write can instruct Rapise to look inside an object and read its data and compare that value or content with what you expect it to be.

There are many methodologies with their own recommended approaches for designing testing strategies to ensure that application coverage is complete and meets the business requirements specification of the work being accomplished. Inflectra in general, recommends that you [create a new test](#) for each software requirement (to track progress) and for each issue in your issue tracking system (to test for regressions).

Integration with Test Management

To help you manage the requirements and issue tracking processes and to ensure that you have adequate **test coverage**, Inflectra recommend that you use Rapise with a **test management system** such as [SpiraTest](#). That way you can maintain all your requirements, test cases and defects in a single place.

Once you have created the test, you can [playback](#) your test from within Rapise, run it from the [command-line](#) or execute it remotely using RapiseLauncher in conjunction with [SpiraTest](#). A [report](#) detailing the outcome of each step of the test will be automatically generated.

[Recording](#), [playback](#), the [report](#), and the Rapise [engine](#) are all customizable.

2.3.2 Samples Index

Rapise includes several sample tests that you are free to read, modify, copy and use. They are located in: *RapiseDataDirectory\Samples*. Unless you specified otherwise, the *RapiseDataDirectory* will be:

C:\Users\Public\Documents\Rapise.

The sample tests are described below.

ActiveX

These samples demonstrate the testing of Microsoft ActiveX / COM controls used in Visual Basic applications including the MSComCtl library. The samples include the Microsoft FlexGrid Control, MS Common Toolbar Control, Microsoft Tabbed Dialog Control, TabStrip, and Microsoft Windows Common Controls 6.0 [MSCOMCTL.OCX].

AdobeFlex3

This is a set of regression tests for [Adobe Flex](#) 3.x controls.

AdobeFlex4

This is a set of regression tests for [Adobe Flex](#) 4.x controls.

AnalogRecorder

This sample demonstrates [Analog Recording](#).

FarPoint

This sample script demonstrates using the FarPoint library to test the FarPoint SpreadSheet Control.

HTML5

This sample tests a HTML5 application. This sample demonstrates the capabilities of the **HTML5** DOM browser library. The application under test contains various HTML5 specific controls, such as: color, date, datetime, email, range, progress, etc.

The sample is also available online at <http://www.libraryinformationsystem.org/Html5/AUTHHTML5.htm>

Java

This sample tests a Java AWT/SWING application. This sample demonstrates the capabilities of the **Java** library. The application under test contains various standard GUI controls, such as: button, edit, tree, combo box, menu, etc.

Java SWT

This sample tests a Java SWT/RCP application. This sample demonstrates the capabilities of the **SWT** and **UIAutomation** libraries. The application under test contains various standard GUI controls, such as: button, edit, tree, combo box, menu, etc.

jQuery-UI

This sample illustrates using the jQuery HTML DOM extension library that allows you to record/playback test scripts against web applications using widgets from the jQuery Javascript library framework.

Library Information System

These tests can be used to test the sample library information system web application hosted at <http://www.libraryinformationsystem.net>. This is the same sample application used by [SpiraTest](#) and illustrates how you can use [SpiraTest](#) to manage and execute automated Rapise tests. A copy of these tests is also available in new installations of [SpiraTest](#) v3.2+.

Managed

This sample tests a .NET 2.0 application. This sample demonstrates the capabilities of the **Managed** library. The application under test contains various standard GUI controls, such as: button, edit, tree, combo box, grid, listbox, listview, menu, etc.

QtFramework

This sample tests a sample [QT Framework](#) cross-platform application. This sample demonstrates the capabilities of the QtFramework library. The application under test contains various standard Qt widgets, such as: button, edit, tree, combo box, etc.

Silverlight

This sample tests a Silverlight web application. This sample demonstrates the capabilities of the **UIAutomation** library. The application under test contains various standard GUI controls, such as: button, edit, tree, combo box, menu, etc.

SimulatedObject

This sample opens **MS Paint** and draws on its canvas. It uses [Simulated Objects](#) and several related methods: **DoMouseMove(X,Y)**, **DoLButtonDown()**, **DoLButtonUp()**, and **DoSendKeys(text)**.

SampleATM

This sample tests an **MFC** application. You will also learn how to organize your test script in modular form, how to launch the AUT from your test script and how to execute various actions on GUI controls.

UsingCustomStrings

This sample demonstrates how to integrate Rapise tests with other tools using [Custom Strings](#). **TestFinish()** is used to analyze and save test results. For more details, see: [Custom Strings](#).

UsingDatabase

This example shows how you can use a relational (SQL) **database** to create [Data-Driven](#) tests. This script reads test case data from a spreadsheet ADO datasource to test **Calculator**.

UsingDLLHandlerManaged

This sample shows how to [unit test managed DLLs](#). You'll see how to use methods **CreateClassInstance()** and **InvokeMember()**.

UsingDLLHandlerUnManaged

This sample shows how to [unit test unmanaged DLL code](#). You'll learn how to register (**UserWrap.Register**) and execute (**UserWrap.ShellExecute**) a function.

UsingImageCheckPoint

This example shows how to create image [checkpoints](#).

UsingInclude

This sample demonstrates two ways to include external files/functions:

1. **eval(g_helper.Include(...))**: include a file with utility functions.
2. **SeSRunJSScript(...)**: include and execute external function with its own object map.

UsingMSAccess, UsingMSExcel, UsingMSWord

These samples demonstrate how you can work with **Microsoft Word**, **Excel**, and **Access** from scripts. You'll learn how to test applications that expose a [COM interface](#).

UsingMobile

These samples demonstrate how to do the [testing of mobile devices](#) running either [Apple iOS](#) or [Android](#).

UsingOCR

This sample demonstrates usage of the Optical Character Recognition (OCR) functionality.

UsingRegistry

This sample demonstrates usage of the windows registry. The registry is queried to determine the OS (XP/2003/Vista, etc) and owner.

UsingReporting

This sample illustrates various [reporting](#) features:

1. Regular reporting (**Tester.Assert**, **Tester.Message**)
2. Custom attributes (**Tester.SetReportAttribute**, **Tester.ResetReportAttribute**)
3. Stacked attributes (**Tester.PushReportAttribute**, **Tester.PopReportAttribute**)
4. Nested Tests (**Tester.BeginTest**, **Tester.EndTest**)
5. Inserting Links, Text and Images into the report (tags parameter, **SeSReportText**, **SeSReportLink**, **SeSReportImage**)

UsingSpreadSheet

This example shows how you can use **Excel** spreadsheets to create [Data-Driven](#) tests. This script reads test case data from an XLS spreadsheet to test **Calculator**.

UsingXML

This sample demonstrates how to read, modify and write XML files.

WebServicesREST

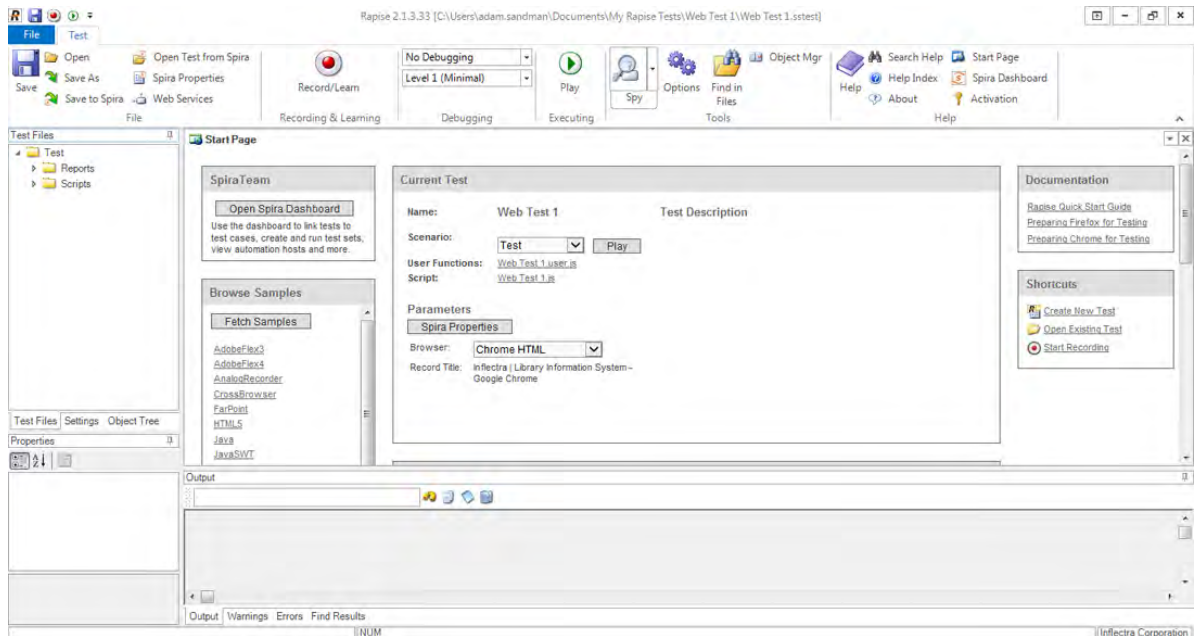
This sample demonstrates how you can use the Rapise [Web-Services](#) module to write and execute automated web service tests against an HTTP [RESTful web service](#).

2.3.3 Tutorial: Web Testing

In this section, you will learn how to record and execute a Rapise script against a web application. We will be using a demo application called **Library Information System**. Our test will be simple. It will log on to the library catalog, navigate to the main menu, and click on all of the menu options to make sure the links are working.

1. Open Rapise

Go to **Start > All Programs > Inflectra > Rapise**. The following window should appear.



2. Open the AUT (Application Under Test)

Open up Internet Explorer. You will find it in **Start > All Programs > Internet Explorer**. In Internet Explorer, navigate to: <http://www.libraryinformationsystem.org>:

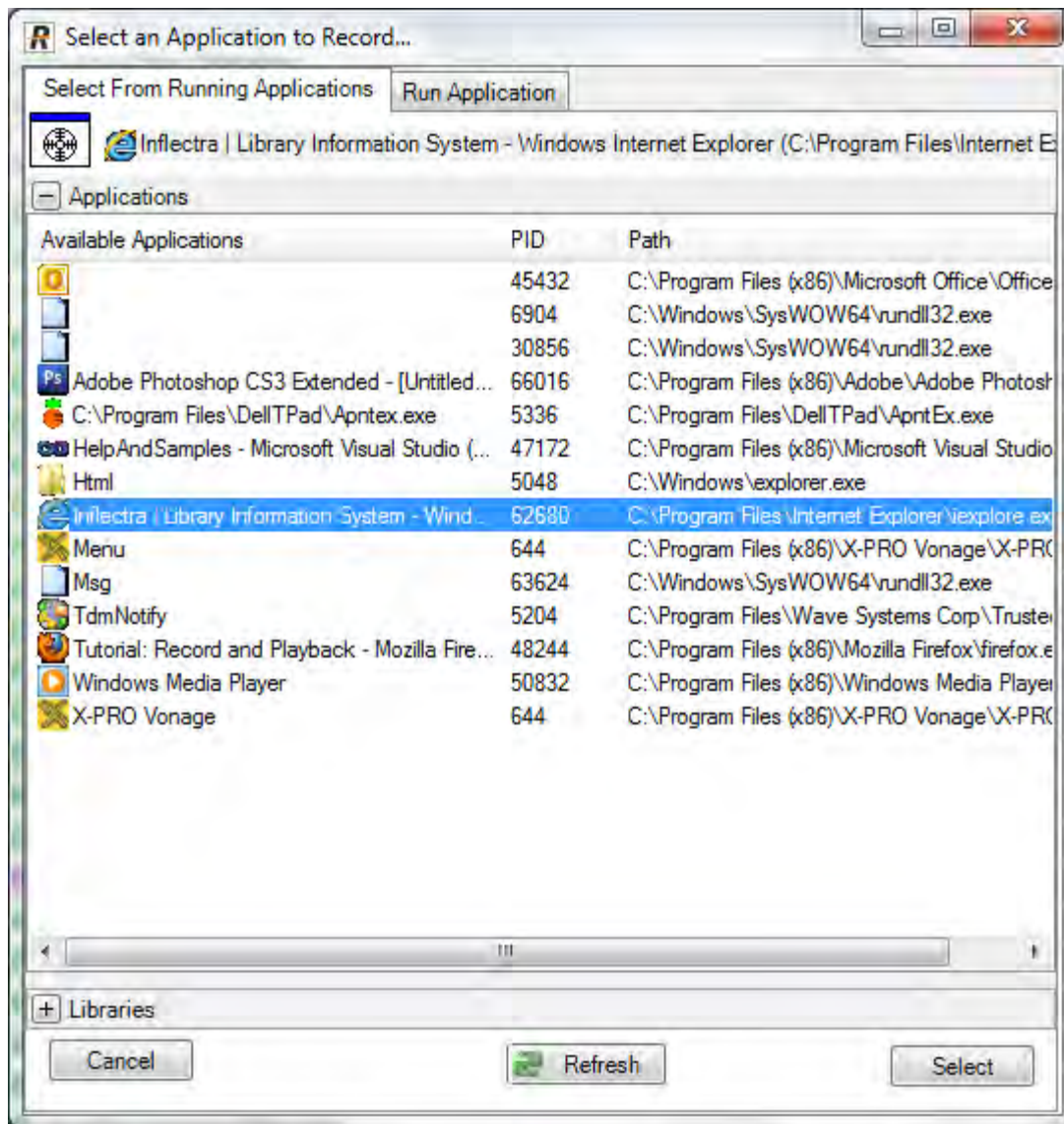


3. The Select an Application to Record Dialog

In the Rapise window, press the **Record/Learn** button on the Ribbon.



The [Select an Application to Record... Dialog](#) (SAR dialog) will open.



There are two sections to the **SAR dialog**. In the bottom section, you select which Rapise library will be used during the recording session. Because we will be recording our interactions with Internet Explorer, make sure that the **Internet Explorer HTML** library is checked. No other libraries should be selected. See below:

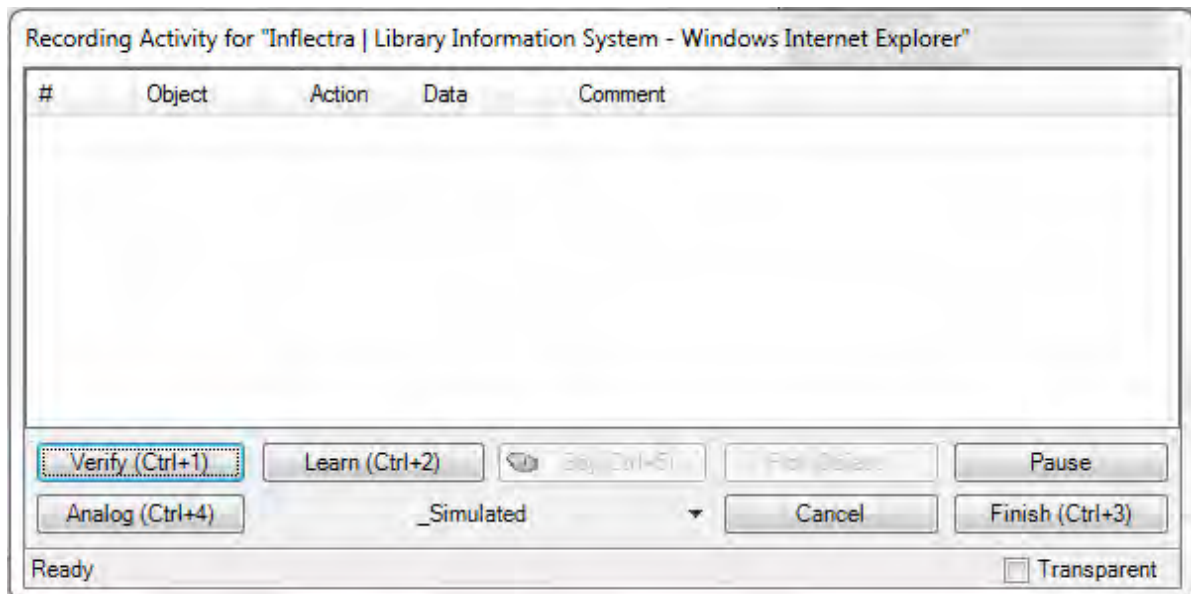
Library	Description
<input type="checkbox"/> Auto	Detect library automatically
<input type="checkbox"/> .NET	.NET 1.1, 2.0, 3.0, 3.5 with Accessibility
<input checked="" type="checkbox"/> Internet Explorer HTML	HTML DOM-based recorder for Internet Explorer
<input type="checkbox"/> Firefox HTML	HTML DOM-based recorder for Mozilla Firefox
<input type="checkbox"/> Generic	Generic library contains basic definitions for most commo...

In the top section of the SAR dialog, we choose which application to record. Scroll down the available

applications and click once on **Inflectra | Library Information System**, so that it is highlighted. Now, press the **Select** button near the bottom right of the dialog.

Available Applications	PID	Path
	45432	C:\Program Files (x86)\Microsoft Office\Office
	6904	C:\Windows\SysWOW64\rundll32.exe
	30856	C:\Windows\SysWOW64\rundll32.exe
Adobe Photoshop CS3 Extended - [Untitled...	66016	C:\Program Files (x86)\Adobe\Adobe Photosh
C:\Program Files\DellTPad\Aprtex.exe	5336	C:\Program Files\DellTPad\AprntEx.exe
HelpAndSamples - Microsoft Visual Studio (...)	47172	C:\Program Files (x86)\Microsoft Visual Studio
Html	5048	C:\Windows\explorer.exe
Inflectra Library Information System - Wind...	62680	C:\Program Files\Internet Explorer\iexplore.ex
Menu	644	C:\Program Files (x86)\X-PRO Vonage\X-PRO
Msg	63624	C:\Windows\SysWOW64\rundll32.exe
TdmNotify	5204	C:\Program Files\Wave Systems Corp\Truste
Tutorial: Record and Playback - Mozilla Fire...	48244	C:\Program Files (x86)\Mozilla Firefox\firefox.e
Windows Media Player	50832	C:\Program Files (x86)\Windows Media Playe

The [Recording Activity Dialog](#) (RA dialog) will appear:



The **RA dialog** has a grid. As you interact with the sample Library Information System program, the grid will automatically populate with your actions.

4. Recording

Let's begin creating the test. On the library information system login page, click on the **Log In** link in the top-right of the screen.

LIBRARY INFORMATION SYSTEM [Log In]

Home Book Management Author Management

LOG IN

Please enter your username and password:

Account Information

Username:

Password:

Keep me logged in

Log In

In the username text box, type *librarian*

Press the tab key. You'll notice that the **RA dialog** has changed. Your actions, clicking Log-In and entering a username, are listed in the grid:

Recording Activity for "Inflectra | Library Information System - Windows Internet Explorer"

#	Object	Action	Data	Comment
1	Log In	Click		Click on Log In
2	Username:	SetText	librarian	Set Text librarian in Username:

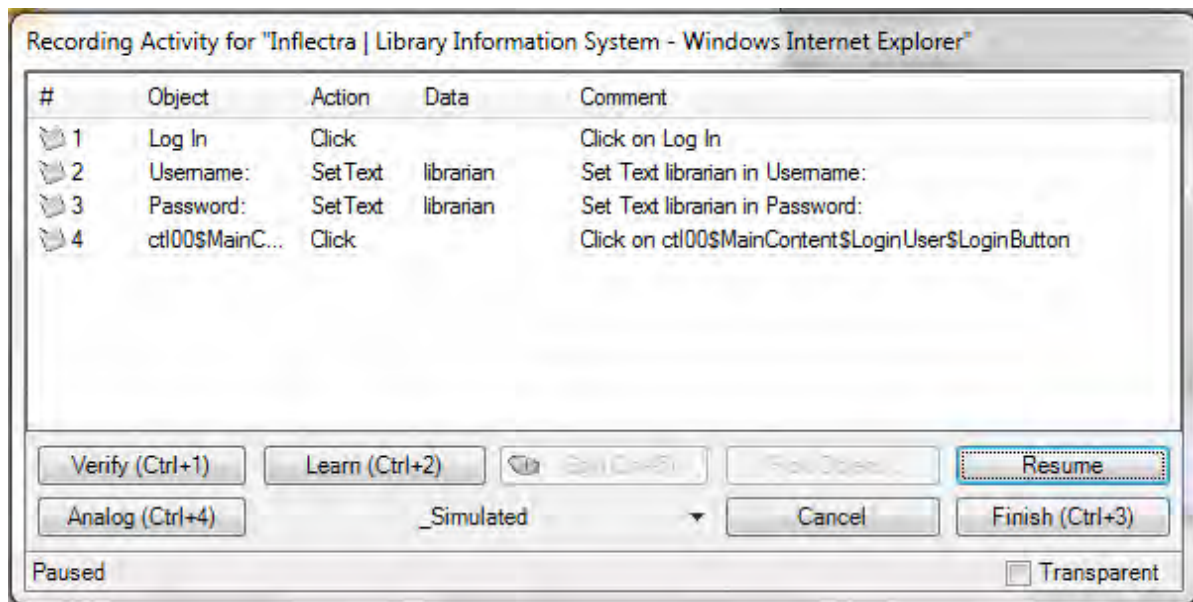
Verify (Ctrl+1) Learn (Ctrl+2) Get On (F2) Pause (F5) Resume

Analog (Ctrl+4) _Simulated Cancel Finish (Ctrl+3)

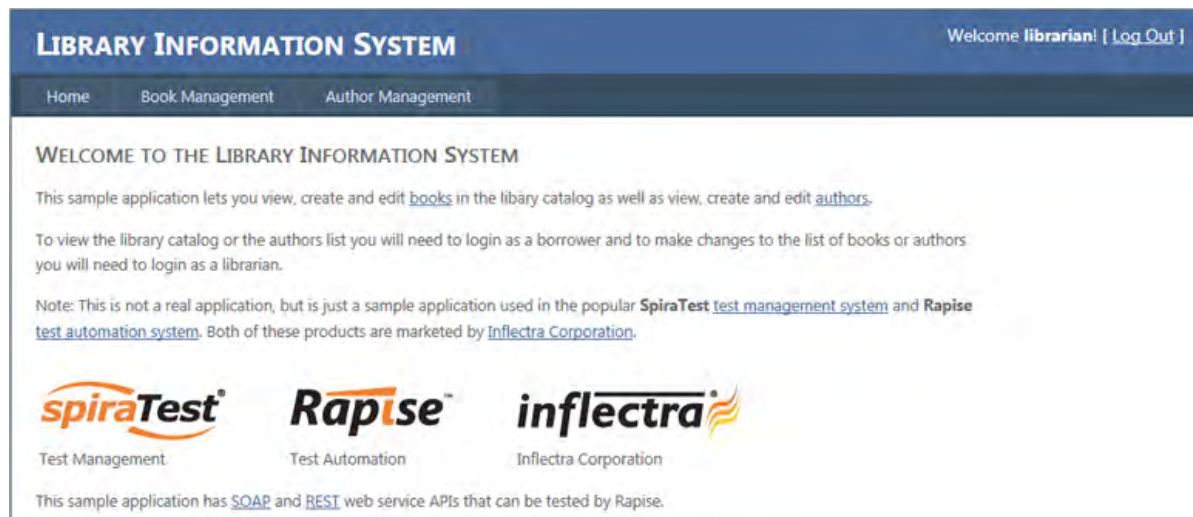
Paused Transparent

The password for user *librarian* is also *librarian*. Type the password in and then press the **Log-In** button.

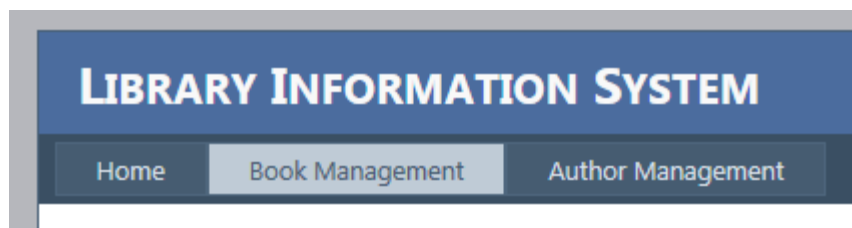
Two more rows should appear in the **RA dialog**: one to represent the password entry, and one to represent the button click:



You should now be on the main menu of the Library Information System with the user's name listed in the top-right:



Click the **Book Management** button. It is highlighted in the next screenshot:



You should now be on the Book Management page (see the below image). Click the **Home** button to go

back to the main menu.

LIBRARY INFORMATION SYSTEM Welcome **librarian!** [[Log Out](#)]

Home Book Management Author Management

BOOK MANAGEMENT

The following books exist in the system: [\(Create new book\)](#)

ID	Name	Author	Genre	Edit
1	Hound of the Baskervilles	Arthur Conan Doyle	Murder & Mystery	Edit
2	The Scowrers	Arthur Conan Doyle	Murder & Mystery	Edit
3	Amsterdam	Ian McEwan	Contemporary Fiction	Edit
4	Saturday	Ian McEwan	Contemporary Fiction	Edit
5	The Comfort of Strangers	Ian McEwan	Contemporary Fiction	Edit
6	Chesil Beach	Ian McEwan	Contemporary Fiction	Edit
7	Atonement	Ian McEwan	Historical Fiction	Edit
8	Bleak House	Charles Dickens	Historical Fiction	Edit
9	Oliver Twist	Charles Dickens	Historical Fiction	Edit
10	Nicholas Nickleby	Charles Dickens	Historical Fiction	Edit
11	David Copperfield	Charles Dickens	Historical Fiction	Edit
12	The Pickwick Papers	Charles Dickens	Historical Fiction	Edit
13	Death on the Nile	Agatha Christie	Murder & Mystery	Edit
14	Betrams Hotel	Agatha Christie	Murder & Mystery	Edit

Click the **Create new book** link:

BOOK MANAGEMENT

The following books exist in the system [\(Create new book\)](#)

You should now be on the Create New Book page (see image below). Click the **HOME** button to go back to the main menu.

LIBRARY INFORMATION SYSTEM Welcome **librarian!** [[Log Out](#)]

Home Book Management Author Management

CREATE NEW BOOK

Please enter the book information and click Insert:

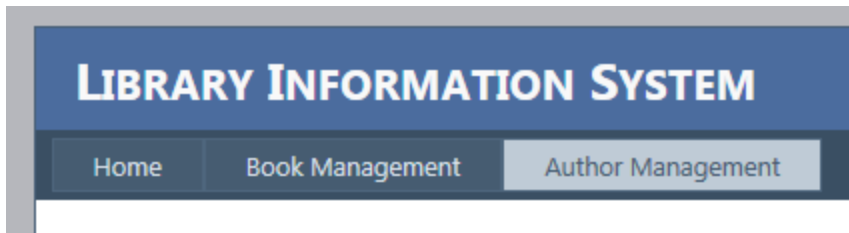
Book Information

Name:

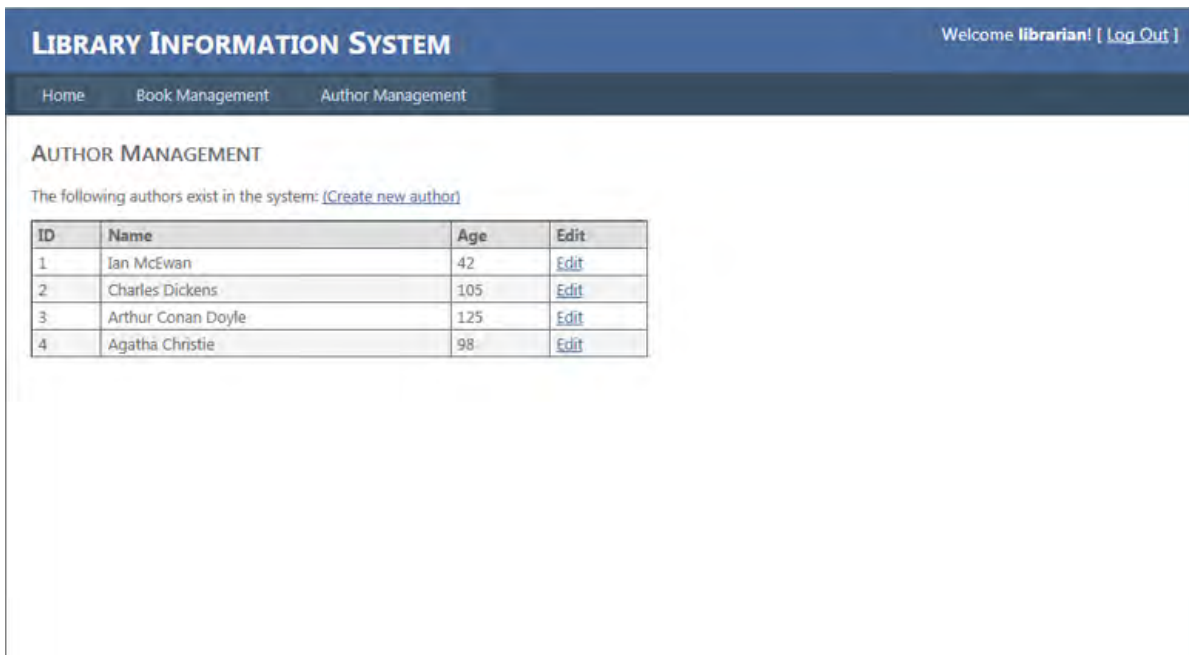
Author:

Genre:

Now, click the **Author Management** button:



You should now be on the Author Management page (see image below):



Click the **Create New Author** link:

AUTHOR MANAGEMENT

The following authors exist in the system [\(Create new author\)](#)

ID	Name	Age	Edit
1	Ian McEwan	42	Edit
2	Charles Dickens	105	Edit
3	Arthur Conan Doyle	125	Edit
4	Agatha Christie	98	Edit

You should now be on the Create New Author page (see below). Click the **Home** button to go back to the main menu.

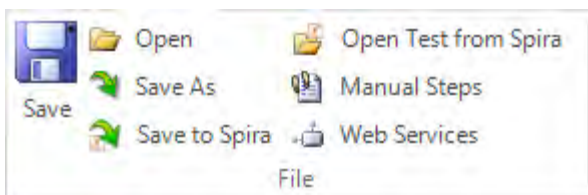
The screenshot shows the 'LIBRARY INFORMATION SYSTEM' interface. At the top right, it says 'Welcome librarian! [Log Out]'. Below the header is a navigation bar with 'Home', 'Book Management', and 'Author Management'. The main content area is titled 'CREATE NEW AUTHOR' and contains the instruction 'Please enter the author information and click insert:'. Underneath is a section labeled 'Author Information' with two input fields: 'Name:' and 'Age:'. At the bottom of this section are two buttons: 'Insert' and 'Cancel'.

At this point, there should be 11 rows in the RA dialog grid.

You are now back on the Main Menu. Click **Log Out** (top-right).

The screenshot shows the 'LIBRARY INFORMATION SYSTEM' main menu. At the top right, it says 'Welcome librarian! [Log Out]'. Below the header is a navigation bar with 'Home', 'Book Management', and 'Author Management'. The main content area is titled 'WELCOME TO THE LIBRARY INFORMATION SYSTEM' and contains the following text: 'This sample application lets you view, create and edit [books](#) in the library catalog as well as view, create and edit [authors](#). To view the library catalog or the authors list you will need to login as a borrower and to make changes to the list of books or authors you will need to login as a librarian. Note: This is not a real application, but is just a sample application used in the popular [SpiraTest test management system](#) and [Rapise test automation system](#). Both of these products are marketed by [Inflectra Corporation](#).' Below the text are three logos: 'spiraTest' (Test Management), 'Rapise' (Test Automation), and 'inflectra' (Inflectra Corporation).

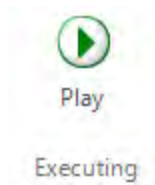
To end the recording session, you can either press **CTRL+3** or press the **Stop** button on the Record dialog. End the recording session now. You will see a script created from your recording session in the Rapise window. Let's save our test. Press the **Save** button at the top left of the Rapise window.



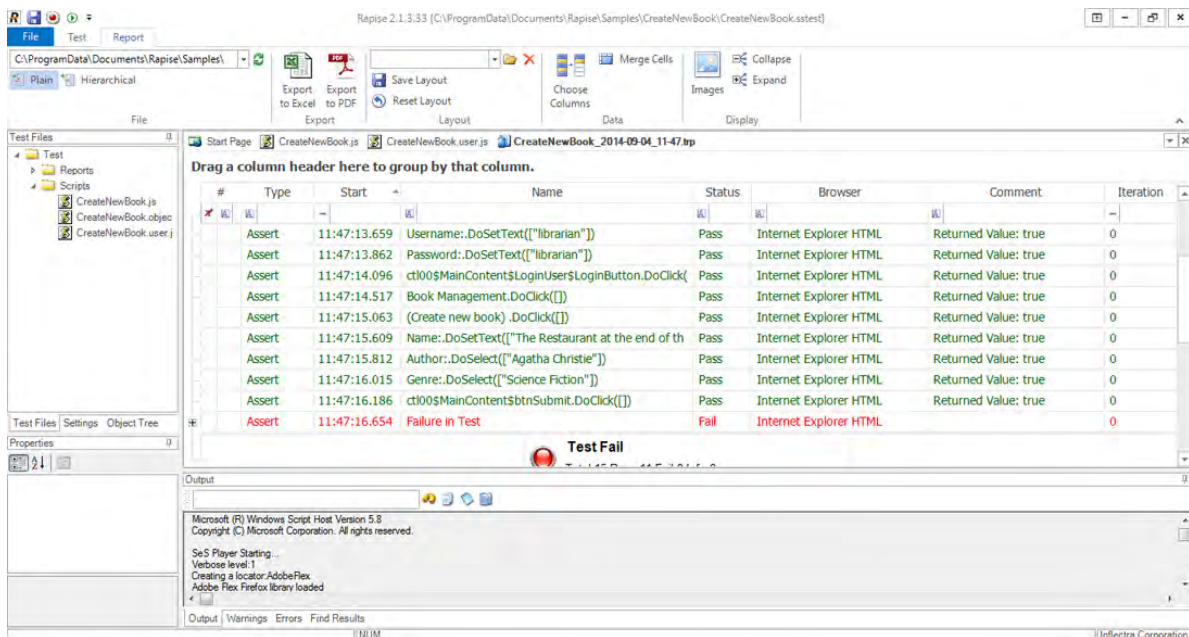
5. Playback

Let's execute the test we just created. First, close Internet explorer. Rapise will open a new instance of Internet Explorer to the correct url (www.libraryinformationsystem.org) when the test begins.

To execute the script, press the Play button at the top middle of the Rapise window.



After execution, a screen like the one below will appear. Each row represents a step in the test. The rows with green text are steps which passed, whereas the rows with red text are the steps which failed.



For more information on the report, see [Automated Reporting](#).

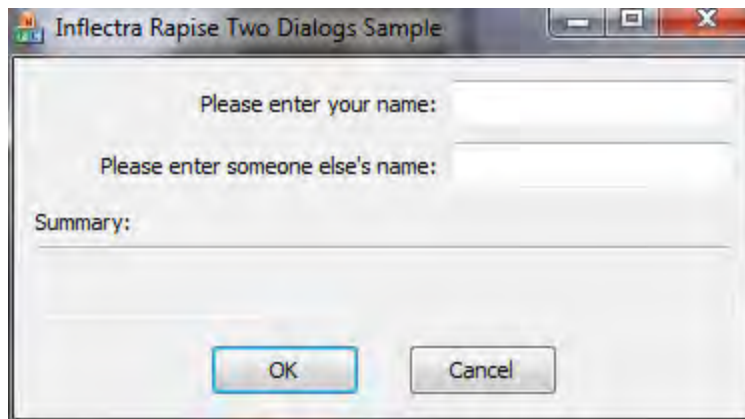
2.3.4 Tutorial: Windows Testing

This section outlines the usage of Rapise for testing a simple Windows Desktop [Application Under Test \(AUT\)](#).

Please run the application now. You will find it in the samples directory where you installed Rapise.

By default, that will be `c:\Users\Public\Documents\Rapise\Samples\TwoDialogs\TwoDialogs.exe`.

You will see the following:



Please run the application a few times and observe its behaviour. If you press the OK button with the first edit box empty, the application will complain and return you to the dialog box.

If you put text in the first edit box but not the second, you will be shown a single line of text in a read-only edit box..

If you enter text in the second edit box as well as the first, pressing OK will put two lines of summary information in the read-only edit box.

An adequate testing strategy for this over-simple application might be to:

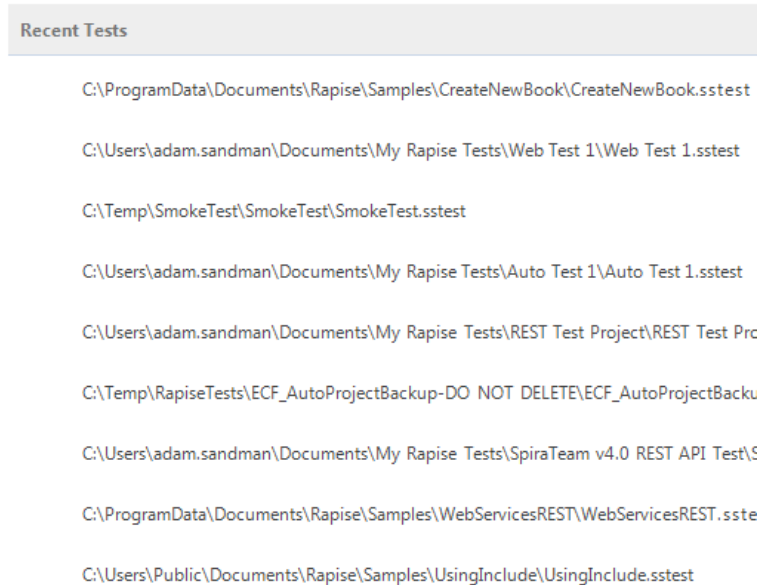
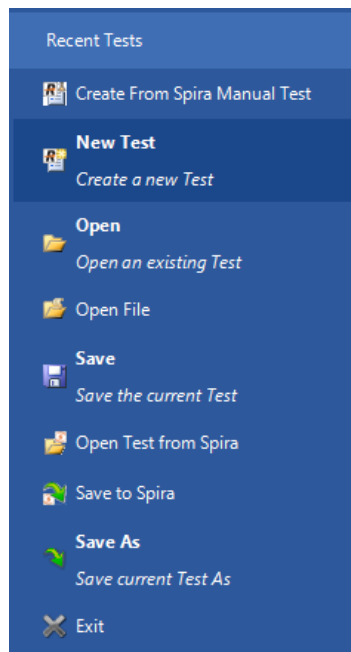
1. Put data in the first text box but not the second, and verify that the summary information is correct.
2. Press the OK button with no data in either text box, and verify that a message box is displayed.
3. Verify that if the success "Thank You" message is displayed the edit box input fields are cleared (but not the summary information).

If at this point you do not understand what the application is supposed to do, or the application is not behaving as described here, please contact [support](#) and clarify the details before proceeding.

Now, let's use Rapise to implement the first of these tests.

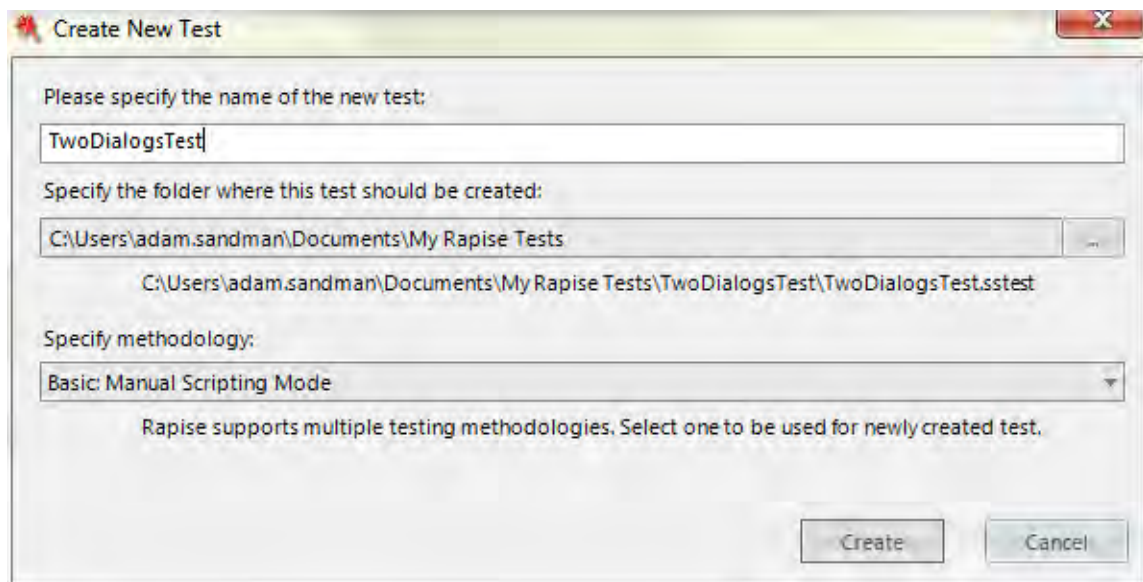
Step 1. Run the TwoDialogs application and leave it in its default start state.

Step 2. Start Rapise and make the window a conveniently large size. Click on the **File** button (top left). Choose the first option there, "New Test."

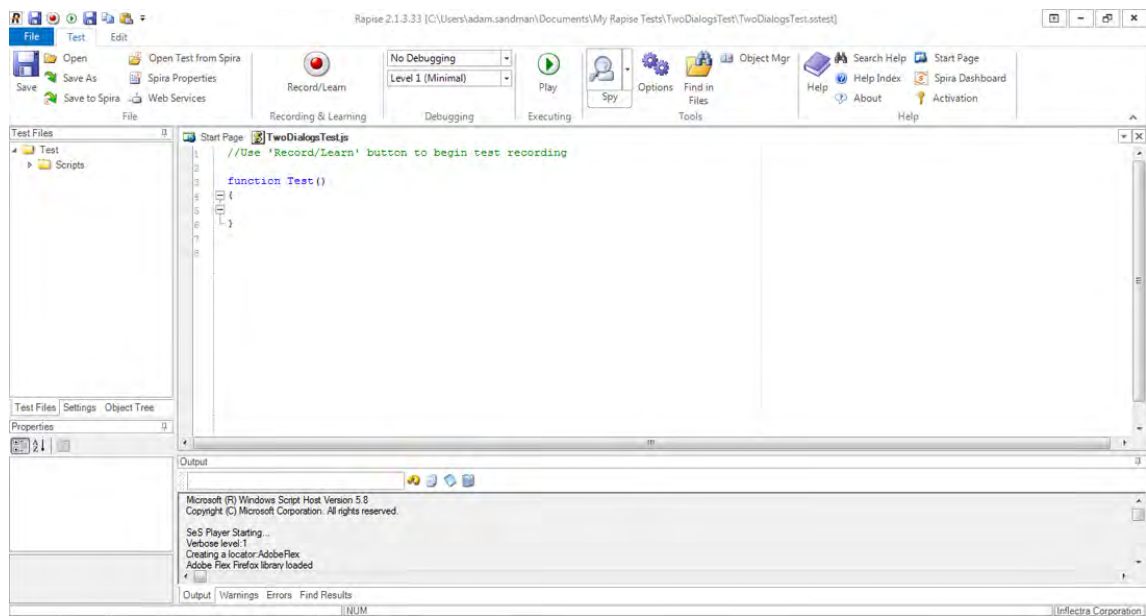


Step 3. Navigate to the desired path using the "..." button on the "Create New Test" dialog.

Leave the "Use Methodology" as "Basic" for now.
Press the "Create" button.



You will now see the following:

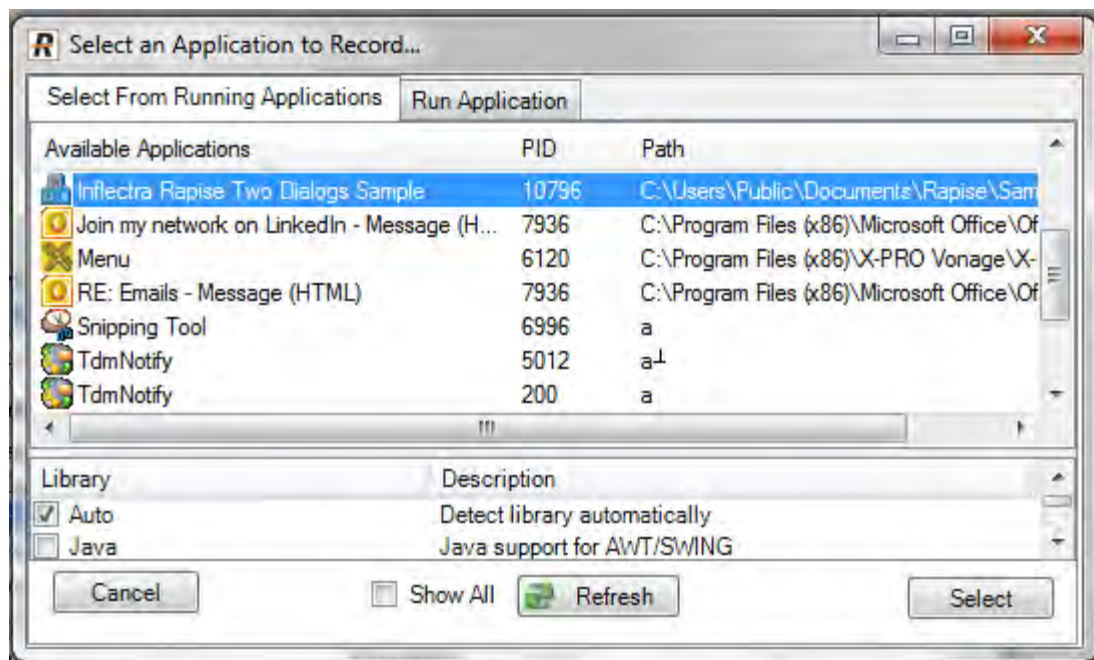


Step 4. Recording the test sequence. Press the "Record/Learn" button in either the



ribbon or on the toolbar. It has an icon like this:

You will see an application selection dialog like the following.

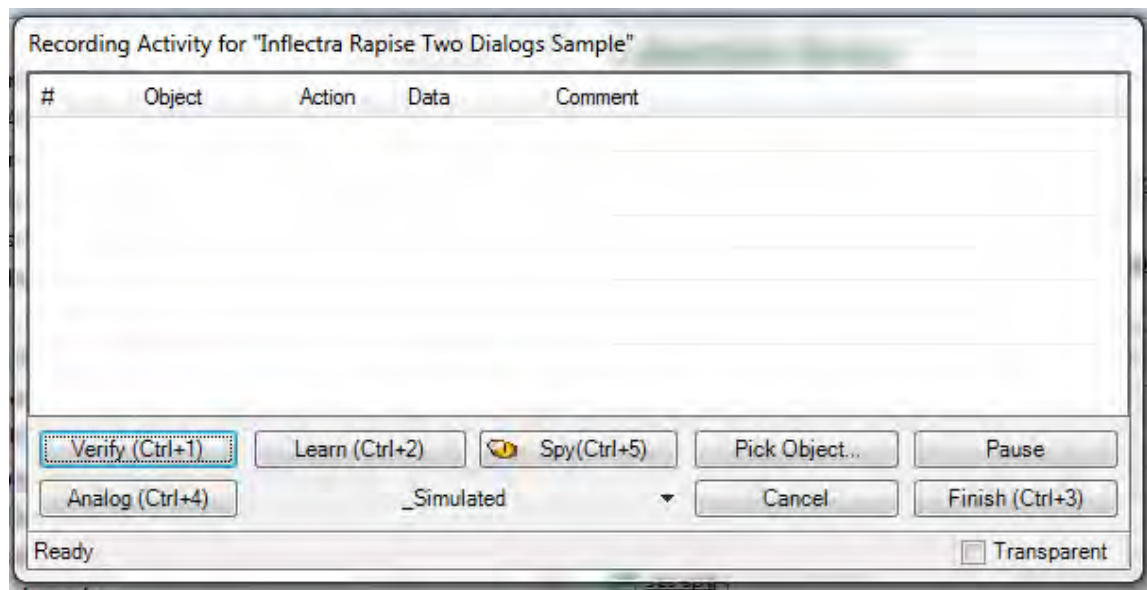


Select the "Inflectra Rapise Two Dialogs Sample" entry.
Leave the library selection as "Auto."
Press the "Select" button at the bottom right.

Step 5. Record the activity in the application.

Rapise will pause while it starts the necessary background processes and hooks into the running AUT.

Once those tasks are complete, you will see the following "Recording Activity" for "Inflectra Rapise Two Dialogs Sample" dialog:



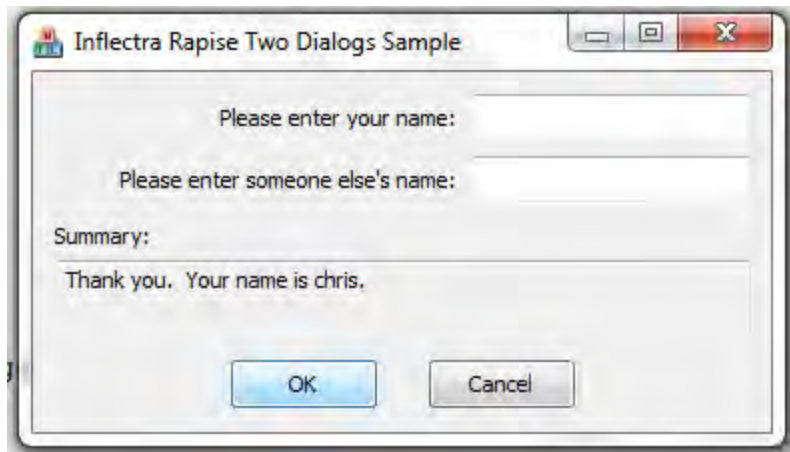
The AUT will be brought to the foreground and Rapise will be minimized.

You will achieve best results in recording if you observe the following guidelines:

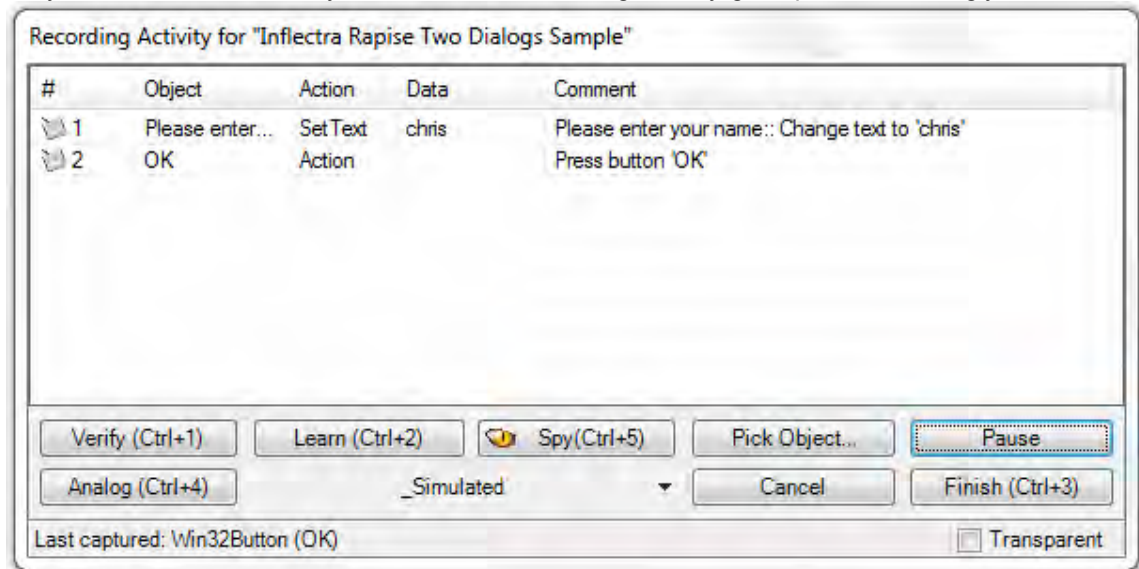
- (1) Work slowly while recording. Perform one action and wait for the results to be recorded in the Recording Activity dialog as a new grid line-item before going to the next item.
- (2) Use the mouse to select controls and operate them. Avoid using keyboard shortcuts and keyboard commands.

Step 6. Click in the first edit box in the TwoDialogs application. Type a name in there.

Watch the Recording activity dialog as you operate the AUT interface. As you press a button or fill a field, notice that the grid in the Recording activity has entries added to it.



As you take these actions, you will see the Recording Activity grid update accordingly:

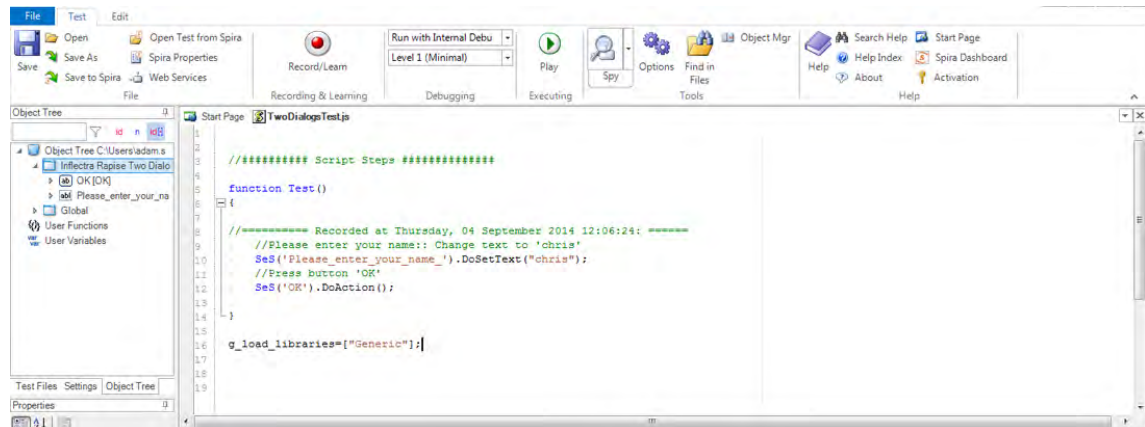


For a full explanation of the controls on this dialog, refer to the reference for [Recording Activity Dialog](#)

When you have finished recording the activity for the AUT, press the "Finish" button or CTRL+3.

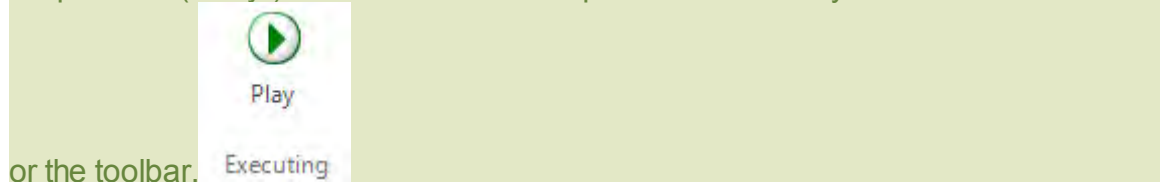
Note: Do not terminate the `TwoDialogs` application.

When you do this, the "Recording Activity" dialog will be closed and the AUT will lose focus. Rapise will change the view to display the newly recorded script. It will look something like the following:



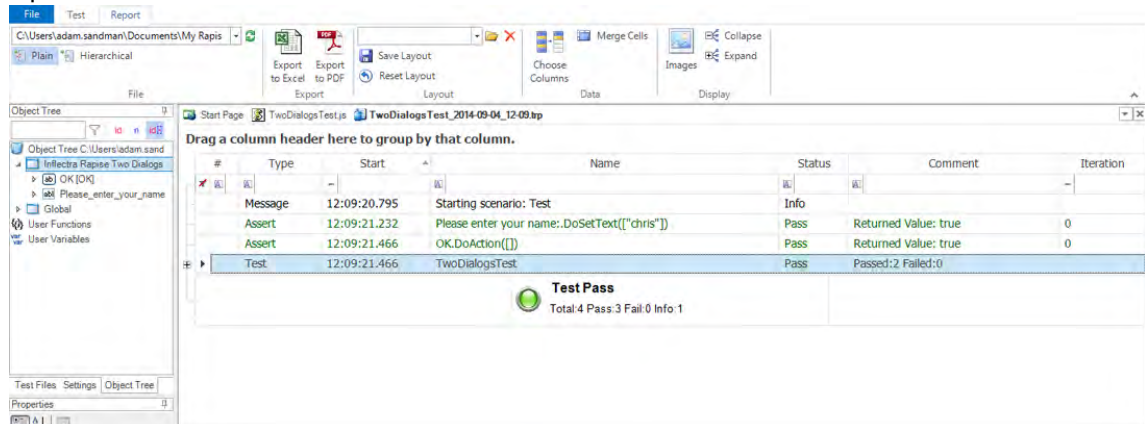
Notice that the two steps of the script are automatically documented and that they correspond precisely and in the same order as the way they appeared in the Recording Activity dialog during recording.

Step 7: Run ("Play") the recorded test script. Press the "Play" button on the ribbon



As the script runs, the Rapise window will be minimized to the taskbar and you will see the results of the script's activities on the TwoDialogs application window.

At the end of the script execution, the Rapise window will be restored and the view will be of the report for the test:



Step 8: A refinement on the launching of TwoDialogs.exe.

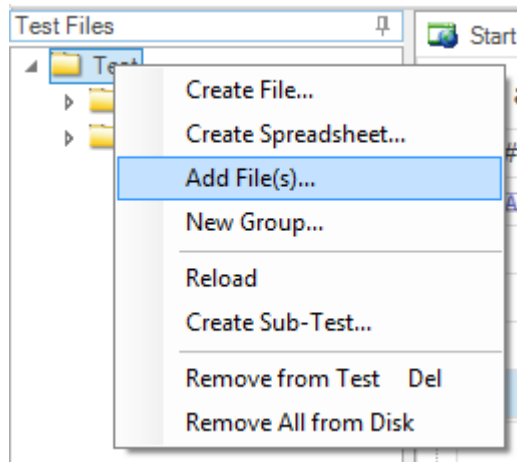
To date, we have operated on the assumption that the `TwoDialogs` sample program (application) is running. If this situation remained, the test script would require that the AUT be running before the script started. That would require that the person running the test remembered where it resided. To overcome this, Rapise provides a way to have the script run the program (AUT) before beginning the test.

Rapise has an underlying scripting language based on JavaScript (see [Scripting](#)). This help system covers available scripting objects in detail from a practical perspective. For the moment, we want to simply take the shortest path to starting the application before attempting to run the test.

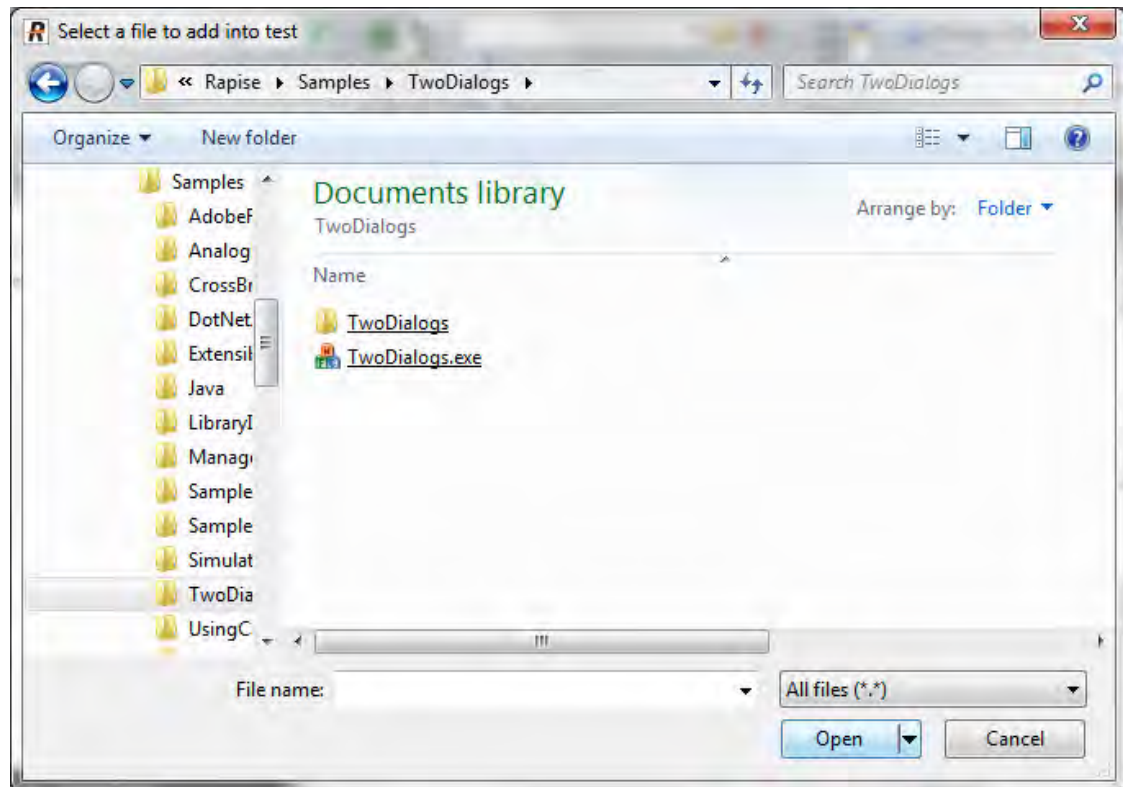
There are at least 3 ways of adding application launch code to your test.

Way 1: Drag The File from the Test Files view

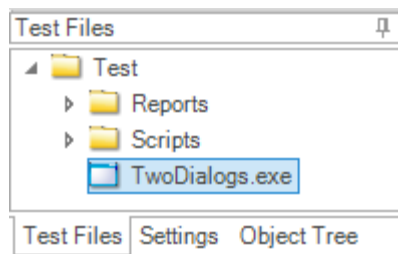
First, switch to [Test Files](#) view. Right-click on "Test" folder and choose "Add File(s)..." menu item:



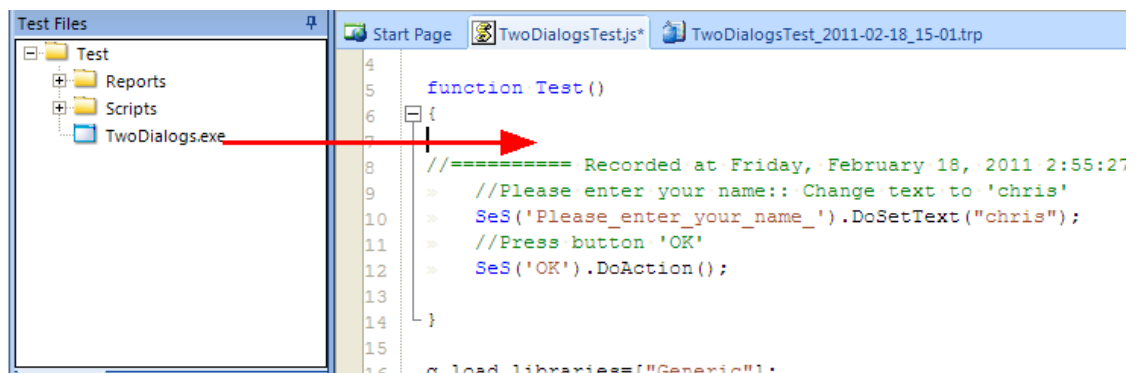
And select the location of the `TwoDialogs.exe` (normally, it is `C:\Program Files\Inflectra\Rapise\Samples\TwoDialogs\TwoDialogs.exe`),



Now you have the executable as a part of your test files set:



If you wish to launch `TwoDialogs.exe` once then just double-click on it in the tree. If you wish it to be launched every time the test starts then simply drag it from the tree into the source code:



The proper launch statement will be inserted:

```
function Test()
{
  Global.DoLaunch('.../Rapise/Samples/TwoDialogs/TwoDialogs.exe');
  //===== Recorded at Tuesday, September 27, 2011 4:06:19 PM: =====
  //Please enter your name:: Change text to 'chris'
  SeS('Please_enter_your_name_').DoSetText("chris");
  //Press button 'OK'
  SeS('OK').DoAction();
}
```

Way 2: Type the Code

The `Global` object contains methods that are available to all scripts.

Select the `TwoDialogs.js` file in the [Test Files](#) view of the Rapise main page.

Double-click the file name to open it in the main (editing) window of Rapise. You will see the generated script from the recording session from earlier steps in this sample.

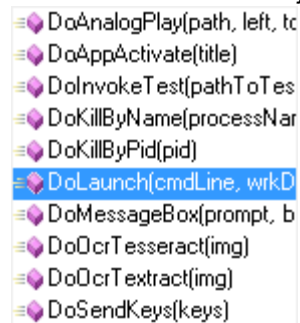
Place the cursor in the main editing window and click on the first line after

```
function Test()
{
```

Now type

`Global.`

As soon as you type the ".", Rapise will give you a drop down list of all the available methods available in the `Global` object:



Select the `DoLaunch(cmdLine, wrkD)` member and hit the Enter key.

Now your script contains the line:

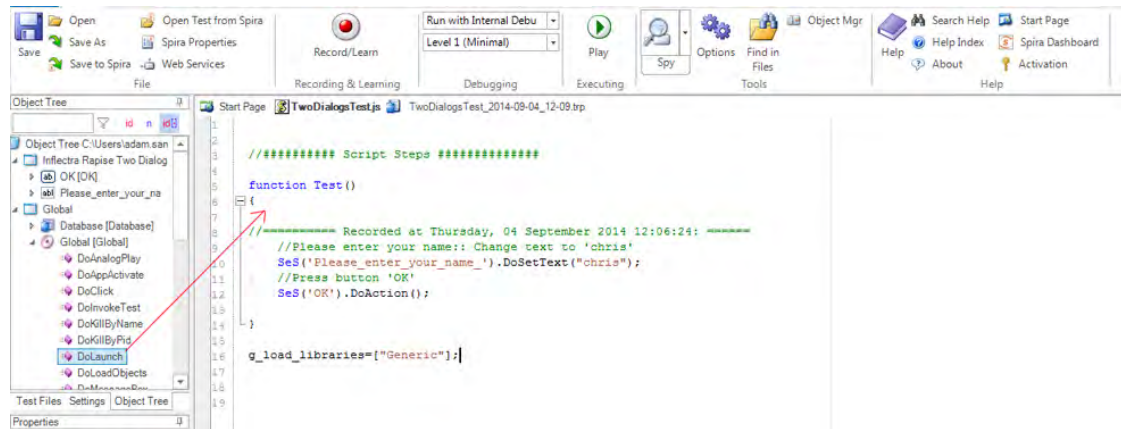
```
Global.DoLaunch('')
```

You need to correct the references to the command line:

```
Global.DoLaunch('C:\\Program Files\\Inflectra\\Rapise\\Samples\\TwoDialogs\\TwoDialogs.exe');
```

Way 3: Drag the Action from the Objects Tree

You may drag the method template from the [Object Tree](#) view. Expand the "Global" node and select the "DoLaunch" action in it. Drag the node into the proper position inside the script source:



Template call is inserted:

```

4
5 function Test()
6 {
7   Global.DoLaunch('');
8   //===== Recorded at Friday, Feb
9   > //Please enter your name:: Chang
10  > SeS('Please_enter_your_name_').D
11  > //Press button 'OK'

```

Now you need to correct the references to the command line:

```

Global.DoLaunch('C:\\Program Files\\Inflectra\\Rapise\\Samples\\TwoDialogs\\
\\TwoDialogs.exe');

```

2.3.5 Tutorial: Testing Adobe Flex Applications

Contents

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[Record a Simple Test](#)

[Execute the Test](#)

[Using FlexLoader](#)

[See Also](#)

Introduction

After going through this tutorial you'll get a basic idea of how to test browser-based Flex applications with Rapise.

Prerequisites

This tutorial assumes that you have installed:

1. Rapise
2. Adobe Flex Builder 3 (<http://www.adobe.com/products/flash-builder-family.html>)

OR

Adobe Flash Builder 4 (<http://www.adobe.com/products/flash-builder-family.html>)

Create a Simple Flex Application: HelloFlex

Let's start from creation of a very simple Flex application.

1. Create home directory for the application: **C:\HelloFlex**. You may create any other directory that is more suitable for you, just do not forget to change corresponding paths used in this tutorial.
2. Create main file of the application: **C:\HelloFlex\HelloFlex.mxml**. Place the following code in it:

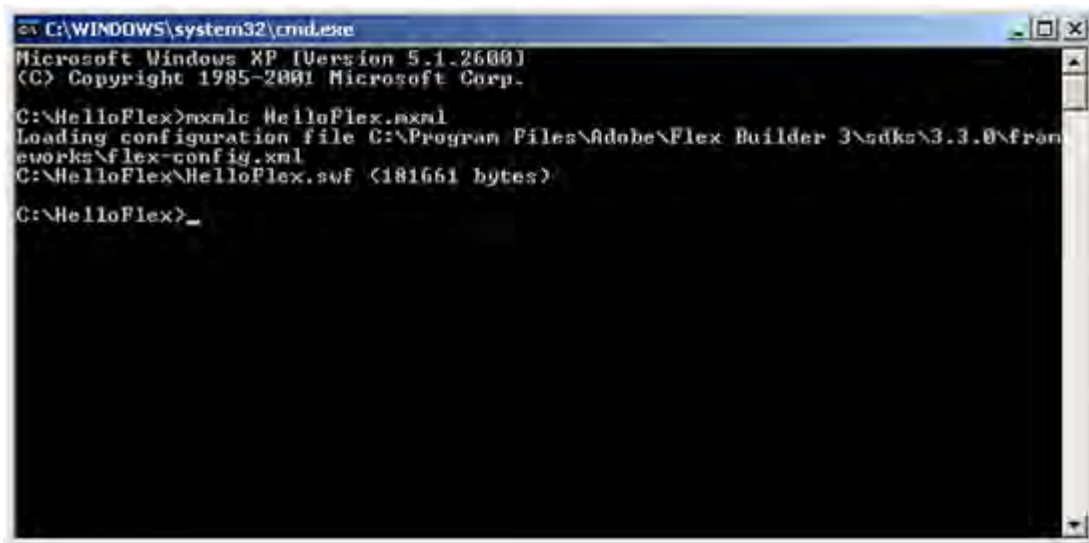
```
<?xml version="1.0" encoding="utf-8"?>
<mx:Application
  xmlns:mx="http://www.adobe.com/2006/mxml"
  viewSourceURL="src/HelloFlex/index.html"
  horizontalAlign="center" verticalAlign="middle"
  width="640" height="480"
>
  <mx:Script>
    <![CDATA[
      import mx.controls.Alert;
    ]]>
  </mx:Script>
  <mx:Panel
    paddingTop="10" paddingBottom="10" paddingLeft="10" paddingRight="10"
    title="My Application"
  >
    <mx:Label text="Hello Flex!" fontWeight="bold" fontSize="24"/>
    <mx:Button id="button" label="Button" click="{Alert.show('Button
Pressed');}"/>
  </mx:Panel>
</mx:Application>
```

3. Create wrapper HTML for the application: **C:\HelloFlex\HelloFlex.html**. Place the following code in it:

```
<html lang="en">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<title>HelloFlex</title>
</head>
<body scroll="no">
  <object classid="clsid:D27CDB6E-AE6D-11cf-96B8-444553540000"
    id="HelloFlex" width="100%" height="100%"
    codebase="http://fpdownload.macromedia.com/get/flashplayer/current/
swflash.cab">
```

```
<param name="movie" value="HelloFlex.swf" />
<param name="quality" value="high" />
<param name="bgcolor" value="#869ca7" />
<param name="allowScriptAccess" value="sameDomain" />
<embed src="HelloFlex.swf" quality="high" bgcolor="#869ca7"
width="100%" height="100%" name="HelloFlex" align="middle"
play="true"
loop="false"
quality="high"
allowScriptAccess="sameDomain"
type="application/x-shockwave-flash"
pluginspage="http://www.adobe.com/go/getflashplayer">
</embed>
</object>
</noscript>
</body>
</html>
```

4. Compile the application (make sure that **mxmlic.exe** is available in command line window. If Flex Builder 3 is installed then it is available at: "**c:\Program Files\Adobe\Flex Builder 3\sdks\<SDK Version>\bin\mxmlic.exe**").
If Flash Builder 4 is installed then it is available at: "**c:\Program Files\Adobe\Flash Builder 4\sdks\<SDK Version>\bin\mxmlic.exe**")
 - a) Open CMD window in **C:\HelloFlex** directory
 - b) Run command: **mxmlic HelloFlex.mxml**

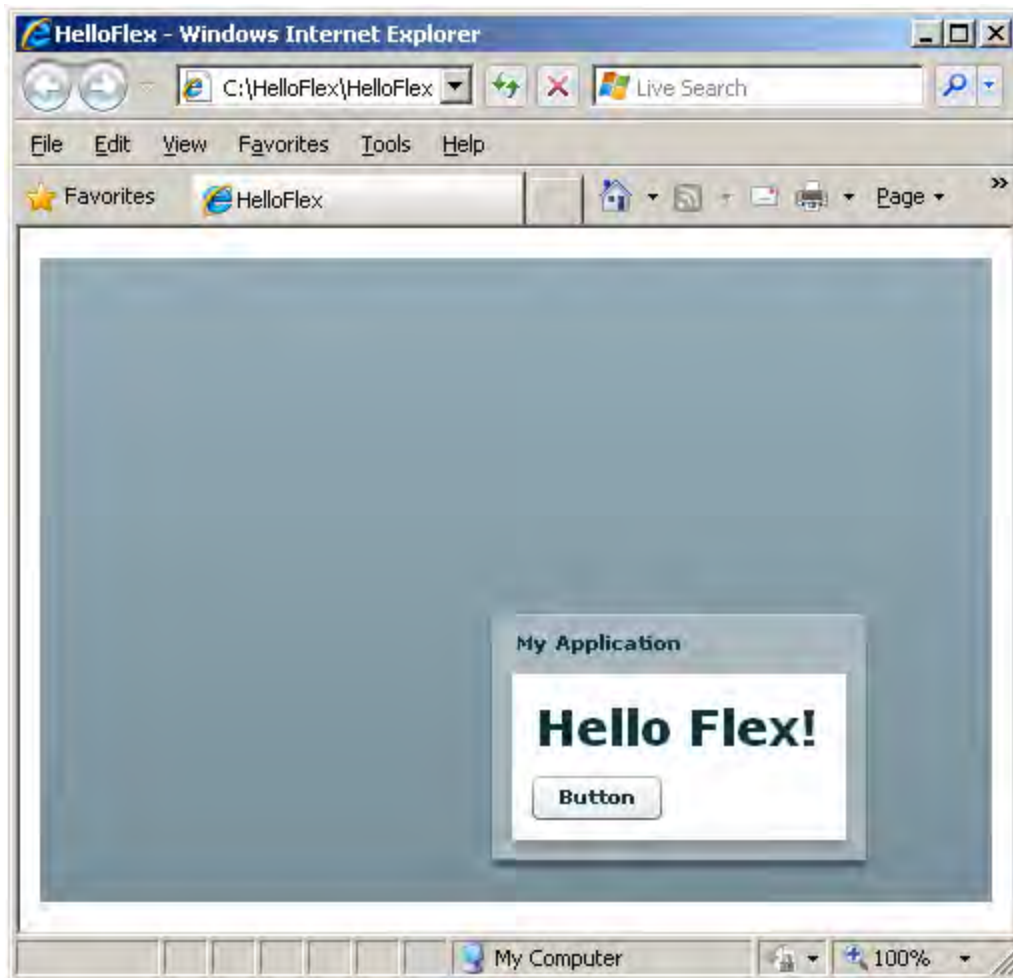


```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\HelloFlex>mxmlic HelloFlex.mxml
Loading configuration file C:\Program Files\Adobe\Flex Builder 3\sdks\3.3.0\frameworks\flex-config.xml
C:\HelloFlex\HelloFlex.swf (181661 bytes)

C:\HelloFlex>_
```

5. Test the application by opening **C:\HelloFlex\HelloFlex.html** in Internet Explorer.



Enable HelloFlex Application for Testing

To make HelloFlex application testable by Rapise you need to link it with automation libraries.

Link HelloFlex with Necessary Libraries

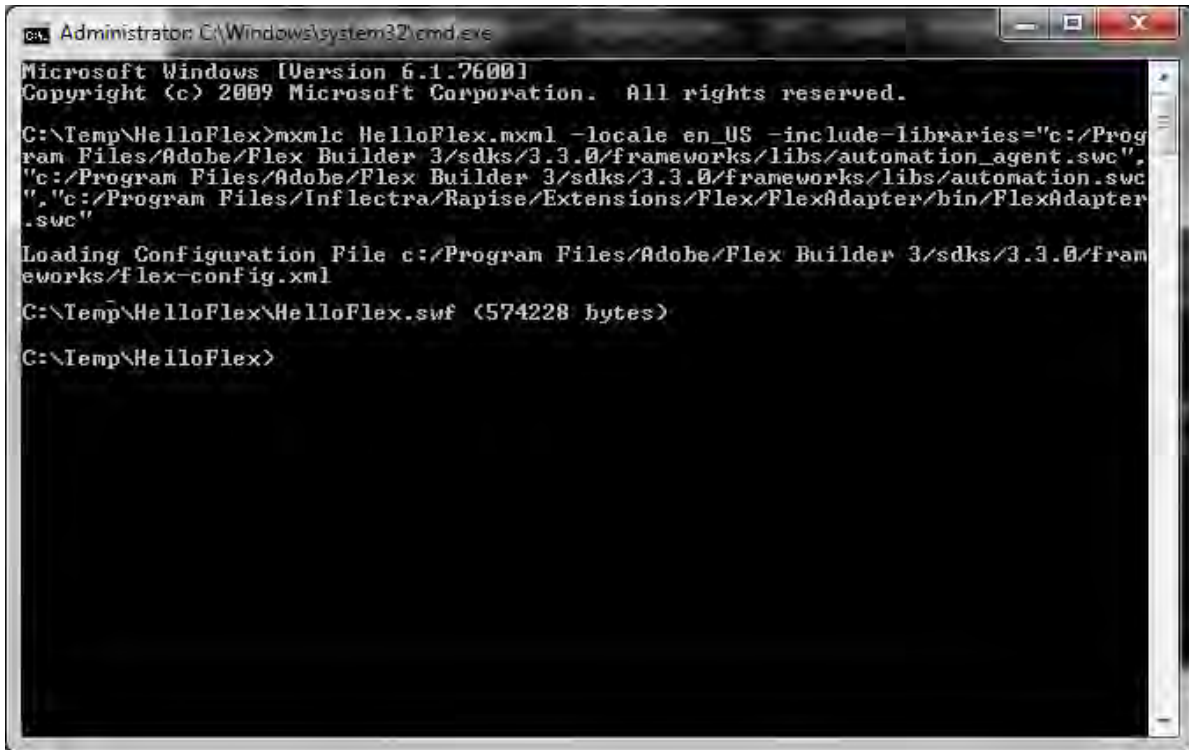
For Flex Builder 3.x, recompile the HelloFlex application using the following command line that links **automation.swc** and **automation_agent.swc** from Flex Builder 3 and **FlexAdapter.swc** from Rapise:

```
mxmhc HelloFlex.mxml -locale en_US -include-libraries="c:/Program Files/Adobe/  
Flex Builder 3/sdks/<Version>/frameworks/libs/automation_agent.swc", "c:/Program  
Files/Adobe/Flex Builder 3/sdks/<Version>/frameworks/libs/automation.swc", "c:/  
Program Files/Inflectra/Rapise/Extensions/Flex/FlexAdapter/bin/FlexAdapter.swc"
```

For Flash Builder 4.x, recompile the HelloFlex application using the following command line that links **automation.swc** and **automation_agent.swc** from Flash Builder 4.x and **FlexAdapter.swc** from Rapise:

```
mxmhc HelloFlex.mxml -locale en_US -include-libraries="c:/Program Files/Adobe/  
Flash Builder 4/sdks/<Version>/frameworks/libs/automation_agent.swc", "c:/Program
```

```
Files/Adobe/Flash Builder 4/sdks/<Version>/frameworks/libs/automation.swc", "c:/
Program Files/Inflectra/Rapise/Extensions/Flex/FlexAdapter/bin/FlexAdapter.swc"
```



```
Administrator C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Temp\HelloFlex>mxmmlc HelloFlex.mxml -locale en_US -include-libraries="c:/Program Files/Adobe/Flex Builder 3/sdks/3.3.0/frameworks/libs/automation_agent.swc", "c:/Program Files/Adobe/Flex Builder 3/sdks/3.3.0/frameworks/libs/automation.swc", "c:/Program Files/Inflectra/Rapise/Extensions/Flex/FlexAdapter/bin/FlexAdapter.swc"
Loading Configuration File c:/Program Files/Adobe/Flex Builder 3/sdks/3.3.0/frameworks/Flex-config.xml
C:\Temp\HelloFlex\HelloFlex.swf (574228 bytes)

C:\Temp\HelloFlex>
```

Add HelloFlex to FlashPlayerTrust

Adobe Flash Player has restricted security settings for SWFs opened from file system. To enable testing of such SWFs their corresponding folders must be listed in FlashPlayerTrust directory.

Path to FlashPlayerTrust directory:

to enable testing for all users:

```
<system>\Macromed\Flash\FlashPlayerTrust
```

to enable testing just for current user:

```
<ApplicationData>\Macromedia\Flash Player\#Security\FlashPlayerTrust
```

(on Vista this path looks like:

```
c:\Users\<User Name>\AppData\Roaming\Macromedia\Flash Player\#Security\FlashPlayerTrust
```

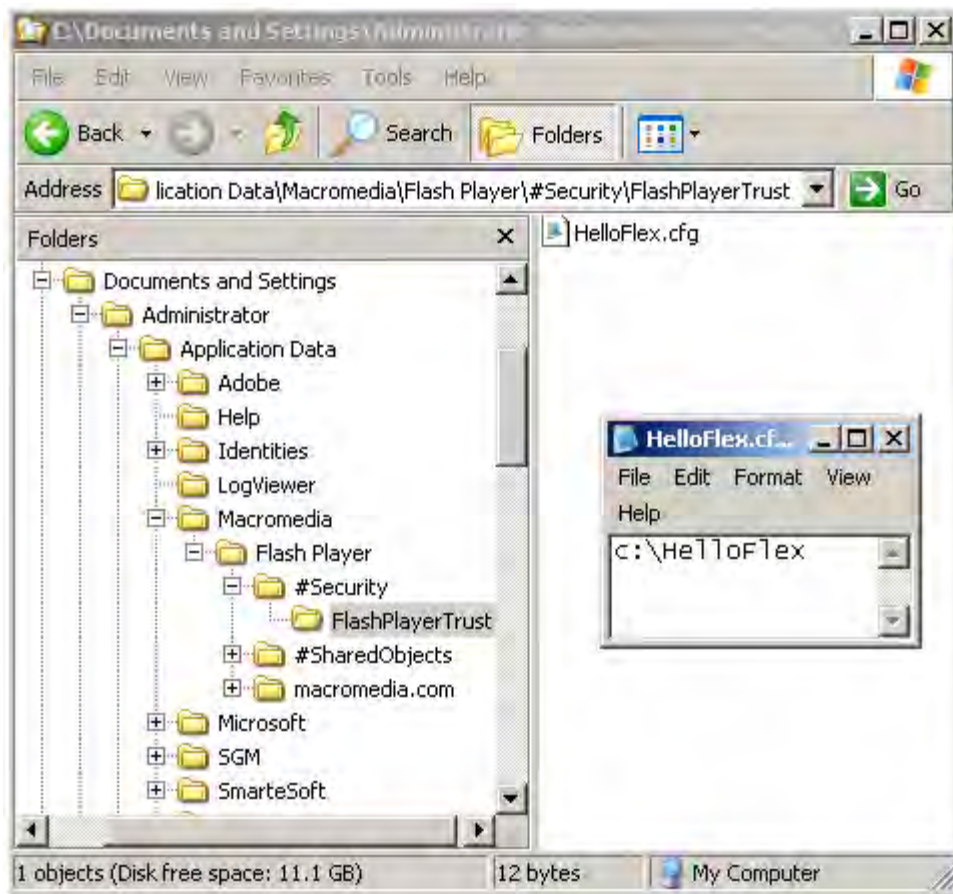
)

To register your SWF just create a file with the name "<name of your SWF>.cfg" and put it in this directory. In the file write a path to SWF folder.

Note: If you do not have *FlashPlayerTrust* directory in one of locations listed above then you will have to create missing directories yourself.

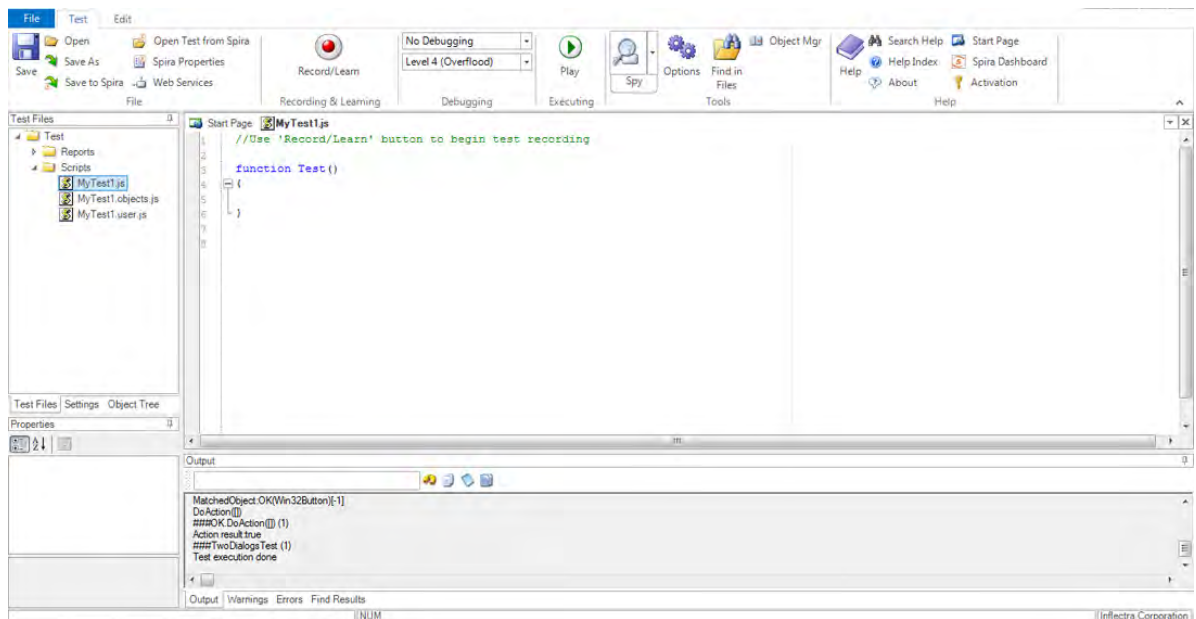
To register **c:\HelloFlex\HelloFlex.swf**

- a) create file **<ApplicationData>Macromedia\Flash Player\#Security\FlashPlayerTrust\HelloFlex.cfg**
- b) add this to the file: **c:\HelloFlex**

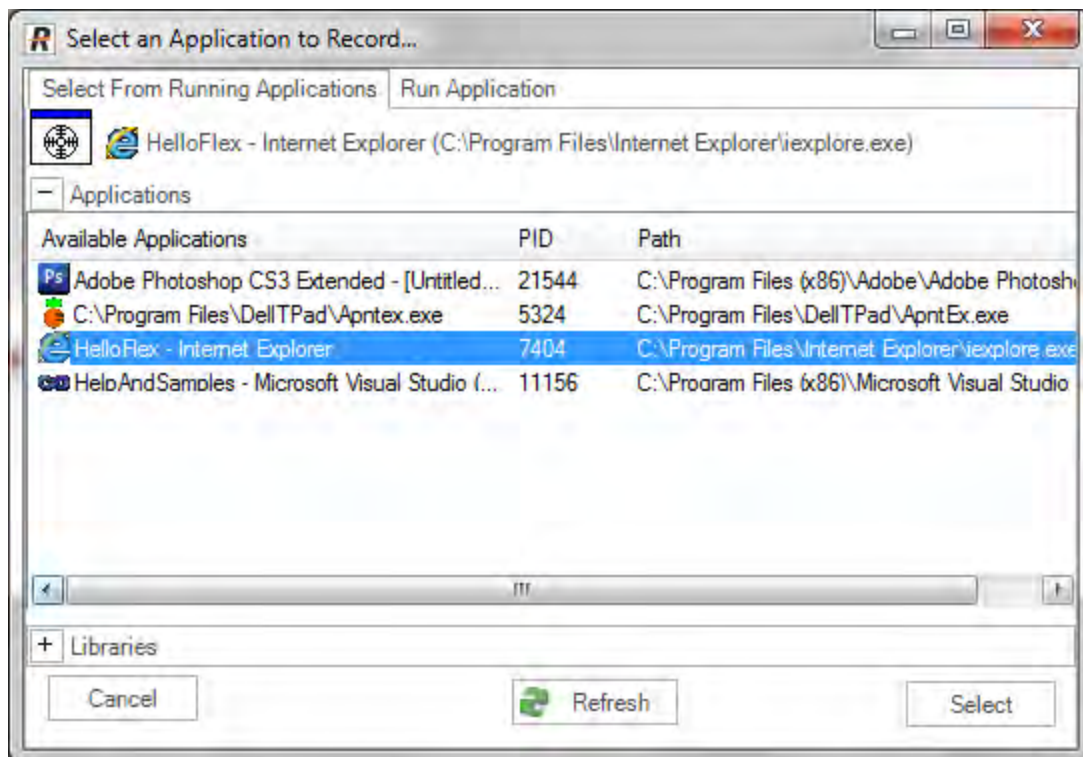


Record a Simple Test

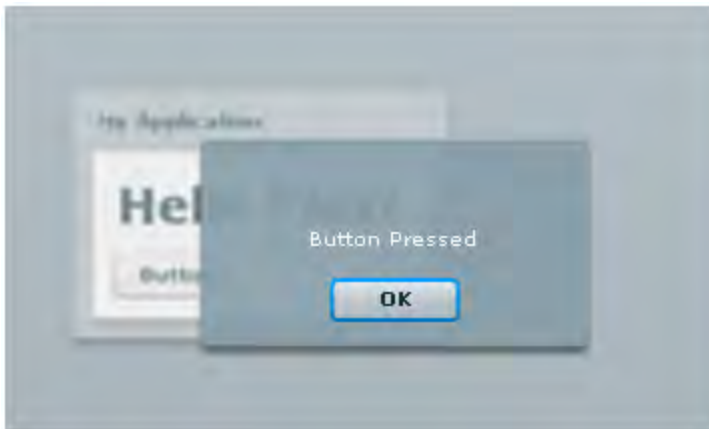
1. Open **C:\HelloFlex\HelloFlex.html** in Internet Explorer.
2. Start Rapise and press Record/Learn button



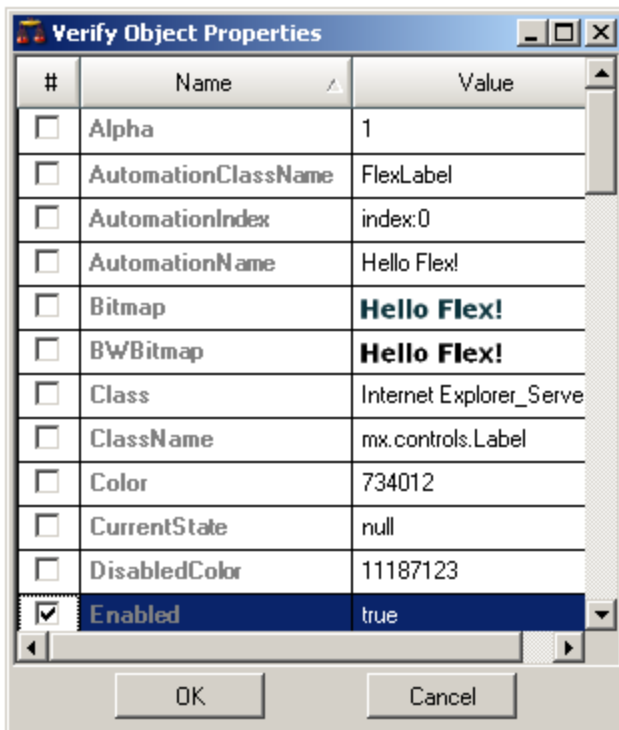
3. Choose HelloFlex application and press Select, recording will start.



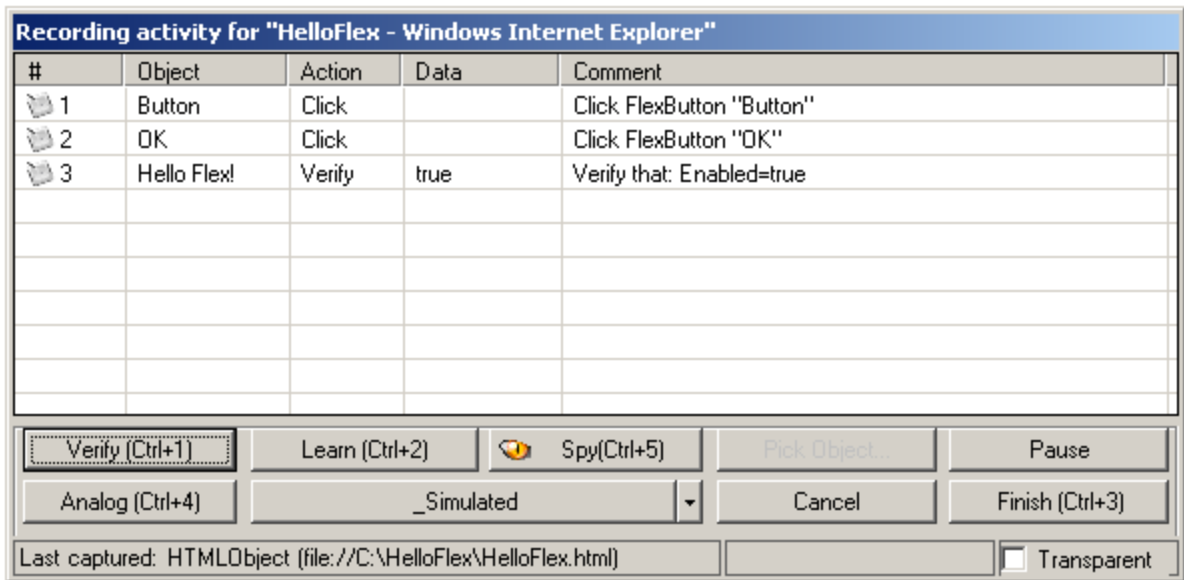
4. In HelloFlex application press Button and then press Ok in the alert message.



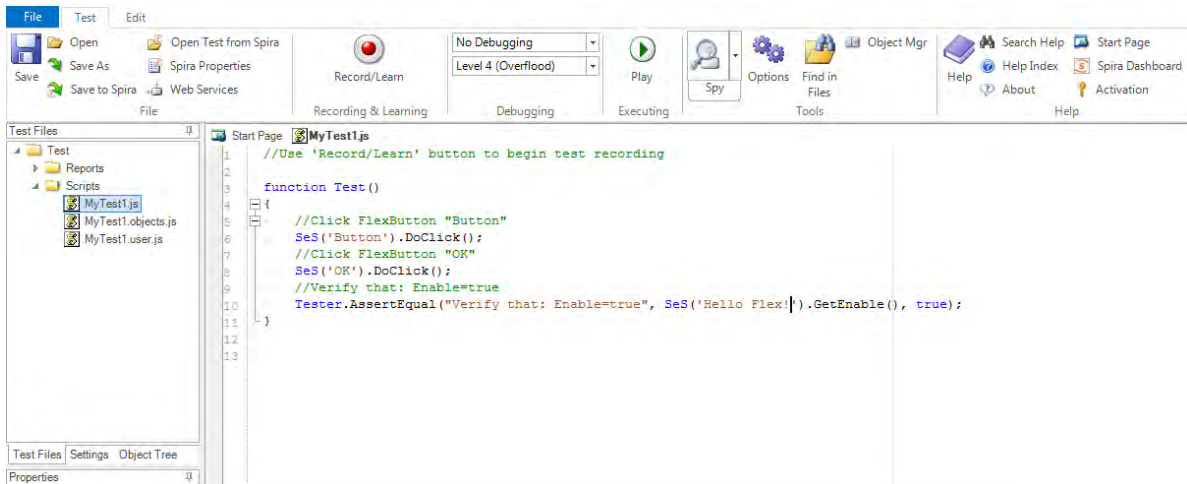
- Then press Verify button on Recording activity dialog and click on "Hello Flex!" label. In Verify Object Properties dialog check Enabled property.



- You have recorded three basic steps of your test.



7. Press Finish button on Recording activity dialog. You now have recorded the test.



Execute the Test

Execute the test by pressing the Play button in Rapise.

Congratulations! You have successfully completed this tutorial and now know basics of testing Flex applications with Rapise.

Using FlexLoader for Flex 3 Applications

If you do not want to compile your Flex 3 application with automation libraries you have an option to use FlexLoader.

FlexLoader is a Flex 3 application compiled with the required automation libraries and capable of

loading any given SWF application. With FlexLoader you do not need to modify your application to make it testable by Rapise.

(You will need to choose between FlexLoader 3 and FlexLoader 4 according to which Flex SDK version your application uses.)

To use FlexLoader 3 just copy **FlexLoader.html** and **FlexLoader.swf** from **c:/Program Files/Inflectra/Rapise/Extensions/Flex/FlexLoader/bin** to your web server near your application. Then type in browser URL to **FlexLoader.html** and supply additional query parameter with the name of your SWF file, e.g.:

http://localhost/FlexLoader.html?automationswfurl=Sample.swf

You can find sample application for testing here: **c:/Program Files/Inflectra/Rapise/Extensions/Flex/FlexLoader/bin/Sample.swf**

Using FlexLoader for Flex 4 Applications

If you do not want to compile your Flex 4 application with automation libraries you have an option to use FlexLoader4.

FlexLoader4 is a Flex 4 application compiled with the required automation libraries and capable of loading any given SWF application. With FlexLoader4 you do not need to modify your application to make it testable by Rapise.

(You will need to choose between FlexLoader 3 and FlexLoader 4 according to which Flex SDK version your application uses.)

To use FlexLoader 4 just copy **FlexLoader4.html** and **FlexLoader.swf** from **c:/Program Files/Inflectra/Rapise/Extensions/Flex/FlexLoader4/bin** to your web server near your application. Then type in browser URL to **FlexLoader4.html** and supply additional query parameter with the name of your SWF file, e.g.:

http://localhost/FlexLoader4.html?automationswfurl=Sample.swf

You can find sample application for testing here: **C:\Users\Public\Documents\Rapise\Samples\AdobeFlex4\AUTFlexFP4\bin-debug\assets**

See Also

- [Adobe Flex](#)

2.3.6 Tutorial: Testing REST Web Services

In this section you shall learn how to test a RESTful web services API using Rapise. We shall be using a demo application called **Library Information System** that has a dummy RESTful web service API available for learning purposes. You can access this sample application at <http://www.libraryinformationsystem.org>, and its RESTful web service API can be found at: www.libraryinformationsystem.org/Services/RestService.aspx.

What is REST and what is a RESTful web service?

REpresentational State Transfer (REST) is a style of software architecture for distributed systems such as the World Wide Web. REST has emerged as a web API design model that offers greater simplicity over other web service protocols such as SOAP and XML-RPC.

A RESTful web API (also called a RESTful web service) is a web API implemented using HTTP and REST principles. Unlike SOAP-based web services, there is no "official" standard for RESTful web APIs. This is because REST is an architectural style, unlike SOAP, which is a protocol.

Overview

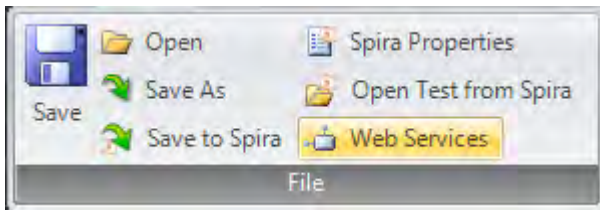
Creating a REST web service test in Rapise consists of the following steps:

1. Using the REST query builder to create the various REST web service requests and verify that they return the expected data in the expected format.
2. Parameterizing these REST web service requests into reusable templates and saving as Rapise learned objects.
3. Writing the test script in Javascript that uses the learned Rapise web service objects.

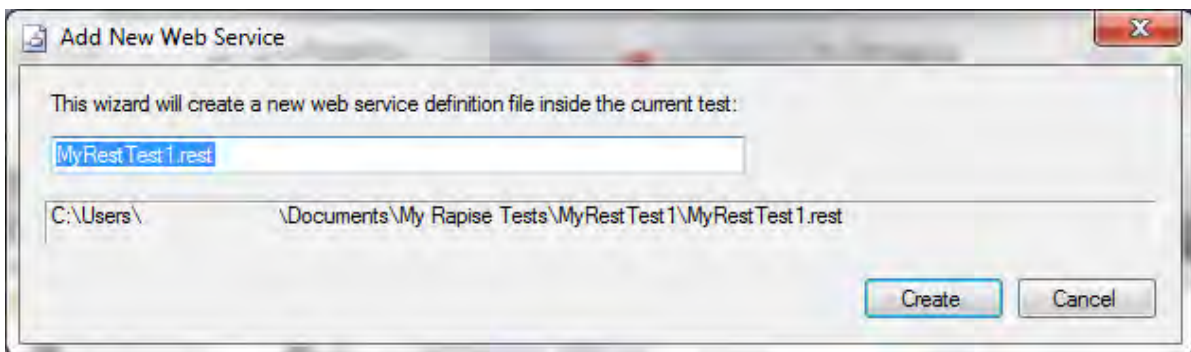
We shall discuss each of these steps in turn.

1. Using the REST Query Builder

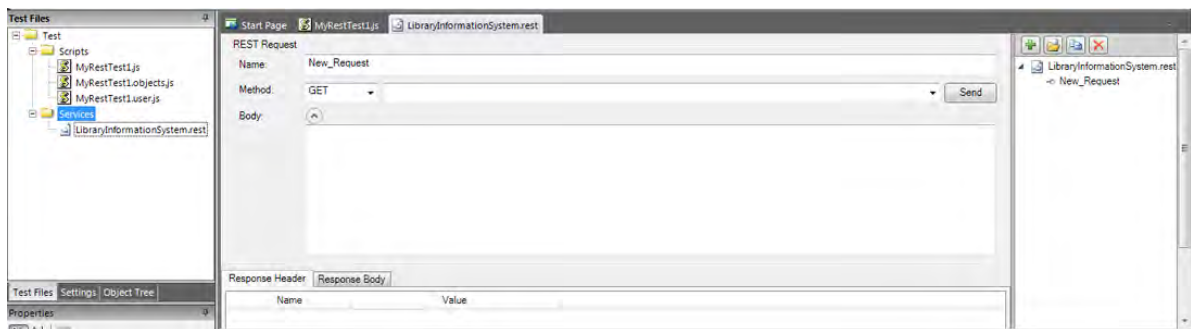
Create a new test in Rapise called MyRestTest1.sstest. Once you have created it, click on the "Web Services" icon in the Test ribbon to add a new web service definition to your test project:



This will display the Add New Web Service dialog box:



Enter the name of the web service that you're going to add, in this case enter "**LibraryInformationSystem.rest**" and click "Create". This will add the REST web services definition file to your test project:



You will see on the right hand side, there is a new document editor for the .rest file. This is the REST web services query form. It lets you send test HTTP requests to the web service under test and inspect the output being returned.

If you open up API documentation for our sample application (www.libraryinformationsystem.org/Services/RestService.aspx) you will see that it exposes several operations for retrieving, adding, updating and deleting books and authors in the system. For this tutorial we shall perform the following operations:

1. Get the special SessionID to identify our test session
2. Get a list of books in the system
3. Add a new book to the system and verify that it was added

According to the documentation that means we will need to send the following requests:

(i) Get a Unique Session

URL:	http://www.libraryinformationsystem.org/Services/RestService.svc/session
Method:	GET
Returns:	Unique session ID that is passed to other requests to keep data separate for different demo users

(ii) Get this list of books

URL:	http://www.libraryinformationsystem.org/Services/RestService.svc/book?session_id={session_id}
Method:	GET
Returns:	Array of book objects

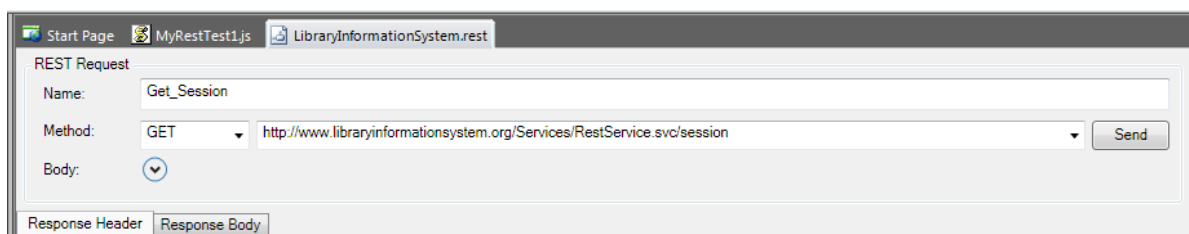
(iii) Add a new book to the list

URL:	http://www.libraryinformationsystem.org/Services/RestService.svc/book?session_id={session_id}
Method:	POST
	Pass a populated book object:
Body:	<pre>{ "Name": "Book Name", "AuthorId": 1, "GenreId": 1, }</pre>
Returns:	Single book object that has its BookId populated

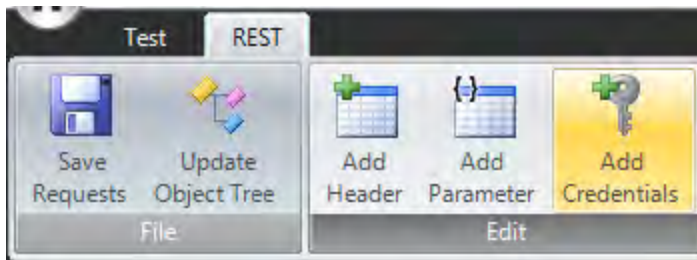
The first request will be to get the unique session ID that we will need to pass to the other requests. This is needed by our sample application to prevent testing by different users interfering with each other. To create this request, simply enter the following information on the REST Request form:

- **Name:** Get_Session
- **Method:** GET
- **URL:** http://www.libraryinformationsystem.org/Services/RestService.svc/session

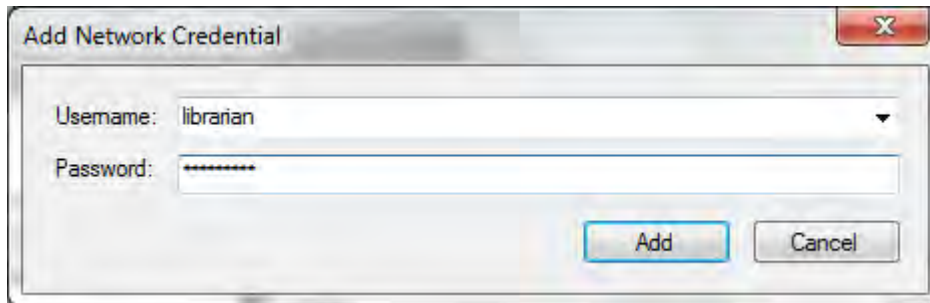
You should now have it populated as illustrated below:



This web service request requires that we pass credentials by means of HTTP Basic authentication. So click on the "REST" tab in the Rapise ribbon and click on the "Add Credentials" button.

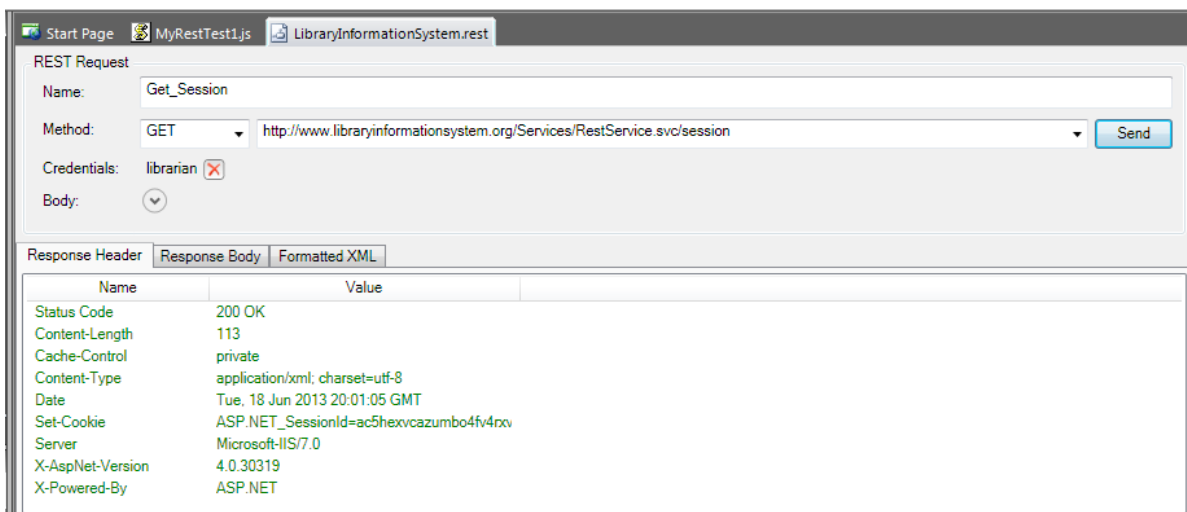


This will display the "Add Credentials" dialog box:

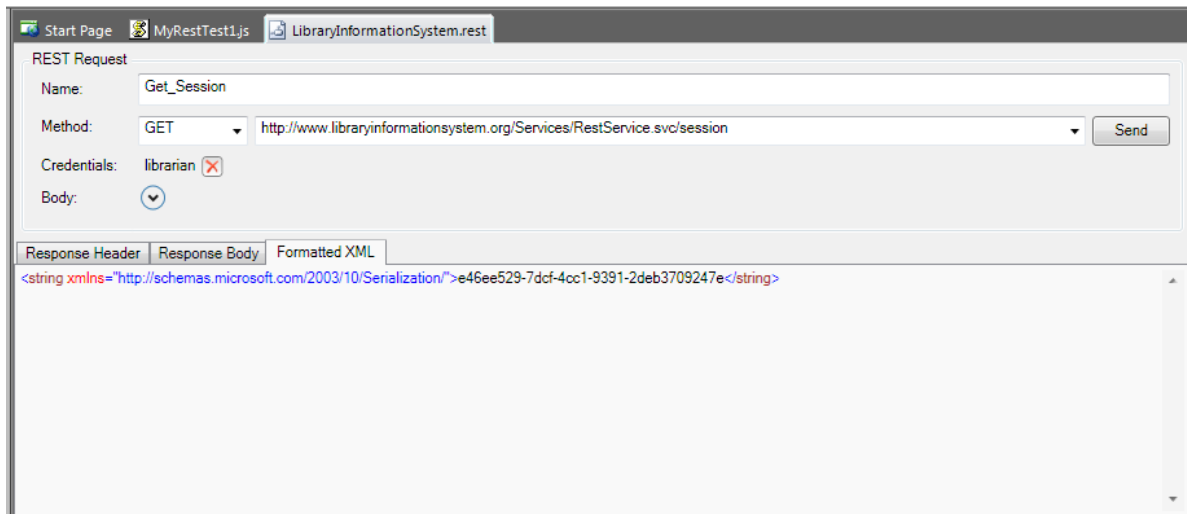


Enter **librarian** as both the username and password and click "Add".

Now click the "Send" button and the request will get sent to the web service:



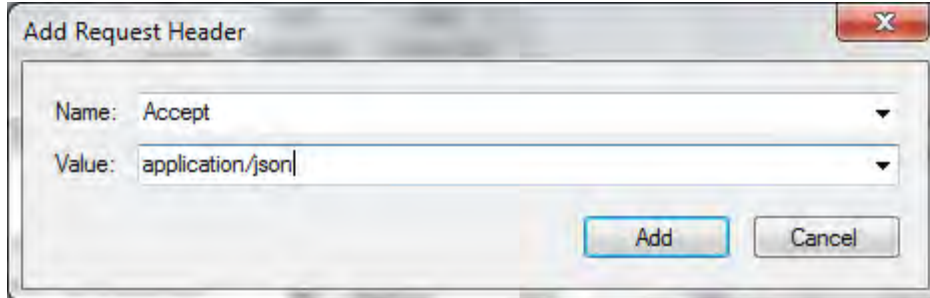
The Response Header tab will display the headers coming back from the web service. The Status Code **200 OK** means that the request succeeded and that data was returned. If you click on the "Formatted XML" tab, you will see the XML serialized data returned from the web service:



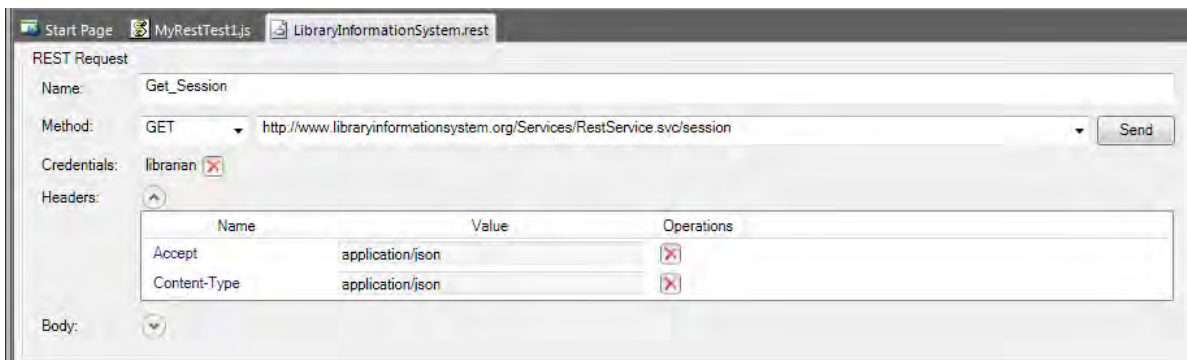
Since Rapise uses JavaScript as its scripting language, it is usually easier to work with JSON (JavaScript Object Notation) serialized data rather than XML. In the case of the sample Library Information System web service, you can change the format that it accepts and retrieves by sending two special HTTP headers:

- **Content-Type:** application/json
- **Accept:** application/json

To add these headers to the request, simply click on the "Add Header" button in the REST ribbon tab. This will display the following dialog box:



Choose the HTTP Header "**Accept**" from the list and enter "**application/json**" as the value. Repeat for the "**Content-Type**" header. You should now have the following populated request:



Now click the "Send" button and the request will get sent to the web service:

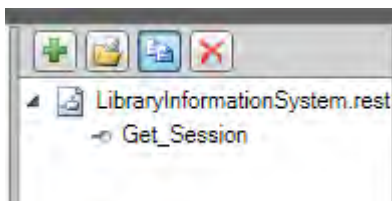
Response Header		Response Body	Formatted JSON
Name	Value		
Status Code	200 OK		
Content-Length	38		
Cache-Control	private		
Content-Type	application/json; charset=utf-8		
Date	Tue, 18 Jun 2013 20:15:45 GMT		
Set-Cookie	ASP.NET_SessionId=i3x3krobs5osudy2e3acsj		
Server	Microsoft-IIS/7.0		
X-AspNet-Version	4.0.30319		
X-Powered-By	ASP.NET		

The Response Header tab will display the headers coming back from the web service. Note that the returned Content-Type is listed as "application/json" as requested. If you click on the "Formatted JSON" tab, you will see the JSON serialized data returned from the web service:

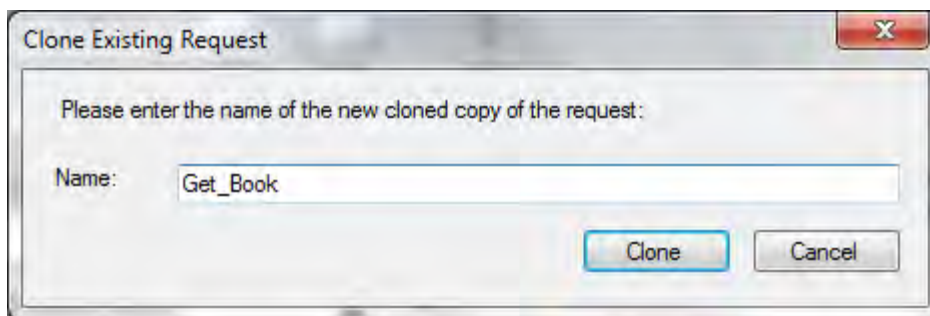
Response Header	Response Body	Formatted JSON
"82499bcc-37e4-4c64-820e-a2d798cd1e84"		

We have now completed the creation of our first test operation. Click on the "Save Requests" button in the Rapise REST Ribbon to make sure our changes have been saved.

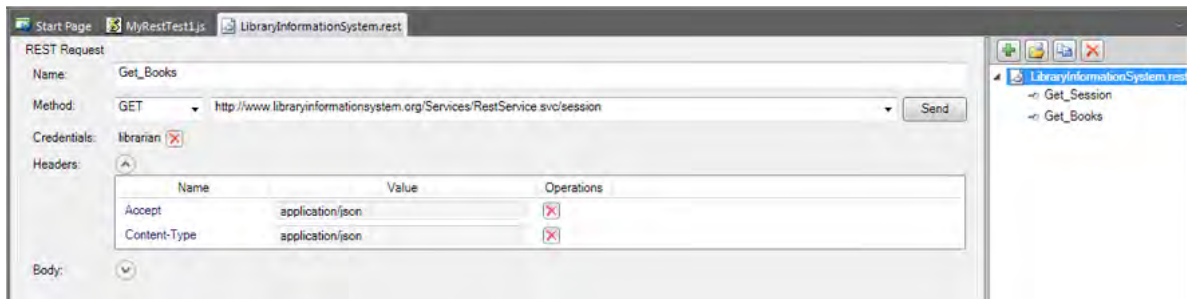
Now click on the "Clone request" icon in the REST request explorer in the right-hand side of the screen:



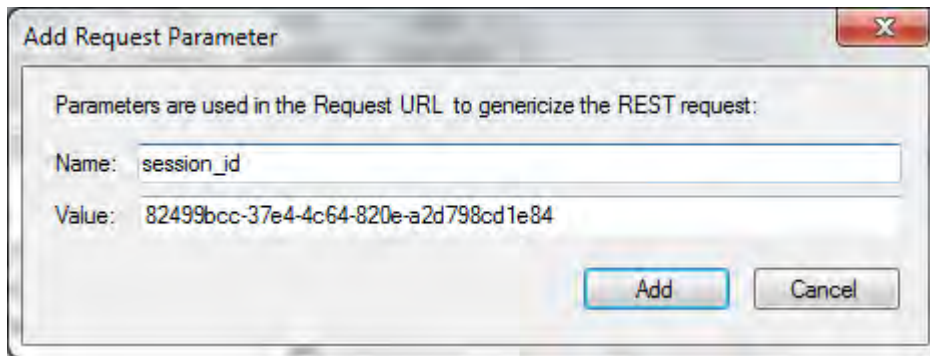
This will display the Clone Request dialog box. This lets us create a new REST request that contains the headers and authentication already defined on our existing request. This will save time over creating a new REST request from scratch:



Enter the name "**Get_Books**" in the dialog box and click the "Clone" button. This will create a new REST request with this name:



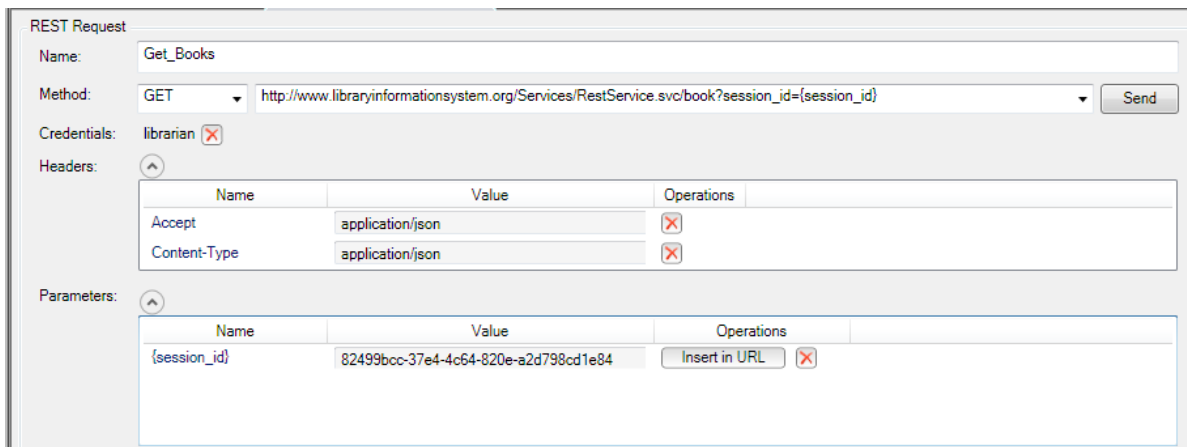
For this request we need to pass through the SessionID in the querystring. Rather than hardcoding it in the URL, we can make use of the parameterization feature of Rapise. Click on the **"Add Parameter"** button in the Rapise REST Ribbon. This will display the "Add Request Parameter" dialog box:



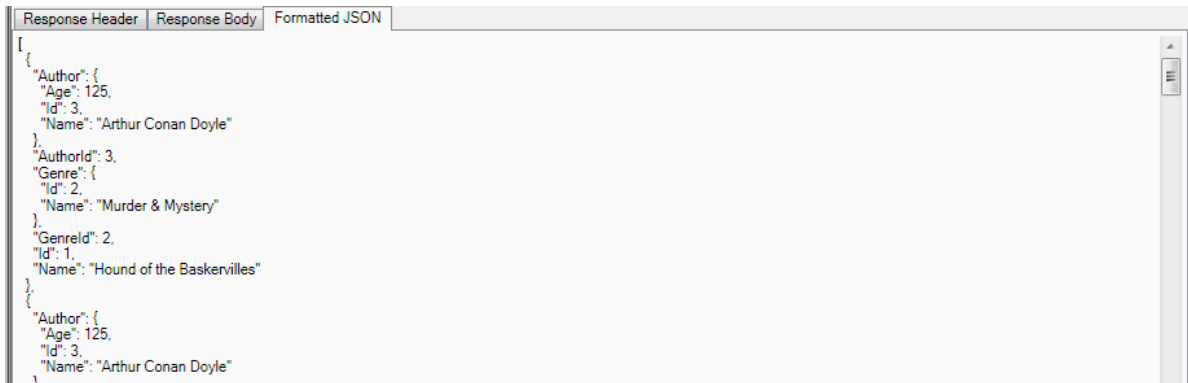
Click the "Add" button and the parameter will be added to the request. Now change the URL to:

URL: `http://www.libraryinformationsystem.org/Services/R`

Then position the caret at the end of this URL and click the "Insert in URL" button. This will insert the parameter token in the URL at the specified point:



Now click the "Send" button and the request will get sent to the web service. This will return the list of books serialized as a JSON array of objects:



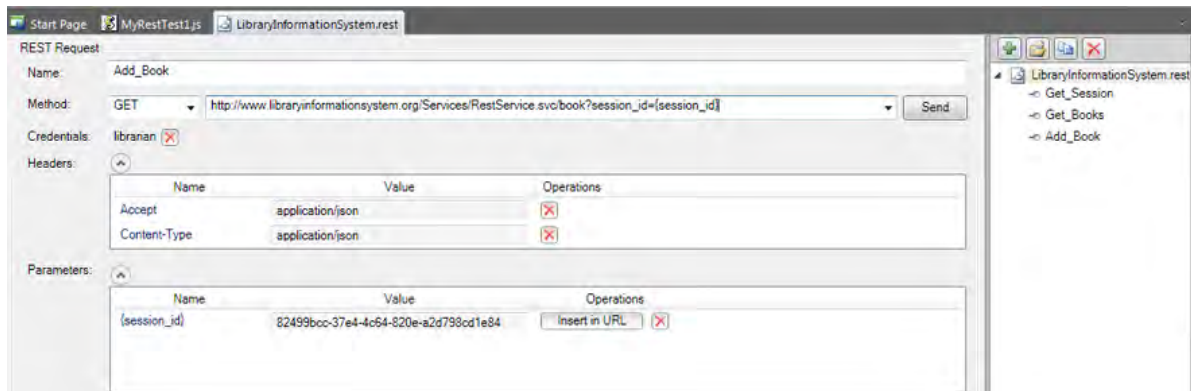
```

{
  "Author": {
    "Age": 125,
    "Id": 3,
    "Name": "Arthur Conan Doyle"
  },
  "AuthorId": 3,
  "Genre": {
    "Id": 2,
    "Name": "Murder & Mystery"
  },
  "GenreId": 2,
  "Id": 1,
  "Name": "Hound of the Baskervilles"
},
{
  "Author": {
    "Age": 125,
    "Id": 3,
    "Name": "Arthur Conan Doyle"
  }
}

```

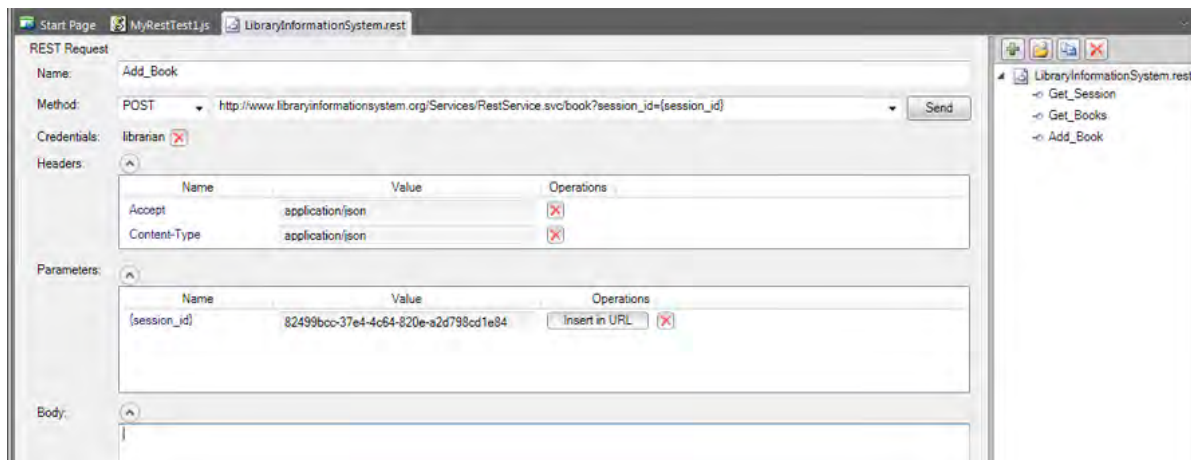
We have now completed the creation of our second test operation. Click on the "Save Requests" button in the Rapise REST Ribbon to make sure our changes have been saved.

Now click on the "Clone request" icon in the REST request explorer in the right-hand side of the screen. Enter the name "Add_Book" in the dialog box and click the "Clone" button. This will create a new REST request with this name:



This operation will add a new book to the system, so it's a POST request. Change the Method type in the dropdown list from "GET" to "POST".

Expand the "Body" field on the form. This is where you can enter in an XML or JSON serialized Book record that will get added to the system. For now we'll leave this blank and let Rapise serialize the body for us later on when we actually write our test script. So we should now have:



We have now completed the creation of our third test operation. Click on the "Save Requests" button in

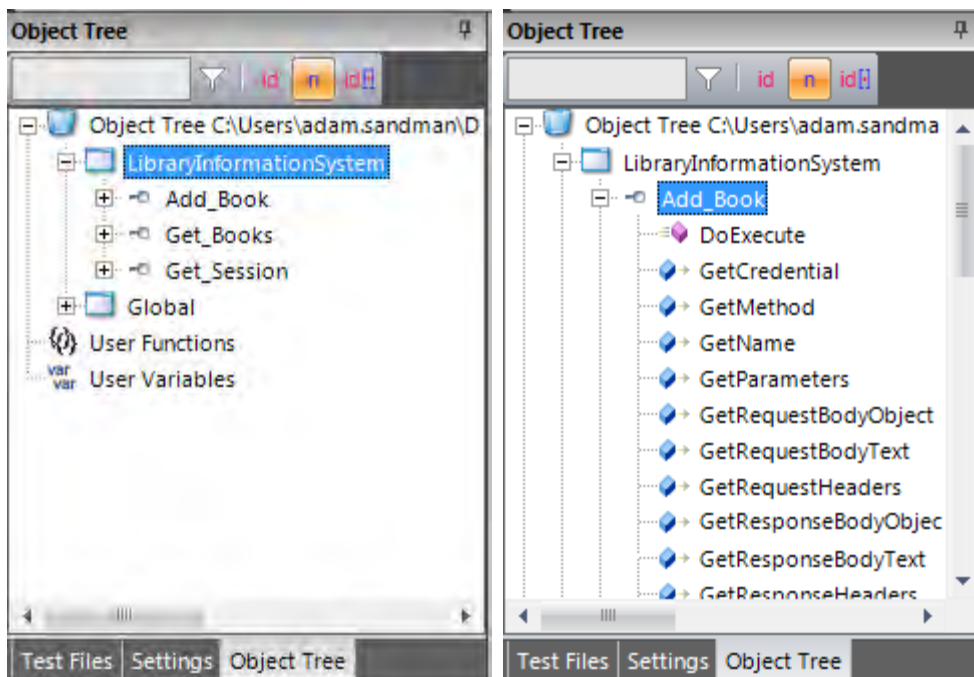
the Rapise REST Ribbon to make sure our changes have been saved.

2. Saving the REST Requests as Objects

Now that we have created our three REST requests, the next step is to actually create the Rapise objects that we can use in our JavaScript test scripts. Click on the "Update Object Tree" button in the Rapise REST Ribbon to tell Rapise to update the Object Tree with our new requests:



Rapise will open a command prompt window in the background and then display a confirmation message once the Object Tree has been updated. Click on the "Object Tree" tab of the main Rapise explorer, click the Refresh icon and you will see the "LibraryInformationSystem" heading displayed, with the three saved REST request listed underneath:



If you expand one of the REST requests (e.g. Add_Book), you'll see that it has a single operation "DoExecute" that executes the web services and a series of properties available for inspecting or updating any part of the REST request prior to it being sent to the server.

In the next section we shall illustrate how you can write a test script using these learned objects.

3. Writing REST Test Scripts

Open up the main **MyRestTest1.js** file in the Rapise editor. It will initially consist of a single empty function Test():

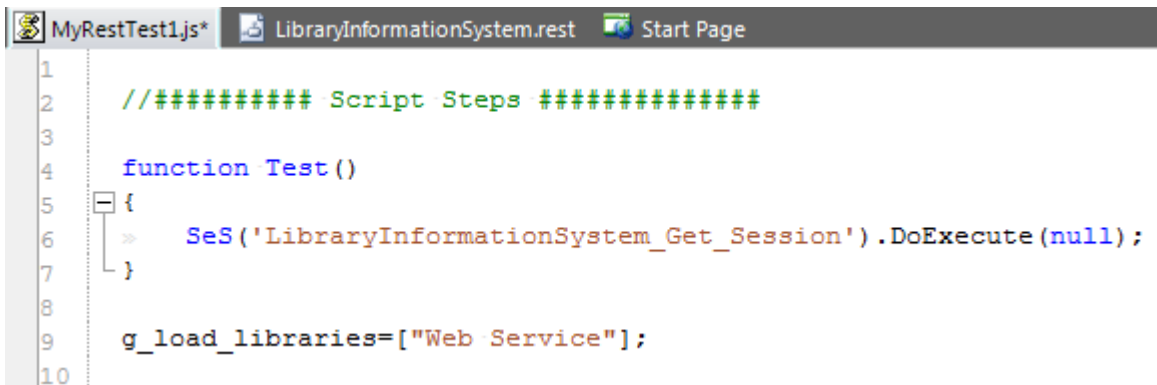


```

1
2 //##### Script Steps #####
3
4 function Test ()
5 {
6
7 }
8
9 g_load_libraries=["Web Service"];
10

```

The first task is to get a new SessionId from the server using the **Get_Session** operation. To do this, drag the **"DoExecute"** operation from under the **"Get_Session"** object into the script editor, in between the opening and closing braces of the `Test()` function:



```

1
2 //##### Script Steps #####
3
4 function Test ()
5 {
6   > SeS('LibraryInformationSystem_Get_Session').DoExecute(null);
7 }
8
9 g_load_libraries=["Web Service"];
10

```

This will execute the web serviced and return the SessionId. To actually access the retrieved value, you need to drag the **"GetResponseBodyObject"** property to the script editor, under the previous line. Then add the JavaScript code `var sessionId =` to actually store the value. We will also add a `Tester.Message(sessionId);` line afterwards to write out the value of the sessionId to the test report. This will help us make sure we are getting back a valid response from the web service. You should now have the following code:

```

function Test ()
{
> SeS('LibraryInformationSystem_Get_Session').DoExecute(null);
> var sessionId = SeS('LibraryInformationSystem_Get_Session').GetResponseBodyObject();
> Tester.Message(sessionId);
}

g_load_libraries=["Web Service"];

```

Save this test and click "Play" to execute the test. You should now see a report similar to the following:

#	Name	Start	Type	Status	Comment	Iteration
	Starting scenario: Test	13:37:16.020	Message	Info		
	Get_Session.DoExecute([null])	13:37:17.486	Assert	Pass	Returned Value: true	0
	d51f97ea-d879-4eb1-b585-55469b88cef7	13:37:17.486	Message	Info		0
	MyRestTest1	13:37:17.486	Test	Pass	Passed:1 Failed:0	

Test Pass
Total: 4 Pass: 2 Fail: 0 Info: 2

Now we need to add the code to get the list of books. To do that, simply drag the **"DoExecute"** operation from under the **"Get_Books"** object into the script editor. Then change the `(null)` argument to instead provide the session id as a Javascript dictionary:

```
SeS('LibraryInformationSystem_Get_Books').DoExecute({
```

To get the list of books as a JavaScript array, drag the **"GetResponseBodyObject"** property to the script editor, under the previous line. Then assign the value of this property to a variable such as **"books"**:

```
var books = SeS('LibraryInformationSystem_Get_Books')
```

Now we can add code to test that the number of books returned matches the expected value. Type in the following code:

```
Tester.AssertEqual('Book count matches', 14, books.length);
```

You should now have the following code:

```
function Test()
{
  SeS('LibraryInformationSystem_Get_Session').DoExecute(null);
  var sessionId = SeS('LibraryInformationSystem_Get_Session').GetResponseBodyObject();
  Tester.Message(sessionId);

  SeS('LibraryInformationSystem_Get_Books').DoExecute({"session_id":sessionId});
  var books = SeS('LibraryInformationSystem_Get_Books').GetResponseBodyObject();
  Tester.AssertEqual('Book count matches', 14, books.length);
}

g_load_libraries=["Web Service"];
```

Finally we need to add the code to add a new book to the system. To do that, simply drag the **"DoExecute"** operation from under the **"Add_Book"** object into the script editor. Then change the `(null)` argument to instead provide the session id as a Javascript dictionary:

```
SeS('LibraryInformationSystem_Add_Book').DoExecute({"se
```

To provide the data for a new book, we will need to drag the **"SetRequestBodyObject"** property of the **"Add_Book"** object to the line **above** the DoExecute and pass in a populated JavaScript object:

```
var newBook = {};
newBook.Name = 'A Christmas Carol';
newBook.AuthorId = 2;
newBook.GenreId = 3;
SeS('LibraryInformationSystem_Add_Book').SetRequestBo
```

Finally Add code to test that our new book was added correctly and the count has increased by one:

```
SeS('LibraryInformationSystem_Get_Books').DoExecute({"se
books = SeS('LibraryInformationSystem_Get_Books').GetRes
Tester.AssertEqual('Book count matches', 15, books.length);
```

You should now have the following code:

```

function Test ()
{
  >> SeS('LibraryInformationSystem_Get_Session').DoExecute(null);
  >> var sessionId = SeS('LibraryInformationSystem_Get_Session').GetResponseBodyObject();
  >> Tester.Message(sessionId);
  >>
  >> SeS('LibraryInformationSystem_Get_Books').DoExecute({"session_id":sessionId});
  >> var books = SeS('LibraryInformationSystem_Get_Books').GetResponseBodyObject();
  >> Tester.AssertEqual('Book count matches', 14, books.length);
  >>
  >> var newBook = {};
  >> newBook.Name = 'A Christmas Carol';
  >> newBook.AuthorId = 2;
  >> newBook.GenreId = 3;
  >> SeS('LibraryInformationSystem_Add_Book').SetRequestBodyObject(newBook);
  >> SeS('LibraryInformationSystem_Add_Book').DoExecute({"session_id":sessionId});
  >>
  >> SeS('LibraryInformationSystem_Get_Books').DoExecute({"session_id":sessionId});
  >> books = SeS('LibraryInformationSystem_Get_Books').GetResponseBodyObject();
  >> Tester.AssertEqual('Book count matches', 15, books.length);
}

```

Save this test and click "Play" to execute the test. You should now see a report similar to the following:

#	Name	Start	Type	Status	Comment	Iteration
	Starting scenario: Test	14:49:03.725	Message	Info		
	Get_Session.DoExecute([null])	14:49:04.334	Assert	Pass	Returned Value: true	0
	c3d8dcd4-6125-427d-939a-0dd181b3cce1	14:49:04.334	Message	Info		0
	Get_Books.DoExecute(["session_id":"c3d8dcd4-6125-4	14:49:05.051	Assert	Pass	Returned Value: true	0
	Book count matches	14:49:05.051	Assert	Pass		0
	Add_Book.DoExecute(["session_id":"c3d8dcd4-6125-4	14:49:05.379	Assert	Pass	Returned Value: true	0
	Get_Books.DoExecute(["session_id":"c3d8dcd4-6125-4	14:49:05.597	Assert	Pass	Returned Value: true	0
	Book count matches	14:49:05.597	Assert	Pass		0
	MyRestTest1	14:49:05.597	Test	Pass	Passed:6 Failed:0	

Test Pass
Total:9 Pass:7 Fail:0 Info:2

Congratulations! You have just created your first test script that tests a RESTful web service.

2.3.7 Tutorial: Mobile Testing

Purpose

Rapise lets you record and play automated tests against native applications on a variety of mobile devices using either [Apple iOS](#) or [Android](#). Rapise gives you the flexibility to test your applications on either real or simulated devices.

This tutorial is a **simple example** of using Rapise to record and playback a simple test against a sample **Android application** running on the **Android Simulator** on your local PC. It does not require any physical mobile devices and only uses the PC that you have already installed Rapise on. (*There is [other documentation](#) that describes the full range of mobile testing options*)

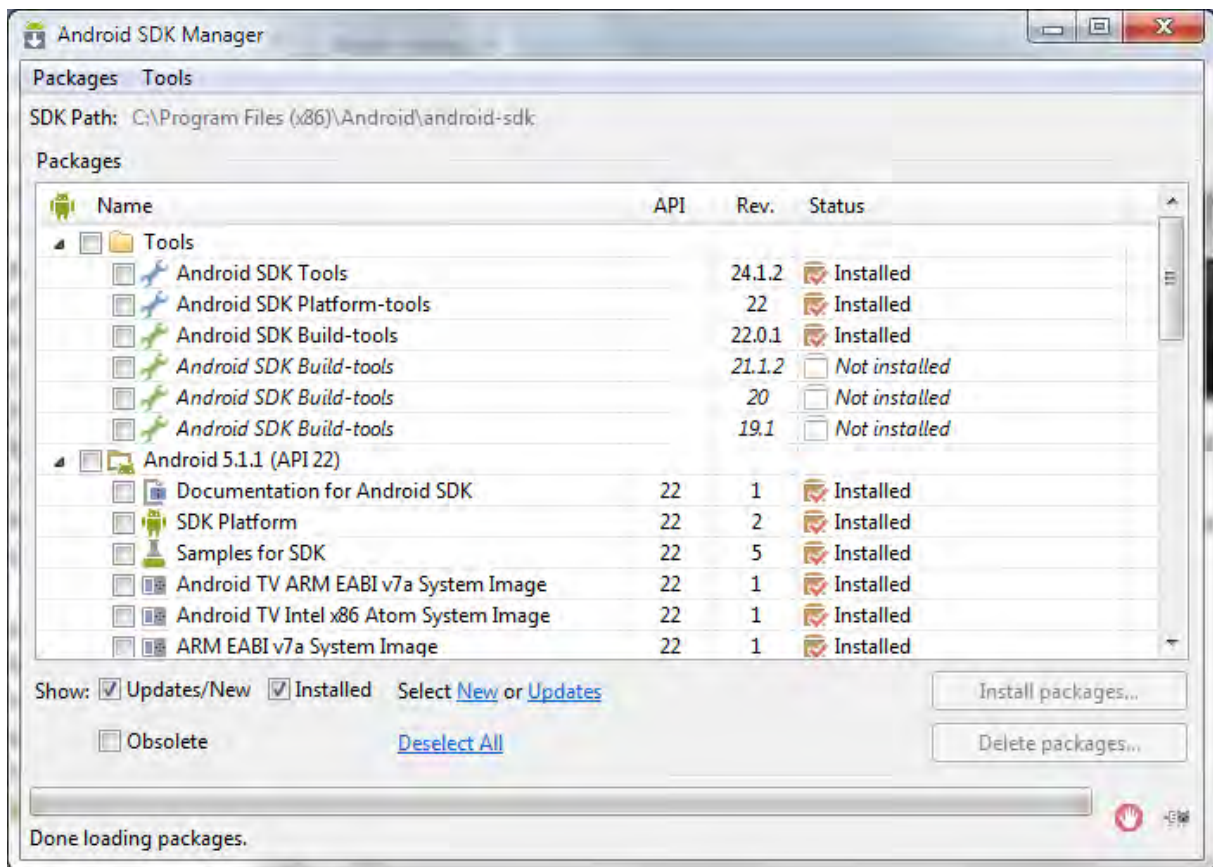
1) Setting up Appium and the Android SDK

The first thing you need to do is go to the **Appium** website (<http://appium.io>) and install the latest version of Appium. Once it is installed, you can start it up and click the Play button to start the Appium server:

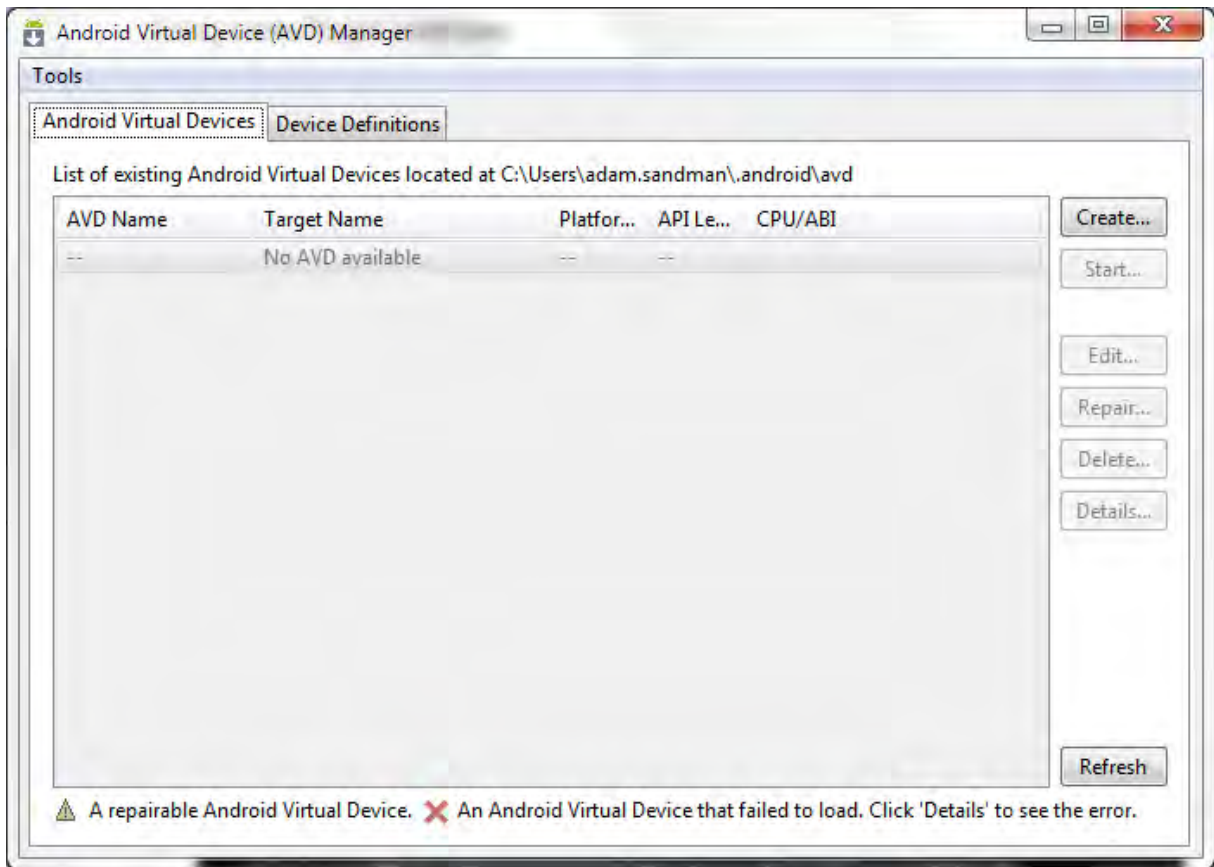


Once that is installed, you will then need to install the Android SDK (you may already have it installed if you are doing Android development). You can download it from: <https://developer.android.com/sdk>.

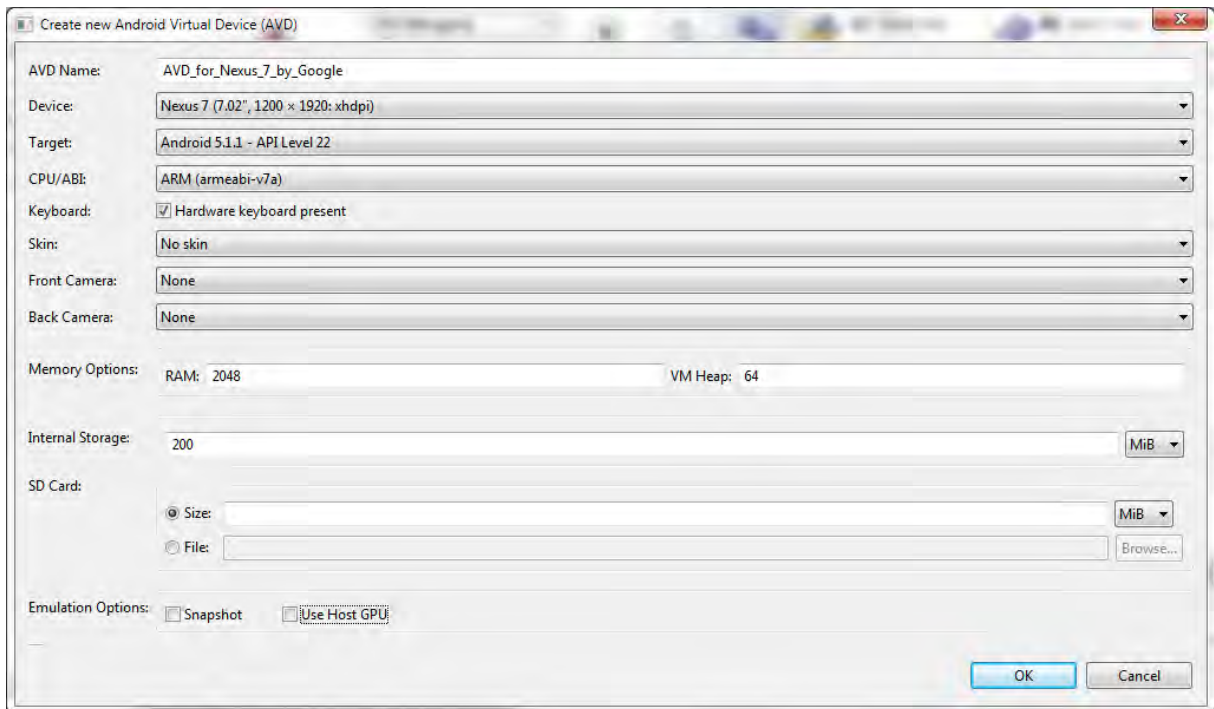
Once it has installed, you will use the **Android SDK Manager** to download and install the necessary packages:



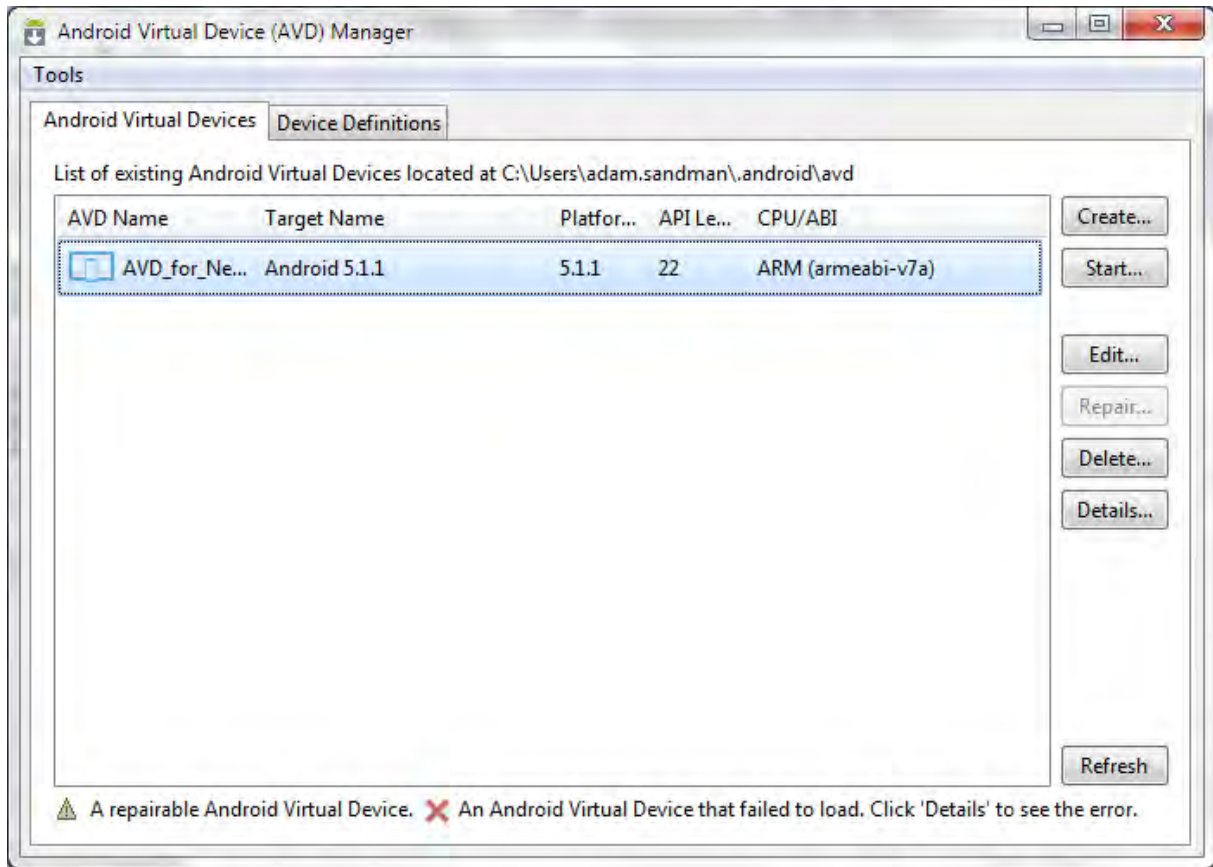
Make sure you have installed the **Android ARM images** using the SDK manager. Then you can launch (from the Windows Start Menu) the **Android Virtual Device (AVD) Manager**:



Use the **Create** button to create the following Virtual Device:



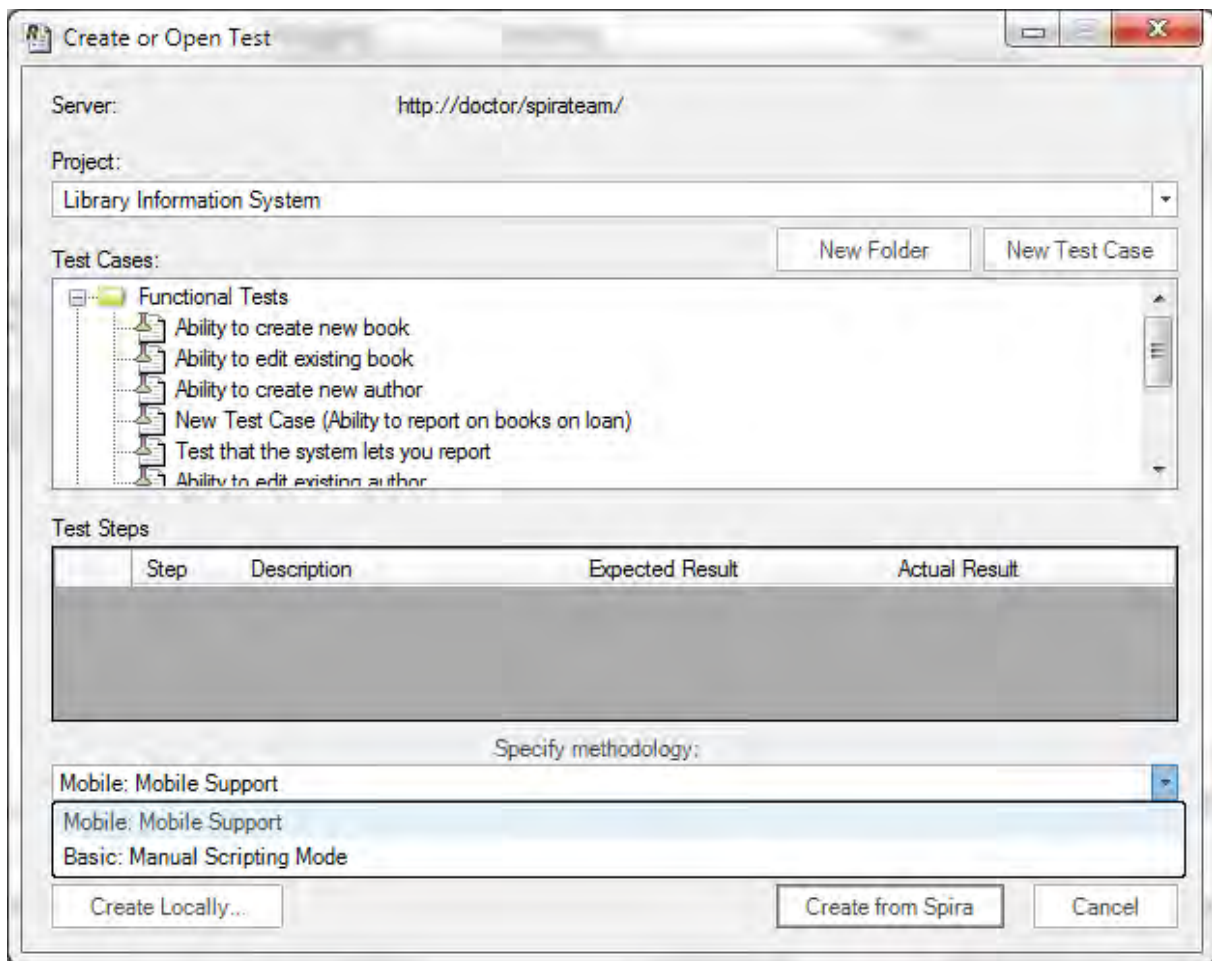
You may need to modify the RAM / Heap parameters to match that which is supported by the physical PC that you are using. Once the device has been created:



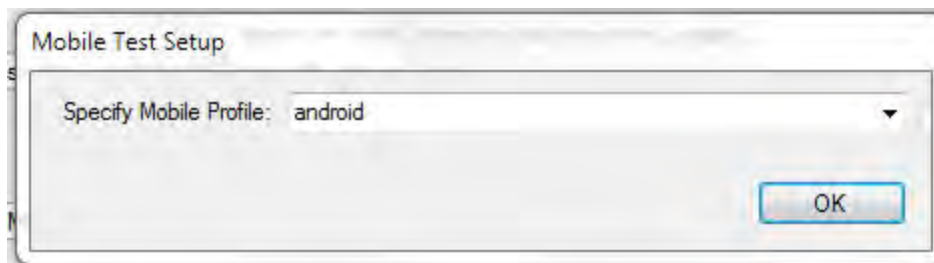
you can then click **Start** to start the device and then connect to it using Rapise.

2) Configure the Mobile Profile

To begin the actual mobile testing, [create a new test](#), using the **File > New Test** option in Rapise. Make sure you choose the mobile methodology option "Mobile: Mobile Support":

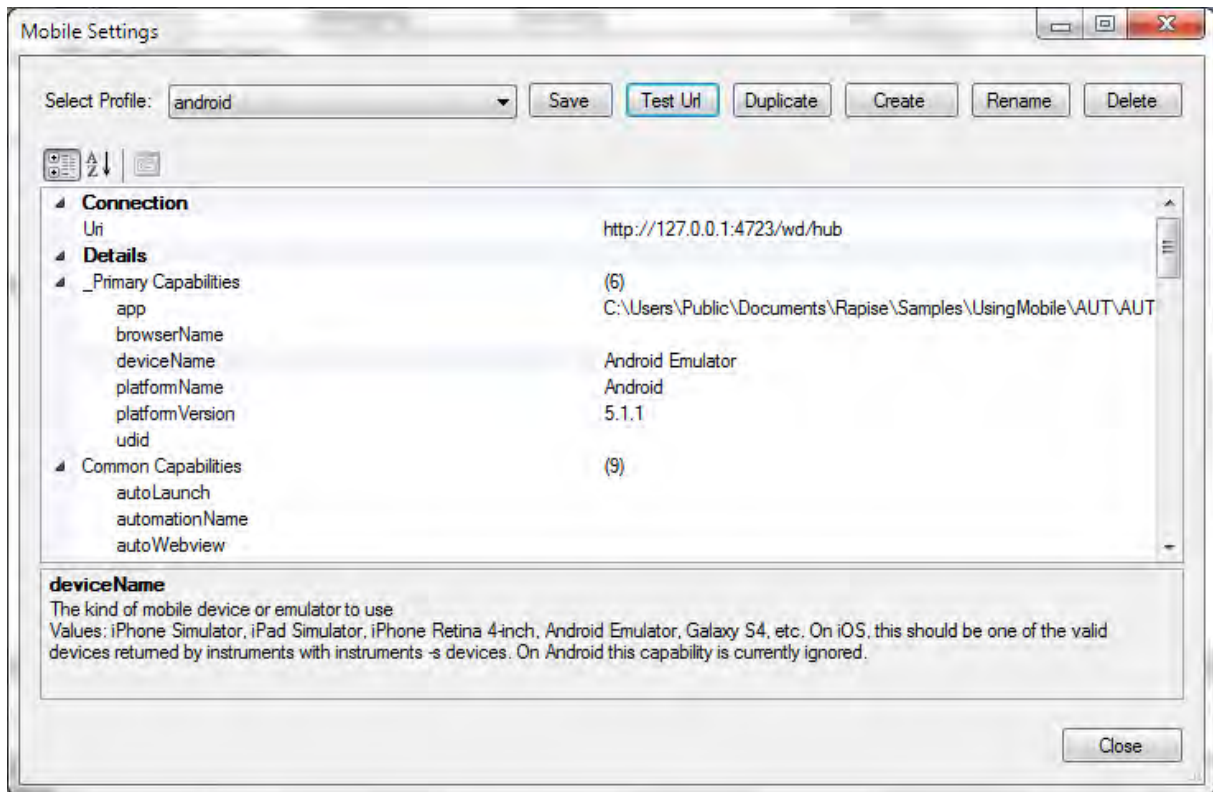


Once you have entered the name for the new test (with the mobile methodology selected) you will be asked to choose the mobile profile. Rapise ships with several default profiles, for now select the one that is closed to the device you want to test (we recommend the **android** generic profile):



When you click the **[OK]** button, Rapise will create a new mobile test with this profile selected.

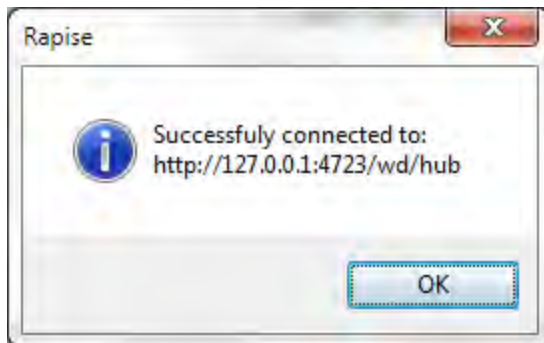
Now you need to modify the profile so that it correctly matches the type of device you are testing and also so that it correctly points to the [Appium](#) server that you are using to host the mobile devices. Click on Options > Tools > Mobile Settings to bring up the [Mobile Settings](#) dialog box:



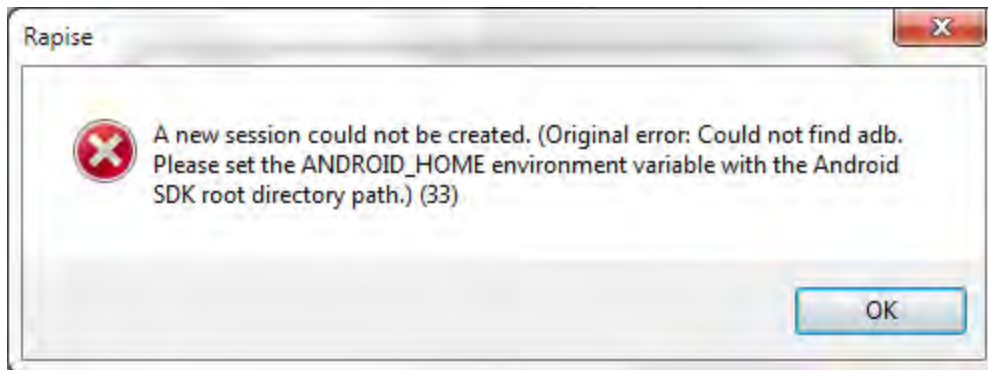
In the mobile profile screen, make sure you change the following:

- **app** - this needs to be the path to the Application being tested on the device (e.g. C:\Users\Public\Documents\Rapise\Samples\UsingMobile\AUT\AUTAndroid\bin\AUTAndroid.apk). This path should be already correct, but it is worth double-checking
- **deviceName** - this needs to match the name of the device being connected
- **platformName** - this needs to be set to 'Android'
- **platformVersion** - this needs to be set to the same version of Android that the virtual device is running (the one specified in the Android Virtual Device screen earlier)

Once you have entered in the information and saved the profile, make sure that Appium is running on the PC and then click the **[Test URL]** button to verify the connection with Appium:



Now when you try and [connect to the device](#) using the [Rapise mobile spy](#), you may get the following message:



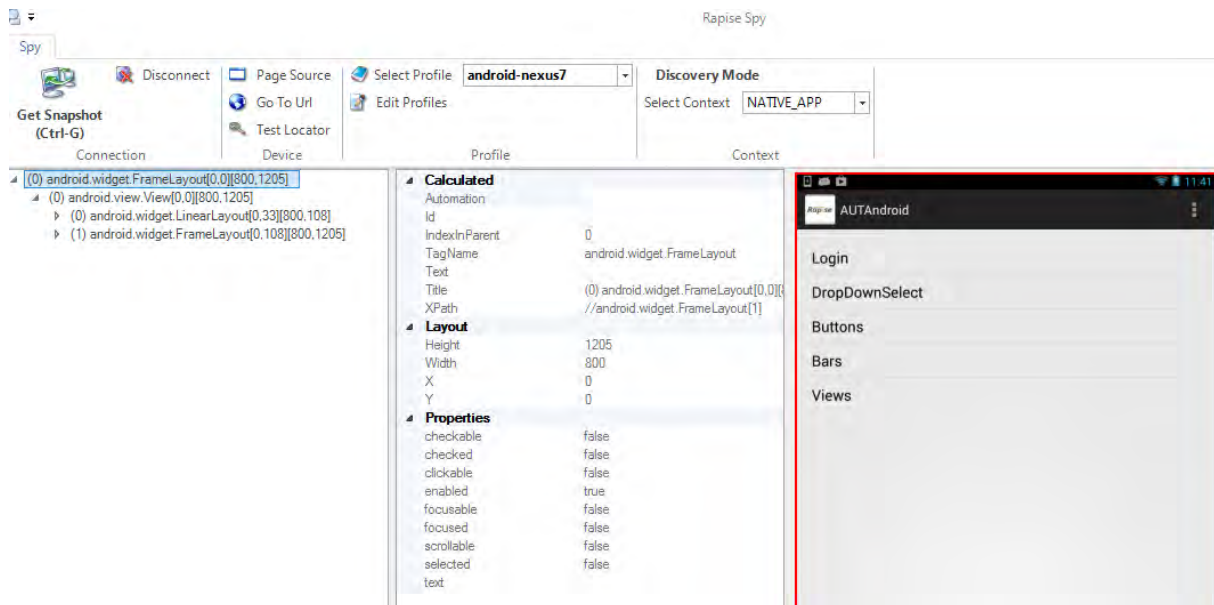
This means you need to use the Windows control panel to add a **System environment variable** called **ANDROID_HOME** and set it to the path of the installed Android SDK (typically `C:\Program Files (x86)\Android\android-sdk`).

Once you have configured the `ANDROID_HOME` and it connects, you can start testing your mobile Android application.

3) Using the Mobile Spy

The Mobile Spy will let you view an application running on the mobile device, take a snapshot of its screen and then interactively inspect the objects in the application being tested. This is a useful first step to make sure that Rapise recognizes the application and has access to the objects in the user interface.

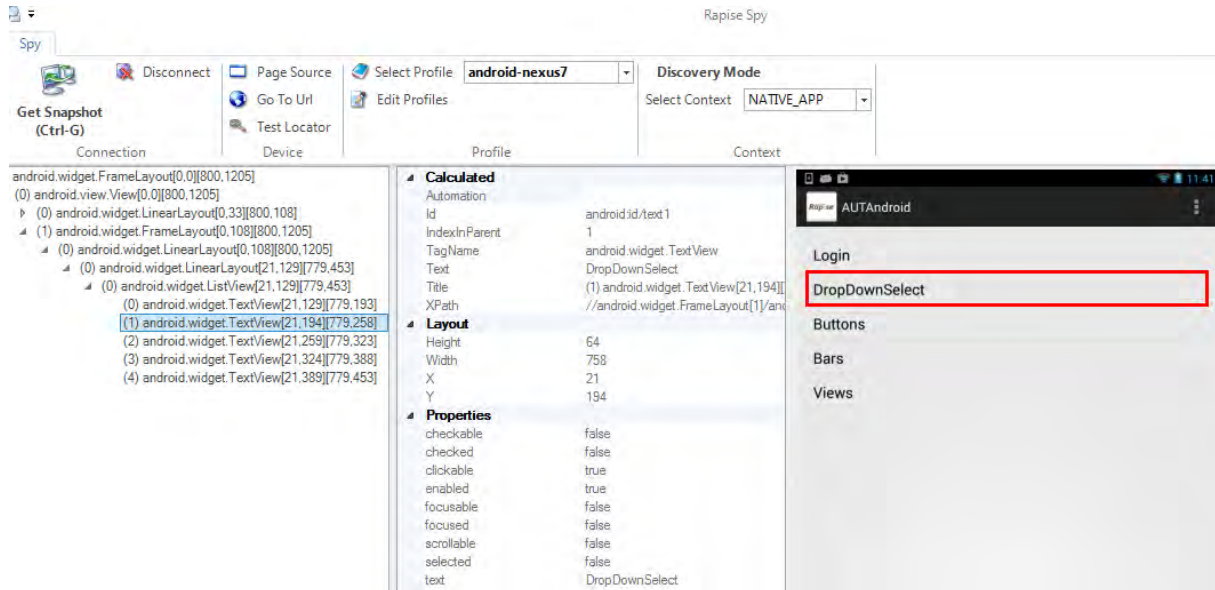
To start the Mobile Spy, open the Spy icon on the main [Test ribbon](#) and select the Mobile option and the Mobile Spy will be displayed in **Discovery Mode**. Now click the **[Get Snapshot]** button to display the application specified in the [mobile profile](#) on the screen:



In the example above, we are displaying the sample Android application that comes with Rapise (AUTAndroid).

If you click on one objects in the user interface, it will be highlighted in Red and the tree hierarchy on the

left will expand to show the properties of that object:

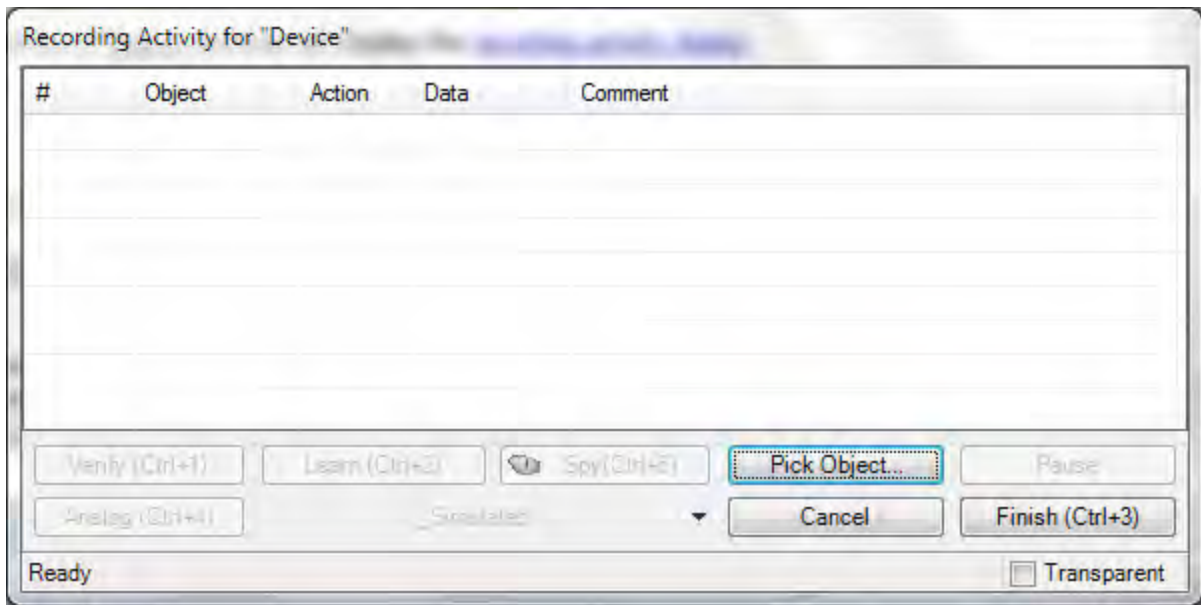


If you want to view the contents of the Spy as a text file, just click the '**Page Source**' button and you will see the contents of the Spy properties window as a text file.

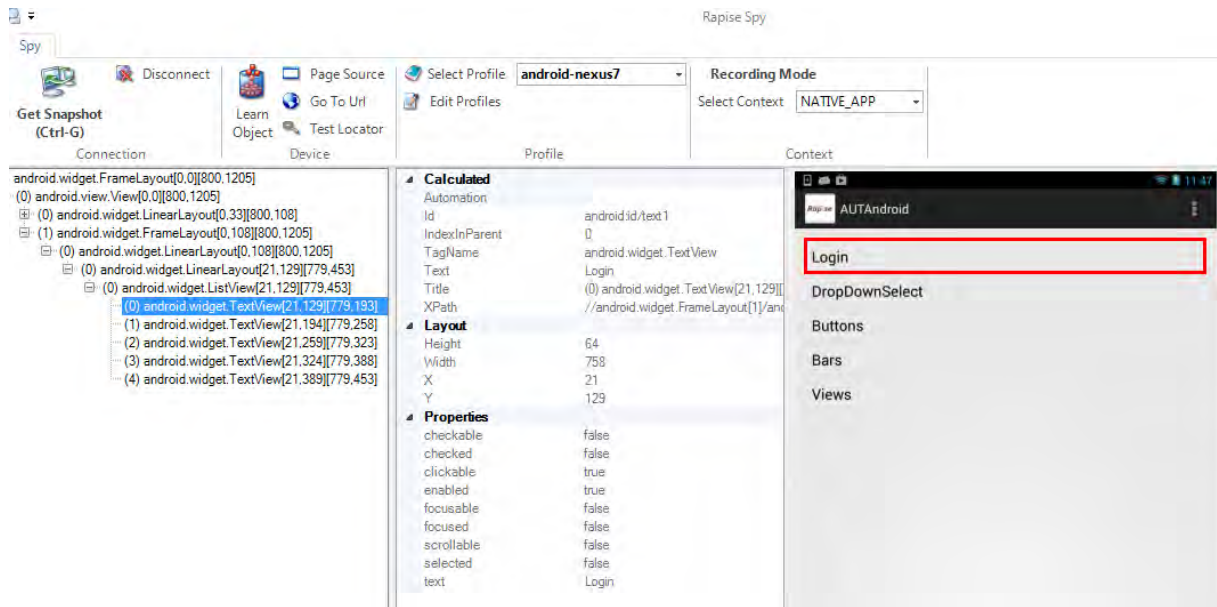
Assuming that you can see your application in the Spy and that the objects can be inspected (similar to that shown above) you can now begin the process of testing your mobile application. Click on **Disconnect** to end your Spy session and close the Rapise Spy dialog. You will now will be returned back to your test script.

4) Recording and Playing a Test

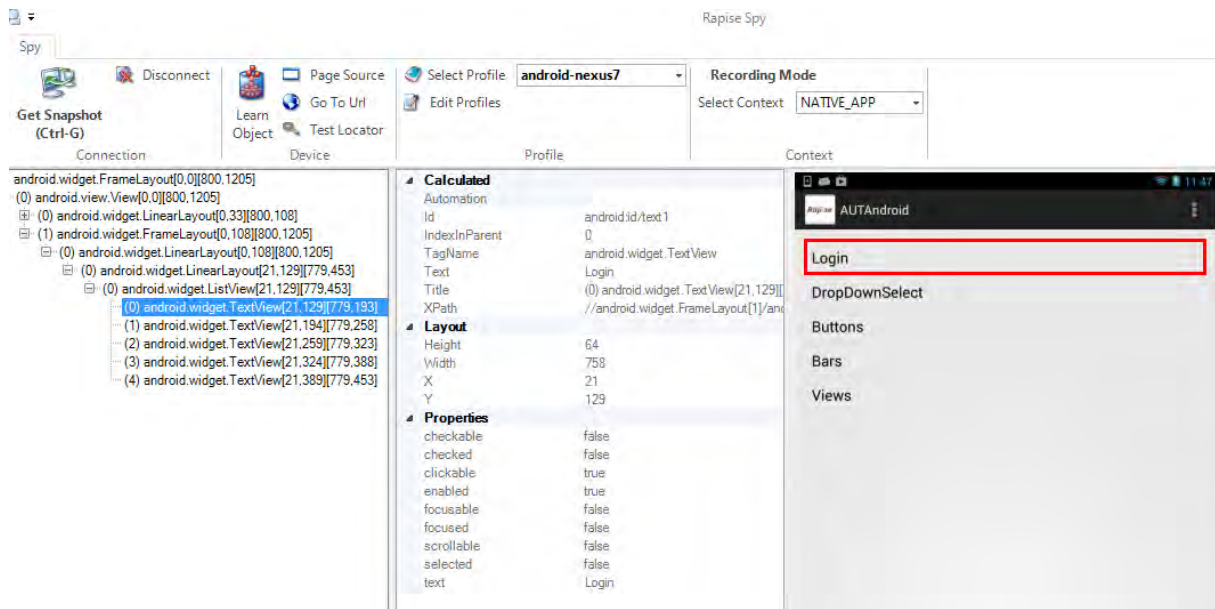
With the new Rapise mobile test script open, click on the **Record/Learn** button in Rapise and that will display the [recording activity dialog](#):



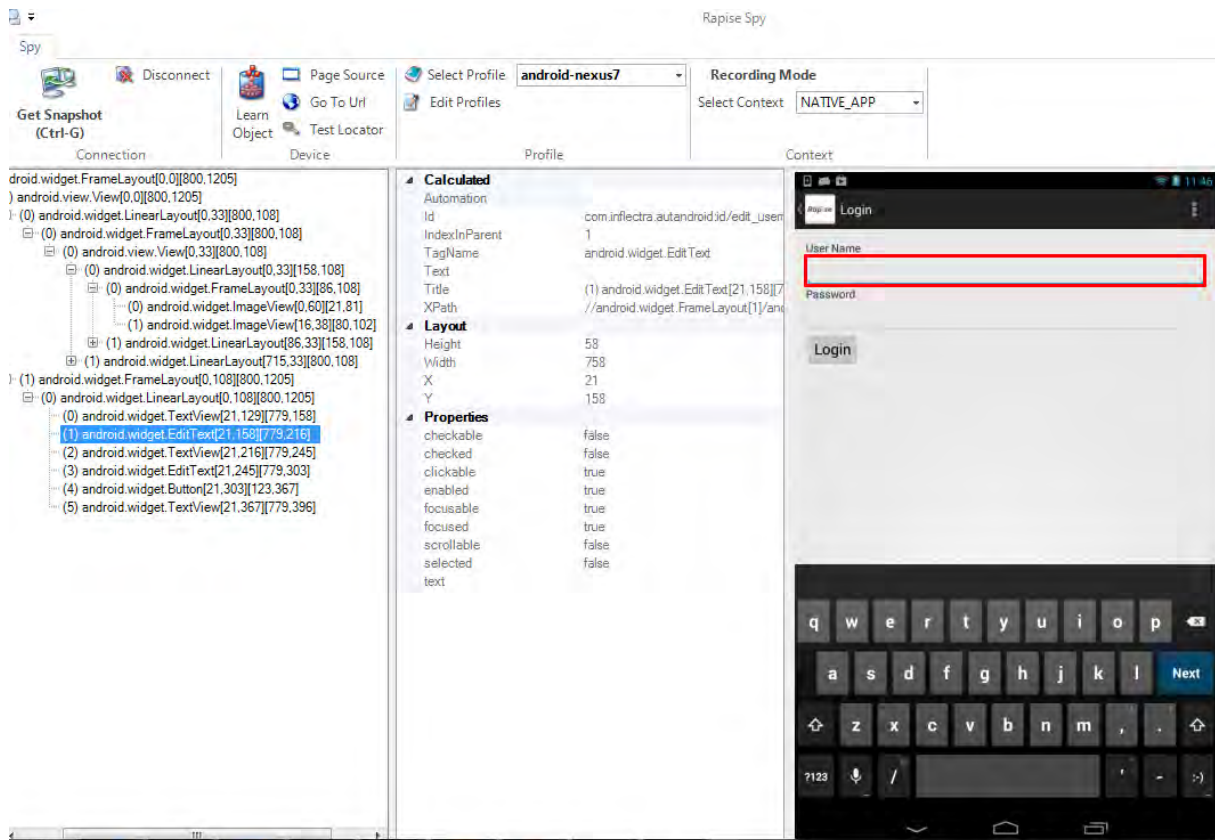
Now click on the **[Pick Object]** button and the Rapise Spy will be displayed in **Recording Mode**:



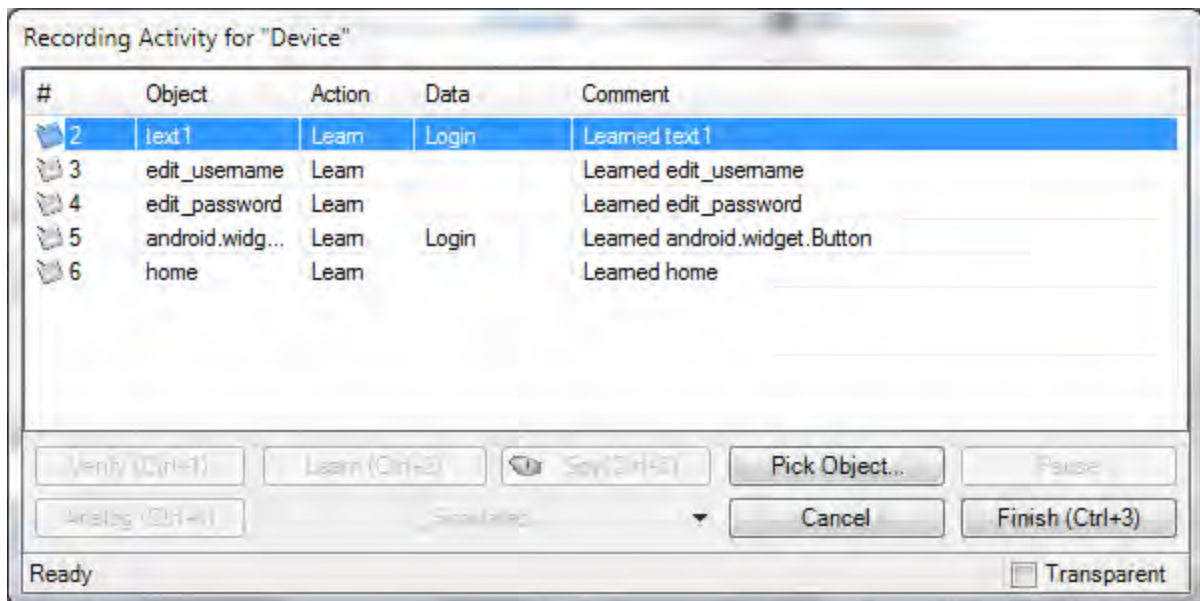
We now want to record a click on one of the menu options, simply highlight one of the menu entries (e.g. "Login"):



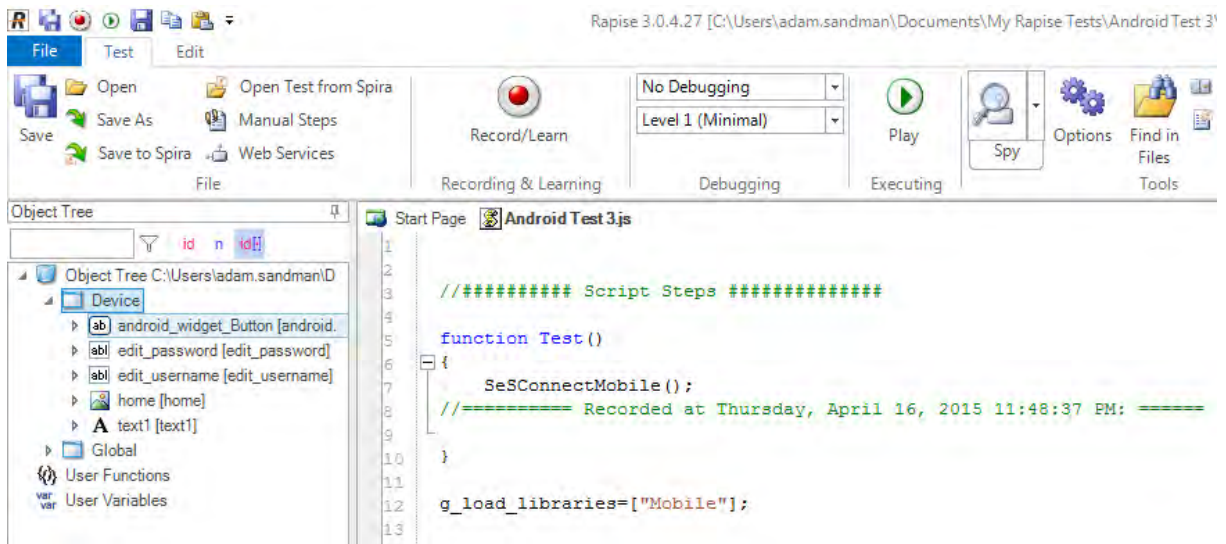
Now click the **[Learn Object]** button and the object will be added to the Rapise [object tree](#). Now on the **virtual device window** click on the menu entry to go to the next screen, then in Rapise click **Get Snapshot** to get the updated screen:



Now click on some of the objects and choose **Learn** to add them to the [object tree](#). Once you are finished, click on the **Disconnect** button. You will see the events in the recording activity dialog:



Now click on the **Finish** button and you will be taken back to the test script with the Android objects listed:



Now that we have the objects, we can drag them into the test script editor and write the following script:

```

//##### Script Steps #####

function Test()
{
    SeSConnectMobile();

    SeS('text1').DoClick();
    SeS('edit_username').DoSetText('test user');
    SeS('edit_password').DoSetText('test pwd');
}

```

```

    SeS('android_widget_Button').DoClick();
    SeS('home').DoAction();
}

g_load_libraries=["Mobile"];

```

This will click on the first menu entry, then enter a username and password and then finally return back to the main menu.

Now to playback the test simply click **Play** in the Rapise test ribbon and the test will play back in the mobile device:

#	Type	Start	Name	Status	Comment	Iteration
	Message	23:50:41.088	Starting scenario: Test	Info		
	Assert	23:50:56.250	text1.DoClick([])	Pass	Returned Value: true	0
	Assert	23:51:05.477	edit_username.DoSetText(["test user"])	Pass	Returned Value: true	0
	Assert	23:51:14.211	edit_password.DoSetText(["test pwd"])	Pass	Returned Value: true	0
	Assert	23:51:18.253	android.widget.Button.DoClick([])	Pass	Returned Value: true	0
	Assert	23:51:19.129	home.DoAction([])	Pass	Returned Value: true	0
	Test	23:51:19.131	Android Test 3	Pass	Passed:5 Failed:0	

Test Pass
Total: 7 Pass: 6 Fail: 0 Info: 1

This is the report of the test being executed.

Example

You can find the Android sample tests and sample Application (called AUTAndroid) in your Rapise installation at the following locations:

Sample Android Tests:

- C:\Users\Public\Documents\Rapise\Samples\UsingMobile\AppAndroid (testing a native App)
- C:\Users\Public\Documents\Rapise\Samples\UsingMobile\WebAndroid (testing a web app)

Sample Application (AUTAndroid)

- C:\Users\Public\Documents\Rapise\Samples\UsingMobile\AUT\AUTAndroid

(we supply the sample application as both a compiled .apk binary and an Android Studio Java project with source code)

See Also

- [Mobile Testing](#), for an overview of mobile testing with sub-sections on testing:
 - using [iOS](#)
 - using [Android](#).
- [Mobile Settings Dialog](#) - for information on setting up the different **mobile profiles** for the mobile devices you will be testing
- [Mobile Object Spy](#) - for information on how Rapise connects to the device and lets you view the objects in the application being tested
- [Technologies - Mobile Testing](#), for instructions on preparing your environment for mobile testing, including instructions for installing the necessary prerequisites and configuring the various third-party

components that Rapise uses to connect to the device.

- o [Mobile Testing: iOS Setup](#) - the steps for setting up Xcode and the iOS SDK for testing iOS devices

2.3.8 Tutorial: Exploratory Testing

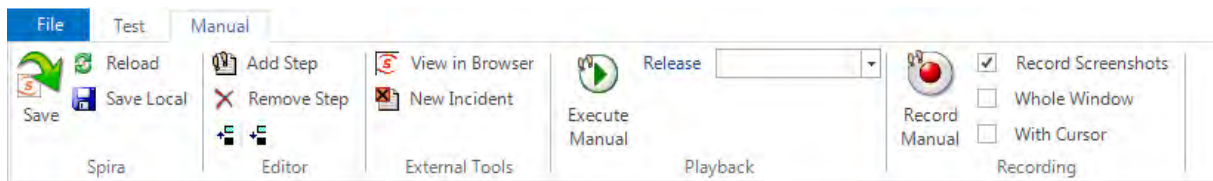
Purpose

Exploratory manual testing is used for situations where you have a **new or changing application** and the user interface is still evolving. Traditional manual testing, where you create a test case ahead of time, define the prescriptive test steps and then assign it to the tester does not make sense in such cases. The solution is to perform **exploratory testing**, where you explore using the application at the same time as creating the test script. The created test script can then be published to your test management system (i.e. [SpiraTest](#)) for future regression testing.

Rapise can help **accelerate and optimize** exploratory manual testing. Rapise lets you walk through the application, capturing your interactions as you use it, recording screenshots of the objects and screens you interact with. From this, Rapise will create a fully formed test script ready to use.

Step 1 - Creating a New Test

To start manual testing, simply create your test as normal using the [New Test](#) dialog box. Then once the test has been created, click on the "Manual Steps" icon in the Test ribbon and then you will be taken to the [Manual Editor](#) with the [Manual Test Ribbon](#) Visible:



The test step list will initially be empty:

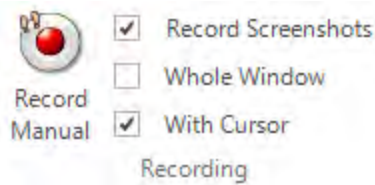
The image shows a web-based interface for editing test steps. At the top, there are tabs for 'Start Page', 'MS-Paint Test TC34.js', and 'ManualSteps.mnt'. Below the tabs, there is a dropdown menu for 'MS-Paint Test'. The main area contains a table with the following columns: 'StepId', 'Description', 'Expected Result', and 'Sample Data'. The table is currently empty.

StepId	Description	Expected Result	Sample Data
--------	-------------	-----------------	-------------

Step 2 - Recording Some Steps

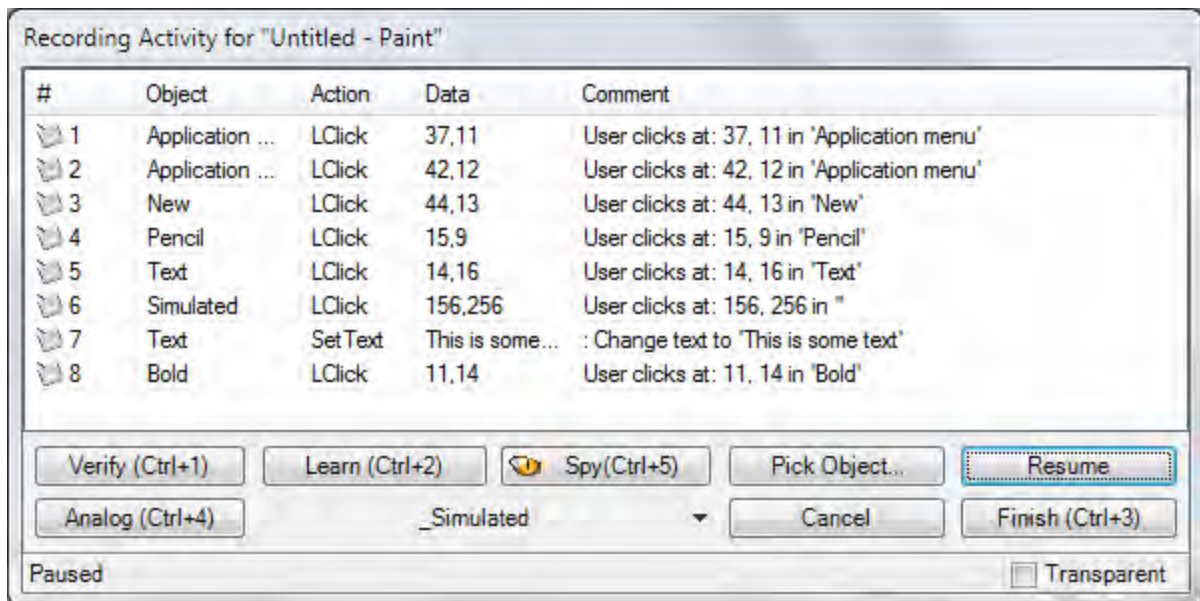
Now you should open up the application you want to record from. In this example we shall be testing the built-in **Microsoft Paint** application. This is a good candidate for manual testing as a lot of the functionality is hard to test automatically since there is a simple drawing canvas rather than discrete buttons and data elements to test.

To make sure that we have screenshots recorded, whilst keeping the size of the screenshots reasonable, use the following recording options:

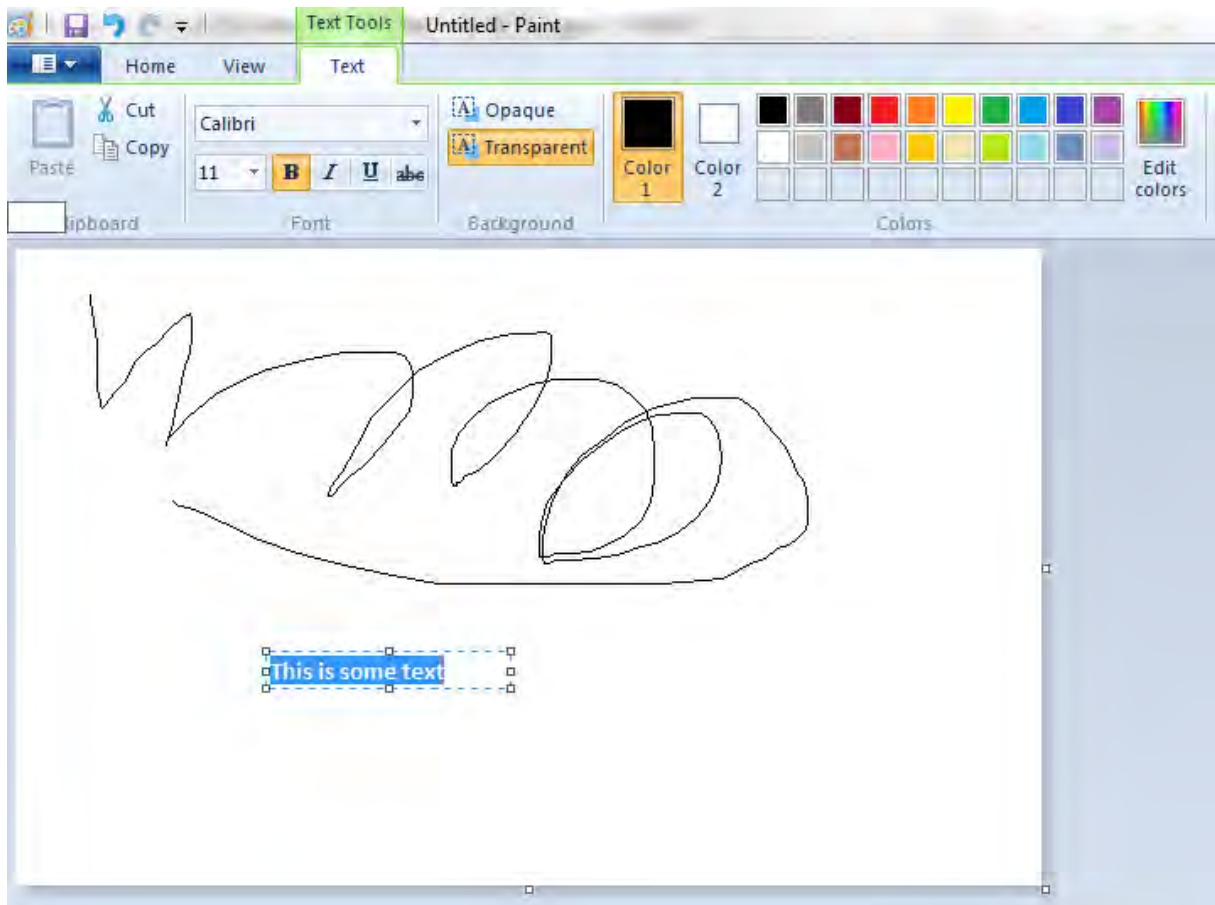


Now click the **'Record Manual'** button and choose MS-Paint from the list of running applications in [Select Application to Record](#) dialog and then click **'Select'** to start recording.

As you click through the application, the recording will display the list of steps and actions being captured:



In this example, we created a new canvas, chose the Pencil tool, created a drawing using the pencil, entered some text and then made it bold:







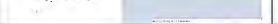
When you click **Finish** to complete the recording, Rapise will now display the list of populated manual test steps with the embedded screen captures:

StepId	Description	Expected Result	Sample Data
Step 1	User clicks at: 37, 11 in 'Application menu'		SeS('Application_menu').DoLClick(37, 11);
Step 2	User clicks at: 42, 12 in 'Application menu'		SeS('Application_menu').DoLClick(42, 12);
Step 3	User clicks at: 44, 13 in 'New'		SeS('New').DoLClick(44, 13);
Step 4	User clicks at: 15, 9 in 'Pencil'		SeS('Pencil').DoLClick(15, 9);
Step 5	User clicks at: 14, 16 in 'Text'		SeS('Text').DoLClick(14, 16);
Step 6	User clicks at: 156, 256 in ''		SeS('Simulated').DoLClick(156, 256);

You will notice that the description of each test step will use the form "User [action] at [coordinates] in '[object name]'" and the expected result will include the screenshot of what the user was doing. In addition, the sample data will contains the equivalent Rapise automation code for reference. This can be useful later if you decide to automate this test.

Step 3 - Editing the Steps

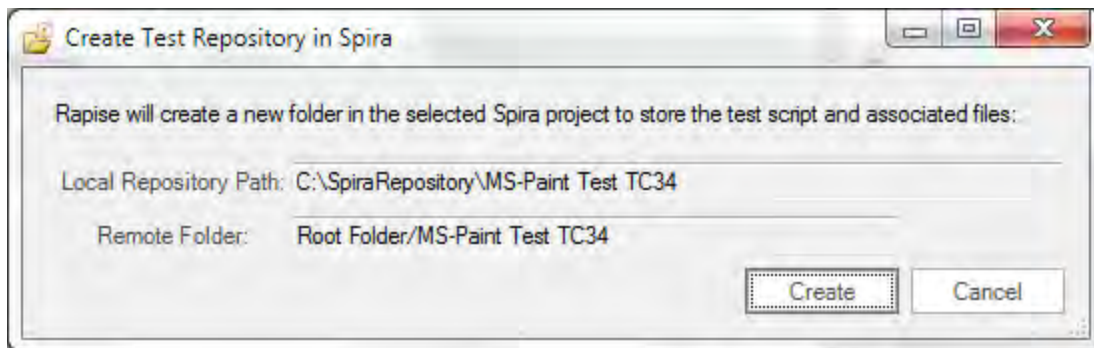
Typically you may want to **add some additional steps** (e.g. we added a line to describe the process of starting up MS Paint), **delete any duplicate/unnecessary steps** and **reword them** so that they make the most sense to the tester. In our example we used the [manual editing](#) screen to update the steps as follows:

StepId	Description	Expected Result	Sample Data
Step 1	User starts up the MS-Paint Application	The application loads with a blank canvas	
Step 2	User clicks the main 'Application menu'		SeS('Application_menu').DoLClick(42, 12);
Step 3	User clicks the 'New' entry		SeS('New').DoLClick(44, 13);
Step 4	User clicks on 'Pencil'		SeS('Pencil').DoLClick(15, 9);
Step 5	User clicks the 'Text' tool		SeS('Text').DoLClick(14, 16);
Step 6	User clicks at: 156, 256 in the canvas		SeS('Simulated').DoLClick(156, 256);

Click **Save** to make sure the updates are all saved locally. Now before you can [execute these tests](#), you will need to Save them to [Spira](#) (our web-based test management system).

Step 4 - Saving to Spira

Click on the option to **Save to Spira**, you will be asked to confirm the creation of the document folder in Spira that will hold the test files:



Click on **'Create'** and then the manual test will be saved to Spira. You will see that this process adds the unique Spira test step IDs to each step. They are displayed using the format `[TS:xxx]`. This special token `[TS:xxx]` can be used in `Tester.Assert` commands to relate specific [verification points](#) with test steps during automated testing.

StepId	Description	Expected Result	Sample Data
[TS:47]			
Step 4 [TS:48]	User clicks on 'Pencil'		SeS('Pencil').DoLClick(15, 9);
Step 5 [TS:49]	User clicks the 'Text' tool		SeS('Text').DoLClick(14, 16);
Step 6 [TS:50]	User clicks at: 156, 256 in the canvas		SeS('Simulated').DoLClick(156, 256);
Step 7 [TS:51]	Enters text 'This is some text'	This is some text	SeS('Text1').DoSetText("This is some text\r");
Step 8	User clicks on the 'Bold' button		SeS('Bold').DoLClick(11, 14);

Now that the test has been saved in Spira, you can click on the **'View in Browser'** option to see how the test steps look inside Spira.

▼ Test Steps

> [Insert Step](#) | [Insert Link](#) | [Delete](#) | [Copy](#) | [Refresh](#) | -- Show/hide columns -- | [Edit Parameters](#)

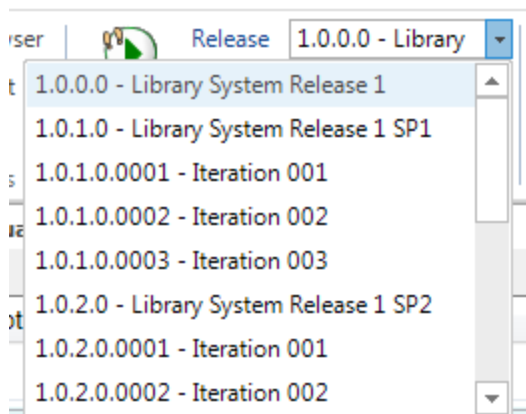
<input type="checkbox"/>	Step #	Description	Expected Result	Sample Data	Execution Status	ID	Edit
<input type="checkbox"/>	Step 1	User starts up the MS-Paint Application	The application loads with a blank canvas		Not Run	TS000045	Edit
<input type="checkbox"/>	Step 2	User clicks the main 'Application menu'		SeS('Application_menu').DoLClick(42, 12);	Not Run	TS000046	Edit
<input type="checkbox"/>	Step 3	User clicks the 'New' entry		SeS('New').DoLClick(44, 13);	Not Run	TS000047	Edit
<input type="checkbox"/>	Step 4	User clicks on 'Pencil'		SeS('Pencil').DoLClick(15, 9);	Not Run	TS000048	Edit
<input type="checkbox"/>	Step 5	User clicks the 'Text' tool		SeS('Text').DoLClick(14, 16);	Not Run	TS000049	Edit
<input type="checkbox"/>	Step 6	User clicks at: 156, 256 in the canvas		SeS('Simulated').DoLClick(156, 256);	Not Run	TS000050	Edit
<input type="checkbox"/>	Step 7	Enters text 'This is some text'	This is some text	SeS('Text1').DoSetText("This is some text\r");	Not Run	TS000051	Edit
<input type="checkbox"/>	Step 8	User clicks on the 'Bold' button		SeS('Bold').DoLClick(11, 14);	Not Run	TS000052	Edit

Show 15 rows per page | Displaying page 1 of 1

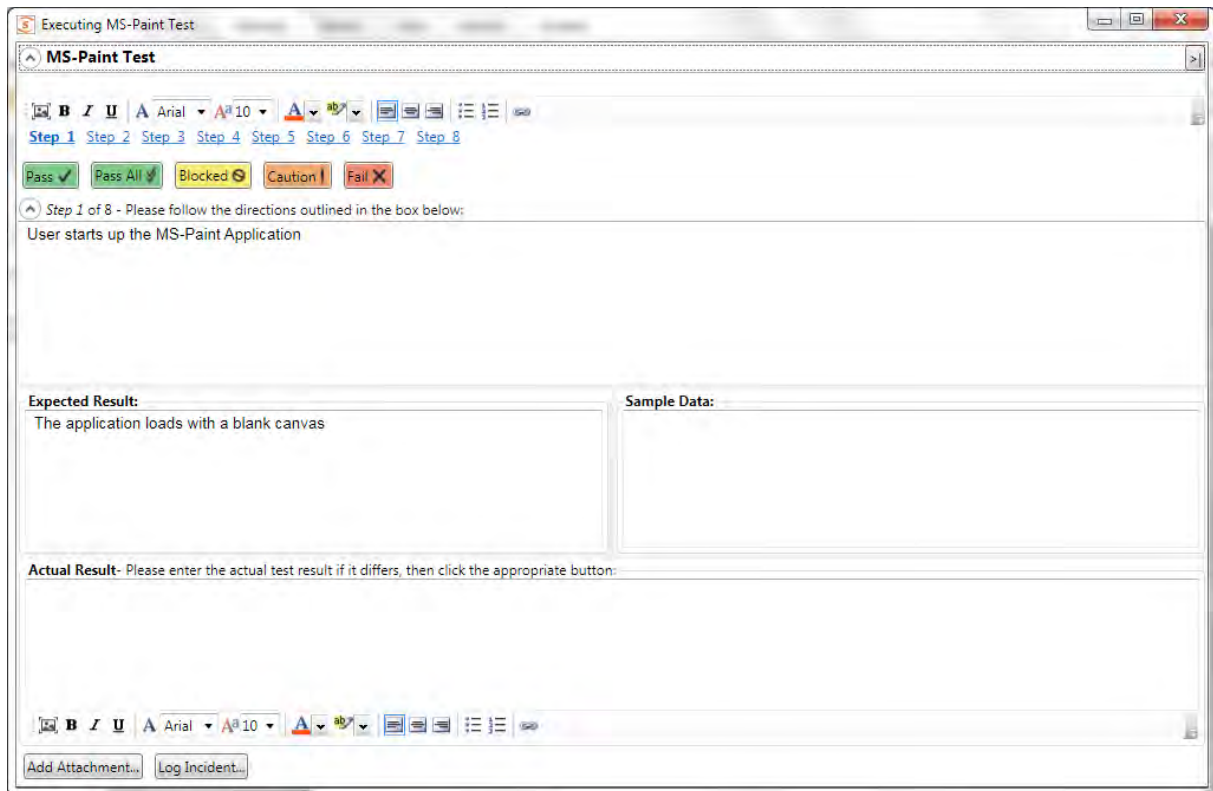
Now that we have finished the recording, we can now play back this manual test.

Step 5 - Executing the Manual Test

Choose the Release from the list of those available in the project:

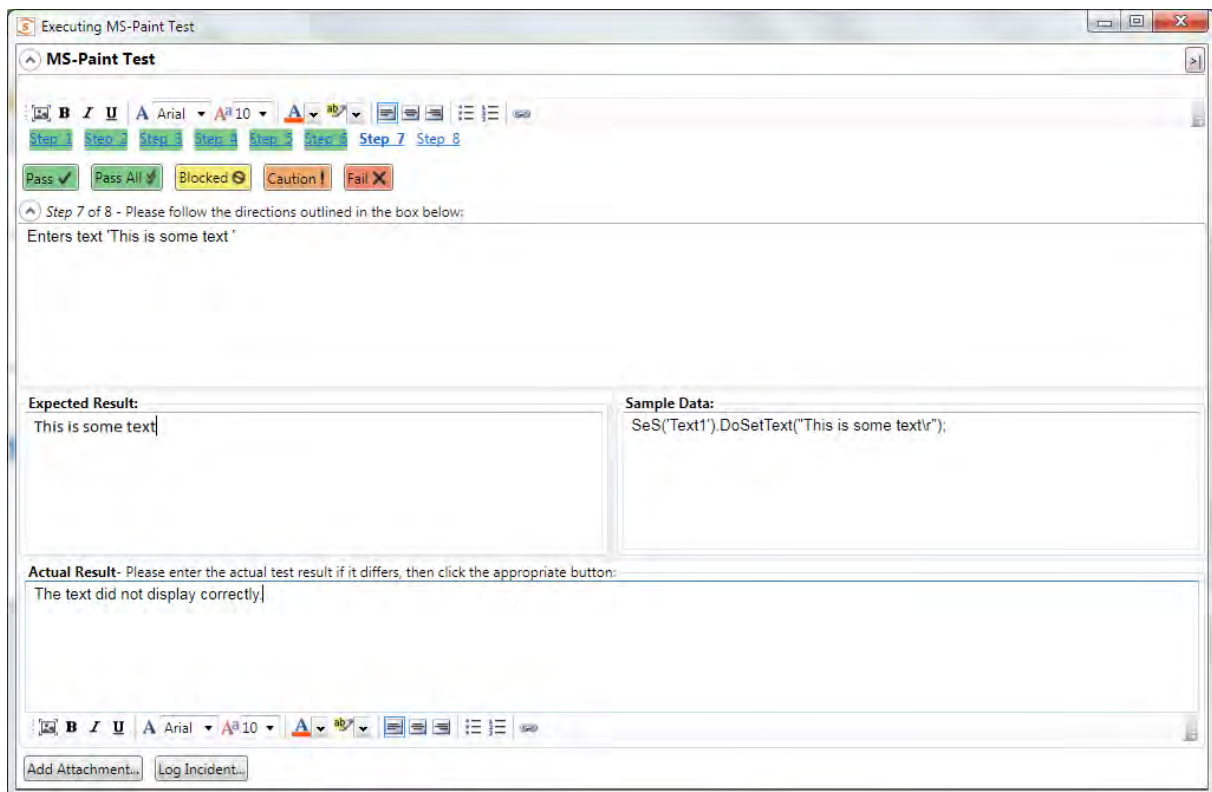


Then click on the 'Execute' icon to start manual test execution. That will bring up the [manual playback](#) screen:



On this screen, we shall follow through the steps listed in the test case. This involves opening up MS Paint, creating a new canvas, adding some lines using the pencil and then adding some text using the text tool. As you perform these steps, click on the **Pass** button to indicate that each step has passed. You can also minimize the manual playback screen by clicking the > | button.

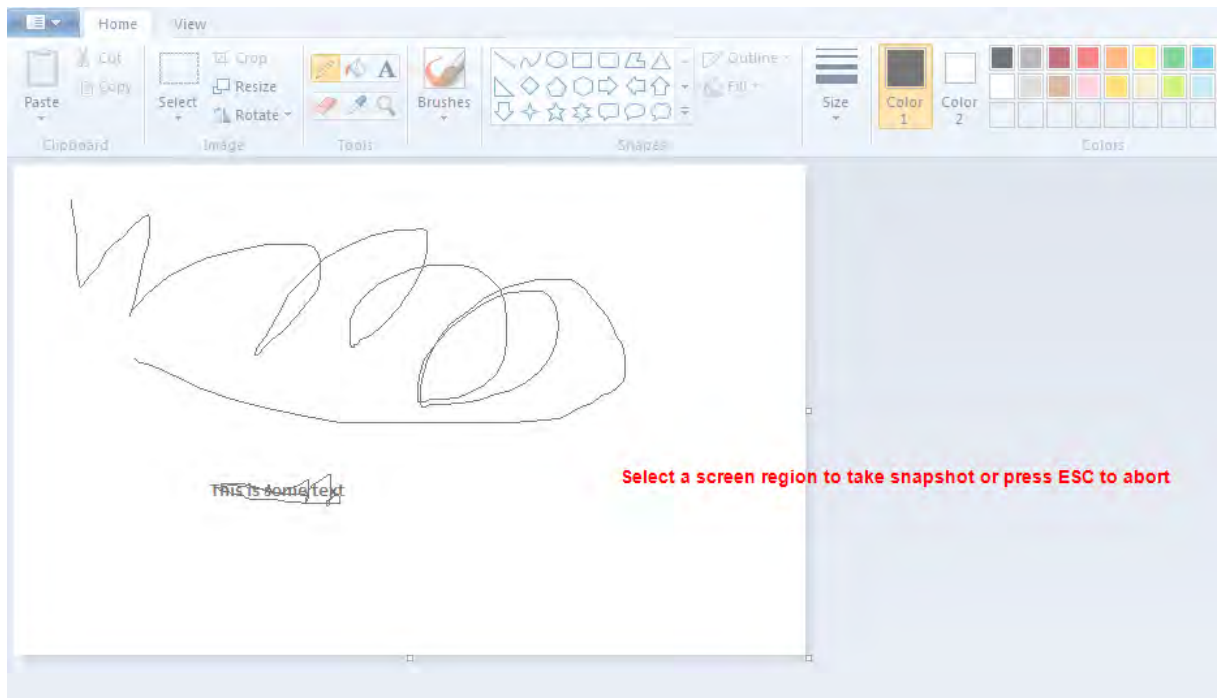
Once you get to Step 7, we shall pretend that MS Paint failed to display the text correctly. Enter in the Actual Result a message to that effect:



Next we shall attach a screenshot of what actually happened and log a test failure and associated incident / defect.

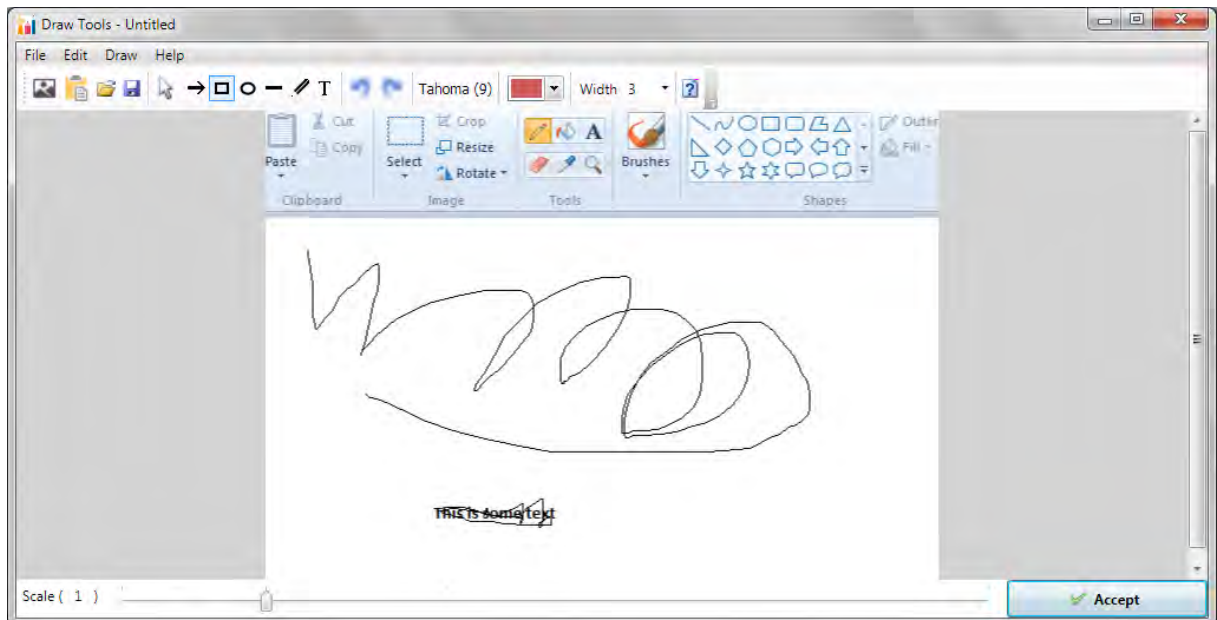
Step 6 - Capturing and Annotating a Screenshot

Click on the **Image icon** in the rich text editor associated with the **Actual Result** text box. That will bring up the [Drawing Tools](#) screen that asks you to draw a rectangle to select a portion of the current screen to capture:

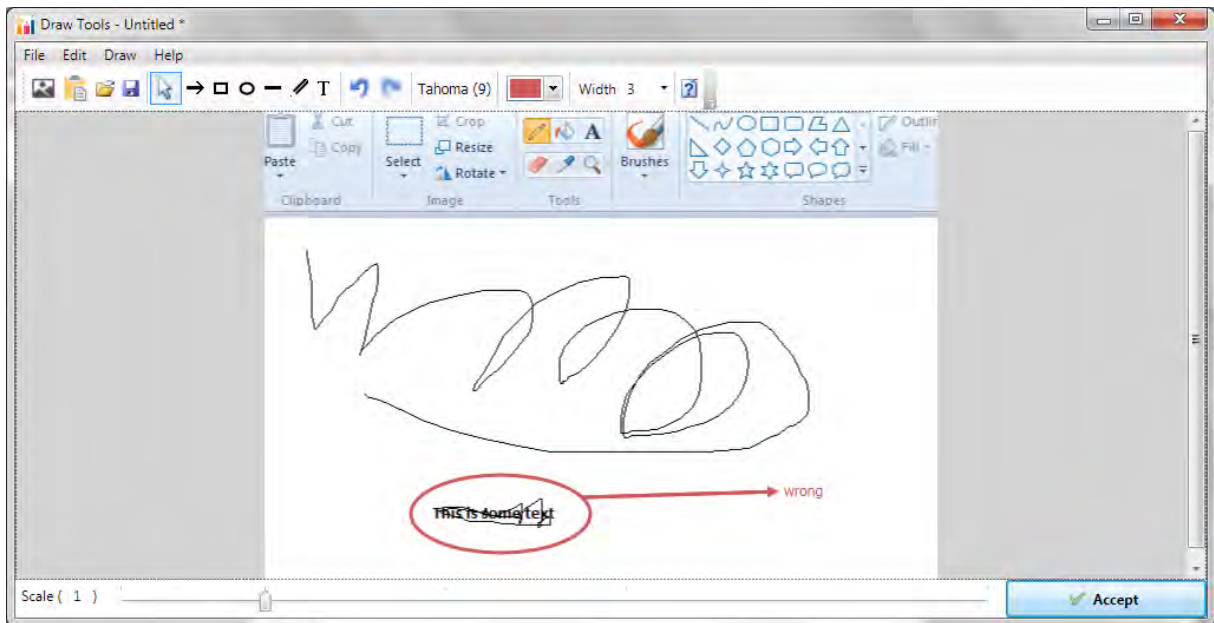


If the MS Paint application is not in the foreground, just click ESC on your keyboard to abort, rearrange your windows and then try again.

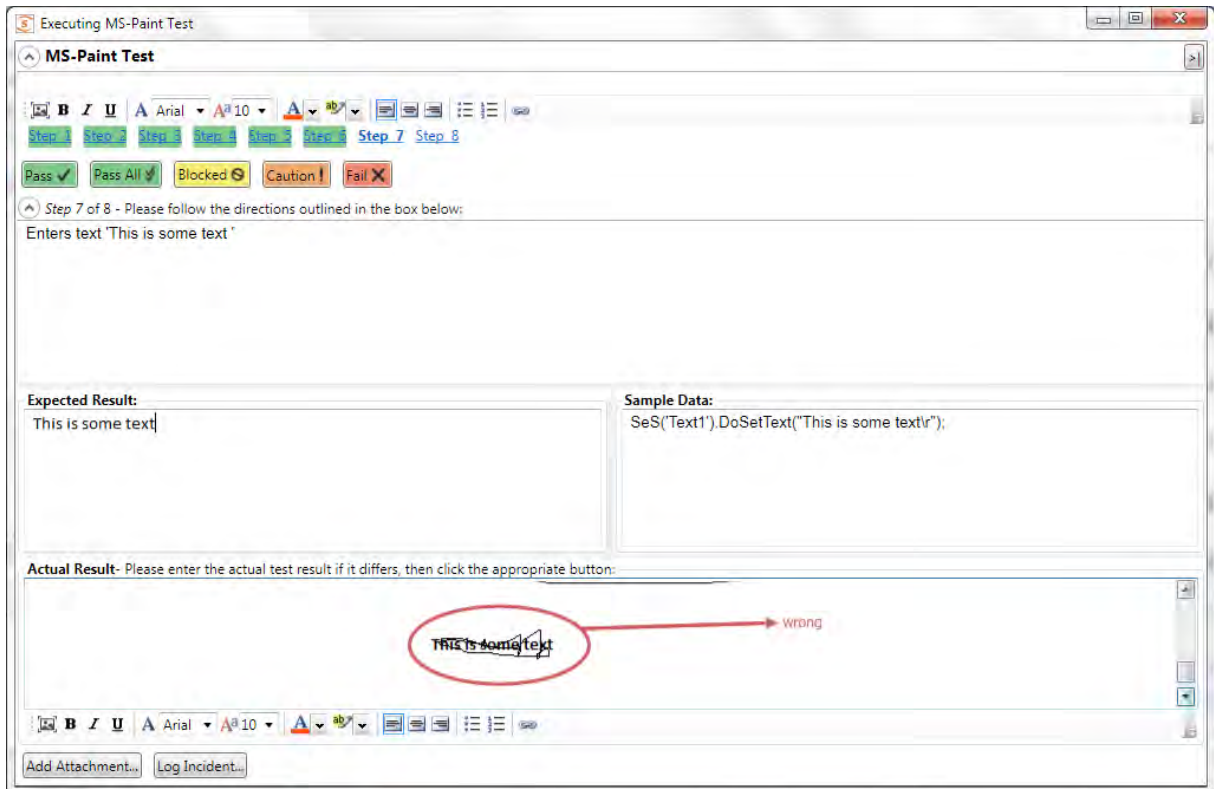
Once you have selected the rectangle, the drawing tools will display your selected image in the image editor:



You can now use the annotation tools to add labels, text and other items to explain the issue that you found:



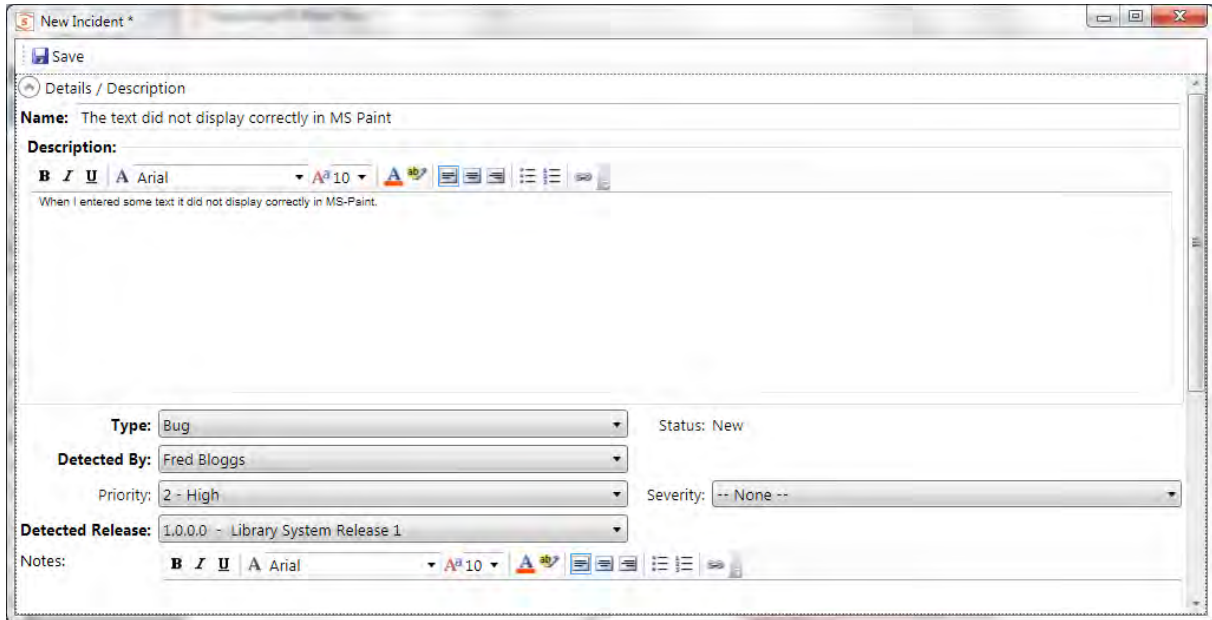
In the example above, we added a red ellipse, arrow and text to mark the issue that was seen in MS-Paint. Once you are happy with your image, click **Accept** and the image will be included in the test Actual Result:



Now we can [log an incident](#) that is associated with this test failure.

Step 7 - Logging the Incident / Defect

Click on the 'Log Incident' button to display the new incident entry screen:

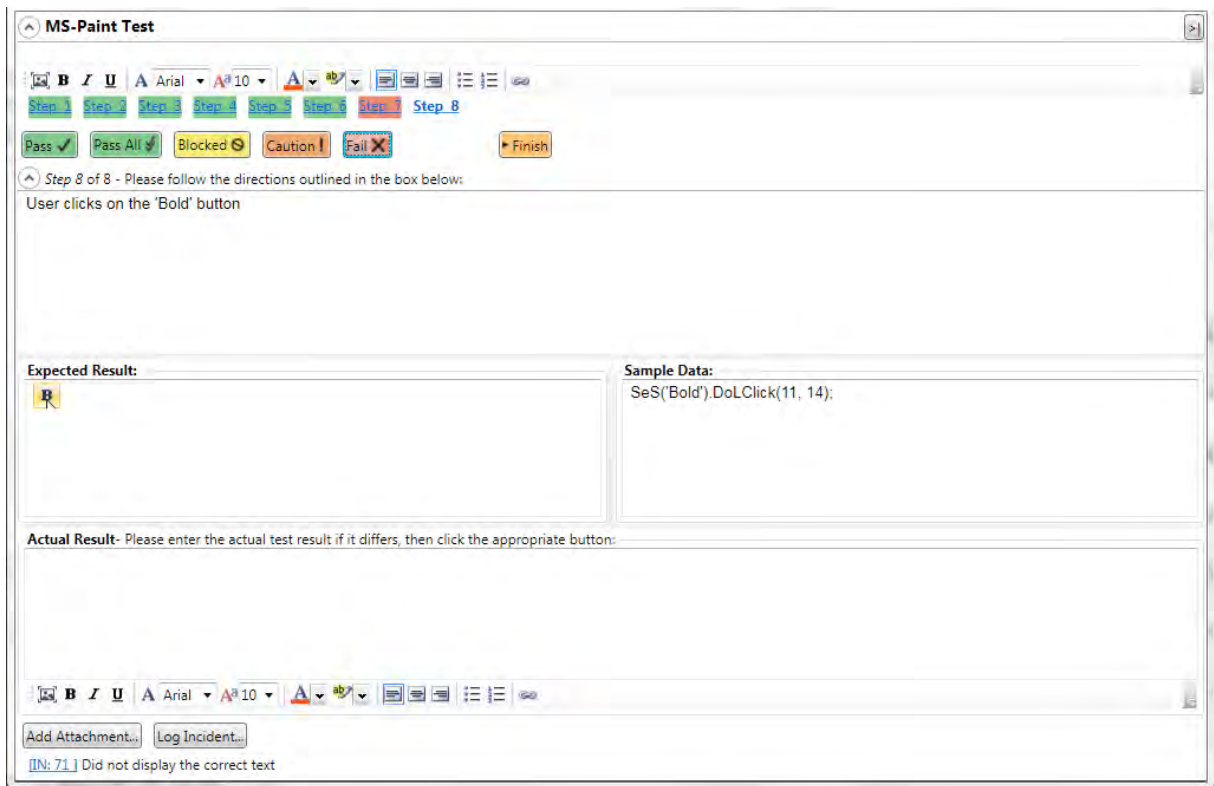


The screenshot shows the 'New Incident' form with the following fields and values:

- Name:** The text did not display correctly in MS Paint
- Description:** When I entered some text it did not display correctly in MS-Paint.
- Type:** Bug
- Detected By:** Fred Bloggs
- Priority:** 2 - High
- Detected Release:** 1.0.0.0 - Library System Release 1
- Status:** New
- Severity:** -- None --

Choose the **type** of incident, enter the **name**, **description**, **priority**, **detected release** and any other required fields as defined by the workflow in the project that you are connected to. Once you have entered in the various fields, click the '**Save**' icon in the top left.

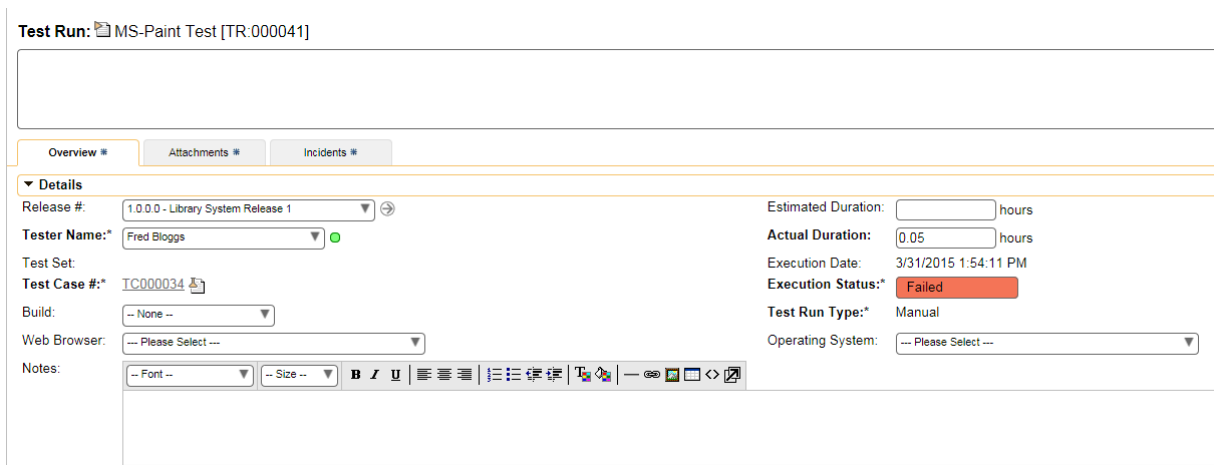
This will return you to the [manual execution](#) screen with the **Incident ID** [IN : xxx] and **name** displayed at the bottom. Now click on the '**Fail**' button and the test case will be marked as failed:



Finally, click on the **Finish** button and the results will be posted to [Spira](#).

Step 8 - Viewing the Results

Now to view the results in Spira, click on the [Spira Dashboard](#) item in the main Rapise [Test ribbon](#). Then under the 'My Created' test cases, click on the link for the test case you execute. That will bring up the test case in Spira. Now click on the 'Failed' hyperlink in Spira and the new test run will be displayed:



If you scroll down, you can see the individual test steps that were executed, with the associated actual result (including the captured screenshot):

ID	Test Step Description	Expected Result	Sample Data	Test # / Step #	Actual Result	Execution Status
RS000084	User starts up the MS-Paint Application	The application loads with a blank canvas		TC000034 / TS000045		Passed
RS000085	User clicks the main 'Application menu'		SeS('Application_menu').DoClick(42, 12);	TC000034 / TS000046		Passed
RS000086	User clicks the 'New' entry		SeS('New').DoClick(44, 13);	TC000034 / TS000047		Passed
RS000087	User clicks on 'Pencil'		SeS('Pencil').DoClick(15, 9);	TC000034 / TS000048		Passed
RS000088	User clicks the 'Text' tool		SeS('Text').DoClick(14, 16);	TC000034 / TS000049		Passed
RS000089	User clicks at 150, 250 in the canvas		SeS('Simulated').DoClick(150, 250);	TC000034 / TS000050		Passed
RS000090	Enters text 'This is some text'	This is some text	SeS('Text1').DoSetText('This is some text');	TC000034 / TS000051	Failed with the text being illegible. 	Failed
RS000091	User clicks on the 'Bold' button		SeS('Bold').DoClick(11, 14);	TC000034 / TS000052	> View Incidents	Not Run

If you click on the **Incidents** tab, you can also see the new incident that was logged, linked to this test run:

Overview #	Attachments #	Incidents #								
Display List of Incidents: > Refresh Apply Filter Clear Filter -- Showhide columns --										
Displaying 1 - 1 out of 1 incident(s) linked to this test run. Filtering results by Test Run #. (Clear Filters)										
✓	Name ▲▼	Type ▲▼	Status ▲▼	Priority ▲▼	Detected By ▲▼	Creation Date ▲▼	Owner ▲▼	Progress	ID ▲▼	Edit
<input type="checkbox"/>	Did not display the correct text	Incident	New	2 - High	Fred Bloggs	31-Mar-2015			IN.000071	Edit
Show 15 rows per page										

Congratulations! You have now successfully executed a manual test using Rapise.

See Also

- [Manual Testing](#)
- [Manual Recording](#)
- [Manual Playback](#)

2.4 Features

Rapise is a feature-rich test automation system, however all the features have been designed to make test automation as easy as possible.

Most of the features of Rapise fall into one of five categories:

1. Building test scripts with little or no manual scripting.
2. Reading and interpreting results and reports.
3. Additional features and capabilities for sophisticated testing.
4. Writing more involved or complicated tests using scripting.
5. Extending Rapise to learn new or extended libraries of capabilities.

Depending on the application set being tested, not all of these features are necessarily needed for every situation.

For each feature, this document describes:

1. The reason you might use a given feature.
2. A summary of the basic value of the feature.
3. An overview of how the feature works from the perspective of using it.
4. At least one useful sample that demonstrates how to use the feature.

2.4.1 Recording and Learning

Purpose

To understand what different objects might be found on a UI screen, and how to recognize them, record their characteristics and interact with them using Rapise.

Value

A UI screen entity (object) may consist of many different parts and components. Actions on these objects, and usage of these controls, must be captured in different ways, depending on the properties of the object. Rapise provides five fundamental methods for capturing objects and corresponding user actions:

1. **Recording** - Rapise is able to track user interactions with AUT and automatically capture affected objects and corresponding user actions. See [Recording](#) for more information.
2. **Learning** - there are cases when it is not necessary or is not possible to track user interactions with AUT. In this case user can manually point to an object that should be captured by Rapise. See [Learning](#) for more information.
3. **Analog Recording (Absolute/Relative)** - this is for objects that are not standard in some important way, and so activity on them cannot be captured using recording or cannot be specified after learning. [Absolute Analog Recording](#) is used to track mouse usage (movement and clicks) and keyboard events. For absolute analog recording, the positions these events are recorded relative to the top-left corner of the system screen. (In contrast, in [Relative Analog Recording](#), the events are recorded relative to the upper-left corner of the selected objects.) The events are recorded in a file of type arf (Analog Recording File).
4. **Simulated Object Recording** - a Rapise user can use simulated objects when some objects are not natively supported by Rapise (e.g. their internal structure, properties and actions are unknown). In this case, what is recorded are mouse clicks and keyboard activity. Compare to Analog Recording when all mouse and keyboard actions are recorded, including mouse up/down, mouse move events. See [Simulated Objects](#) for more information.
5. **Manual Recording** - In addition to providing automated testing functionality, Rapise enables you to [create manual tests](#) (ones that will be [carried out by a human tester](#)) rapidly without having to laboriously enter in test steps and screenshots by hand. It does this by using the same recording mechanism used for automated testing to [create a manual test case](#) that contains a list of the tester's interactions and screenshots of what was performed. This is useful for exploratory testing and is a huge time saver.

Usage

Before an operation (press, enter text, select, click, etc.) can be performed on an object automatically, Rapise must be able to identify the object. That identification must be able to locate the object definitively, and it must be able to duplicate the action or operation precisely. This carries several

implications. Firstly, if the AUT is in a different position on the screen when it is started, Rapise must still be able to find the objects in the AUT window. Secondly, if the positioning of objects on the AUT window is proportional or relative to the screen size of shape, Rapise must still be able to locate the object.

A secondary set of considerations relates to the fact that the AUT UI layout maybe sensitive to the context of the state of the application. For example, consider the case of a word processor. Pressing the "bold" button doesn't predict what the result will be unless it is known whether the text highlighted is currently bold or not. A far more illustrative example is that of the Microsoft Paint utility. The Microsoft Paint utility is the subject of a Inflectra sample, [Simulated Object](#).

The most instructive way to identify the objects to Rapise is to practice with the tool and different types of objects. The best methodology to use is as follows:

1. First, try to use Record/Learn to learn the object and record actions in a single step.
2. If learning.recording fails to record actions in the grid, use the [Object Spy](#) to observe the object carefully and discover what libraries and classes are being used by the AUT.
3. Use Verify (Ctrl+1) from the Recording Activity dialog to get summary information about the object.
4. Use a more appropriate set of libraries when selecting the AUT prior to recording.
5. Use Analog Recording with absolute positioning to identify and locate the object.
6. Use Analog Recording with relative positioning to identify and locate the object.
7. Use Simulated Object Recording to track the actions required and at the positions required.
8. Look for [custom libraries](#) that support the technology being used by the AUT.
9. Build your own custom library to support the technology in use by the AUT.
10. Finally if it will not be worth developing automated tests for this AUT, use the [manual recording feature](#) to speed up your manual test writing.

2.4.1.1 Recording

Purpose

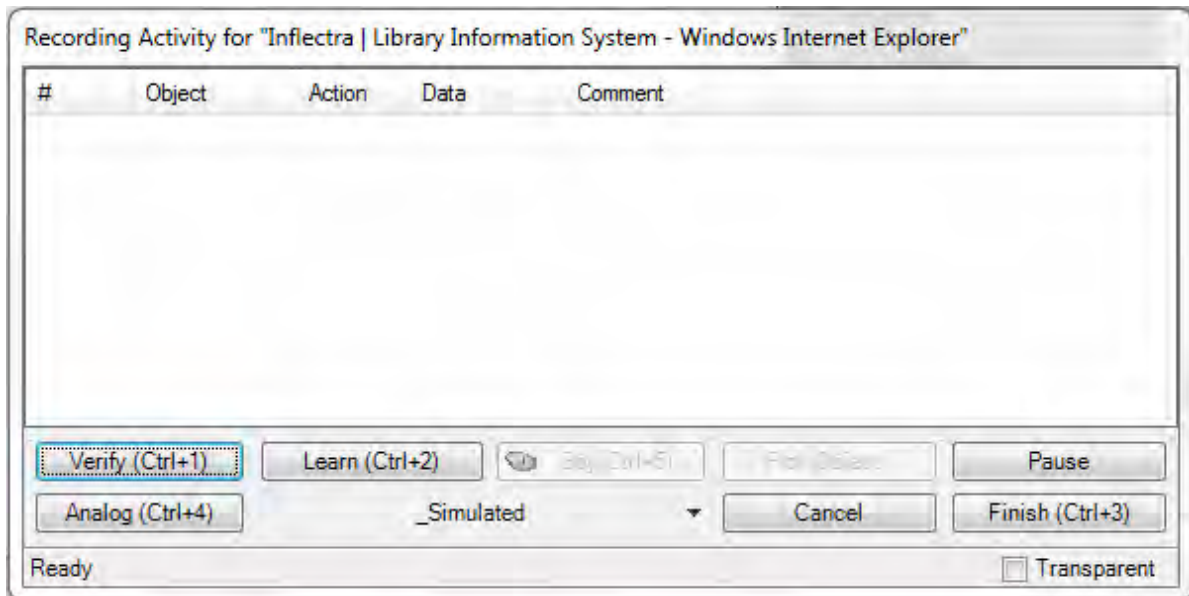
Recording is the name given to having Rapise track your interactions with an application.

Value

The actions you take in using the [AUT](#) are observed by Rapise and are transformed into a script (javascript), which you can execute using the Play button. The script can be extended and modified to suit special purposes.

Usage

The **Recording Activity (RA) Dialog** is opened when you start recording using the Record/Learn button. When the Recording Activity dialog appears, Rapise has connected to your AUT and is ready to monitor and record your interactions. You'll find instructions [here](#) or look at one of the examples - [TwoDialogs](#), [Sample Record and Playback](#), or [Mobile Sample](#)



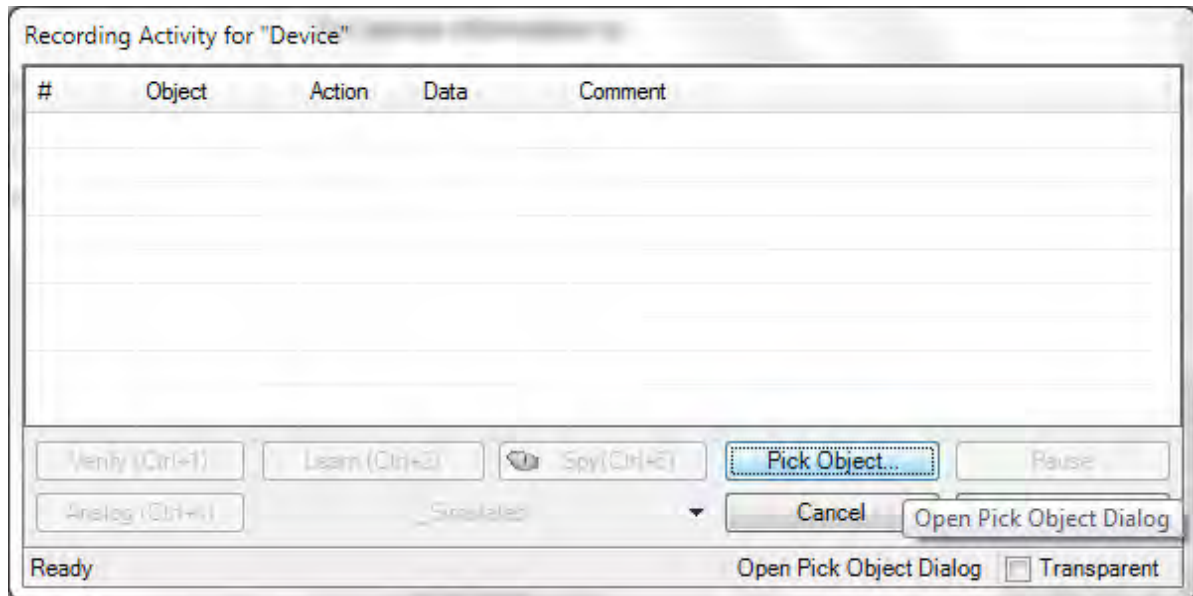
You'll notice that the RA dialog has a grid. As you interact with the AUT, your actions will be listed in the grid.

If you record an incorrect action, you can right-click on the action and delete it.

To ensure you successfully record your interaction with the AUT, navigate slowly through the AUT. Wait a second or two between each action to make sure Rapise has time to interpret and record your action. Once your interaction is updated in the RA dialog grid, you are free to continue with the next action.

When you are done recording, press the **[Finish]** button on the RA dialog or type **Ctrl+3**. The RA dialog will disappear, and you will see an automatically generated script opened in Rapise.

For **Mobile Testing**, you will need to use the **[Pick Object]** button which then allows you to pick a specific object from the [Mobile Spy](#):



See also

- If you have already recorded a script and want to record additional interactions in the same test, be sure to read [Making Multiple Recordings](#).
- The RA dialog is described more thoroughly in [Recording Activity Dialog](#).
- To learn how to run the script, see [Playback](#). To learn how to modify the script, see [Scripting](#).
- For a detailed tutorial, see [Tutorial: Record and Playback](#) in the Getting Started section.
- For more information on the Spy (ObjectSpy) capability, see [Object Spy](#).

2.4.1.2 Learning

Purpose

Objects are the controls and items on the screen of the AUT. "Learning" an object refers to the process of Rapise collecting enough information about the on-screen item to be able to reference the item when the test script is run without ambiguity and regardless of its location on the UI.

Value

When Rapise "learns" an object, it records the object's type, its name and how to find the object again (locator). It saves everything it learns to the script so that the object can be identified when the test is run. Rapise gives the object a simple name so that you can easily refer to it later if you decide to modify the script.

Usage

Objects are learned in two ways: (1) during recording or (2) explicitly.

Recording

During a Recording session, Rapise learns about each object with which you interact. For details, see [Recording](#).

Explicitly

1. Open the **Recording Activity Dialog**. Instructions are [HERE](#).
2. Place your mouse over the object you wish to learn. It should become surrounded by a purple box.
3. Press **CTRL+2**.
4. You will see a new entry in the Recording Activity Dialog, signifying that the object was learned.

Everything Rapise learns about an object is saved in **saved_script_objects**. You can see this variable defined in the <project-name> objects.js file that will be listed in the Test Files tab of the Rapise. The following shows what Rapise saved about the "Please enter your name" text box in the [TwoDialogs](#) example:

```
Please_enter_your_name:{
  "locations": [
    {
      "locator_name": "Location",
      "location": {
        "location": "4.4",
        "window_name": "param:window_text",
        "window_class": "param:window_class"
      }
    },
    {
      "locator_name": "LocationPath",
      "location": {
        "window_name": "param:window_text",
        "window_class": "param:window_class",
        "path": [
          {
            "object_name": "param:object_name",
            "object_class": "param:object_class",
            "object_role": "param:object_role"
          },
          {
            "object_name": "param:window_text",
            "object_class": "param:window_class",
            "object_role": "ROLE_SYSTEM_DIALOG"
          }
        ]
      }
    }
  ]
},
{
```

```
    "locator_name": "LocationRect",
    "location": {
      "window_name": "param:window_text",
      "window_class": "param:window_class",
      "rect": {
        "object_name": "param:object_name",
        "object_class": "param:object_class",
        "object_role": "param:object_role",
        "x": 222,
        "y": 40,
        "w": 140,
        "h": 23
      }
    }
  },
  "window_text": "Inflectra Rapise Two Dialogs Sample",
  "window_class": "#32770",
  "object_text": "Chris",
  "object_role": "ROLE_SYSTEM_WINDOW",
  "object_class": "Edit",
  "object_name": "Please enter your name:",
  "version": 0,
  "object_type": "Win32Text",
  "object_flavor": "Text",
  "object_library": "Generic"
},
...
```

See Also

- [Recording](#)
- Learning invisible and [Simulated Objects](#) is slightly more complicated. You can find information on both in the [Recording Activity Dialog](#) section. Look for descriptions of the **Pick Object** button and the **_Simulated** drop-down menu.
- [Learn Object](#)

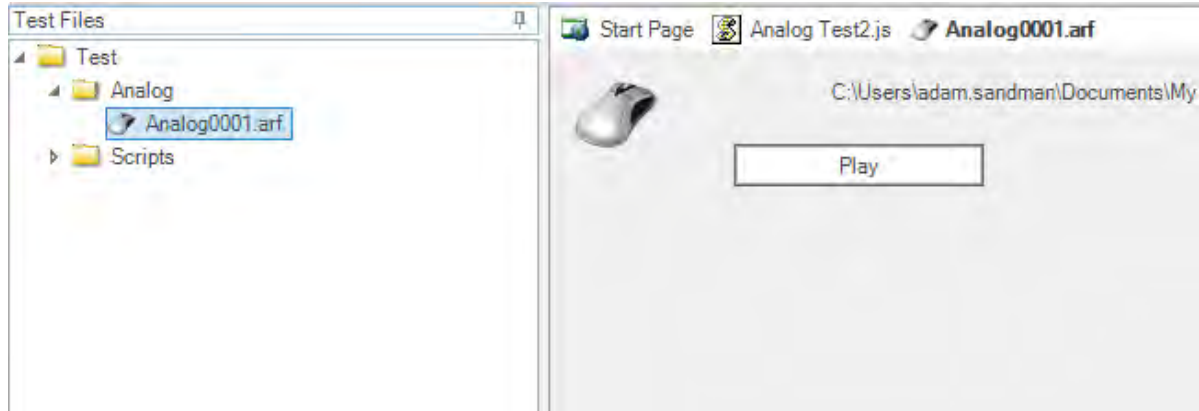
2.4.1.3 Analog Recording

Concept

Sometimes you have to automate the testing of an application that contains some controls or elements that are not standard objects that can be recognized by Rapise. For example you may have a drawing canvas inside an application that allows you to annotate a diagram. You can use the standard Rapise

libraries for the rest of the controls but the actual drawing events cannot be captured that way. Analog recording is available to 'fill in the gaps' in such scenarios.

During **Analog Recording**, Rapise records mouse movements, keyboard inputs, and clicks and stores them in a special .ARF (Analog Recording File) format file:

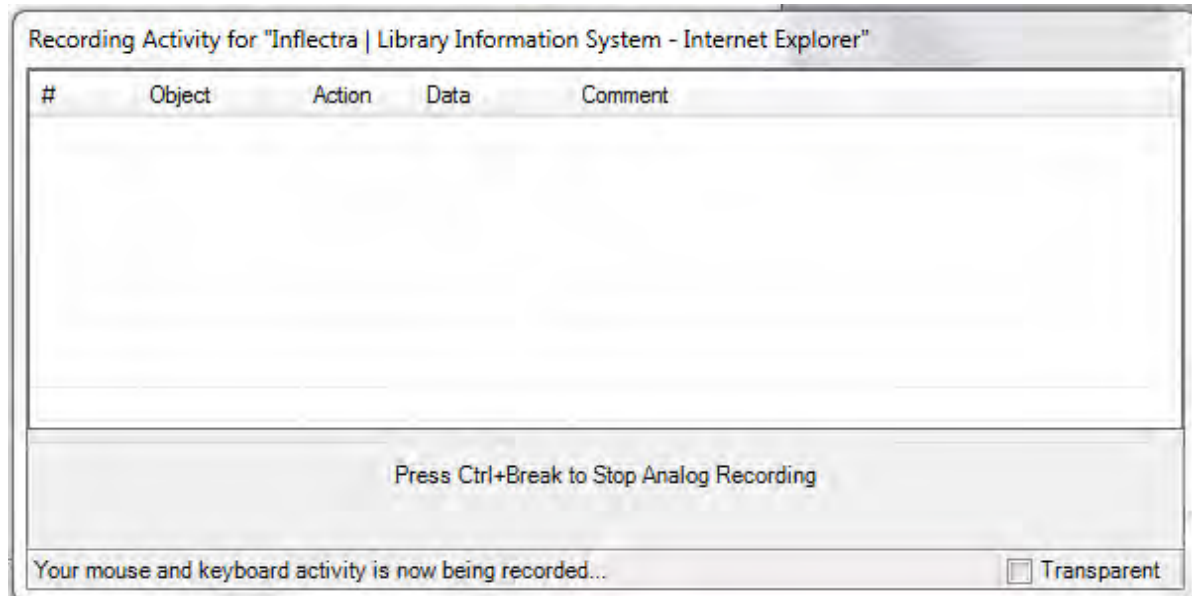


There are two types of Analog Recording: **Absolute** and **Relative**.

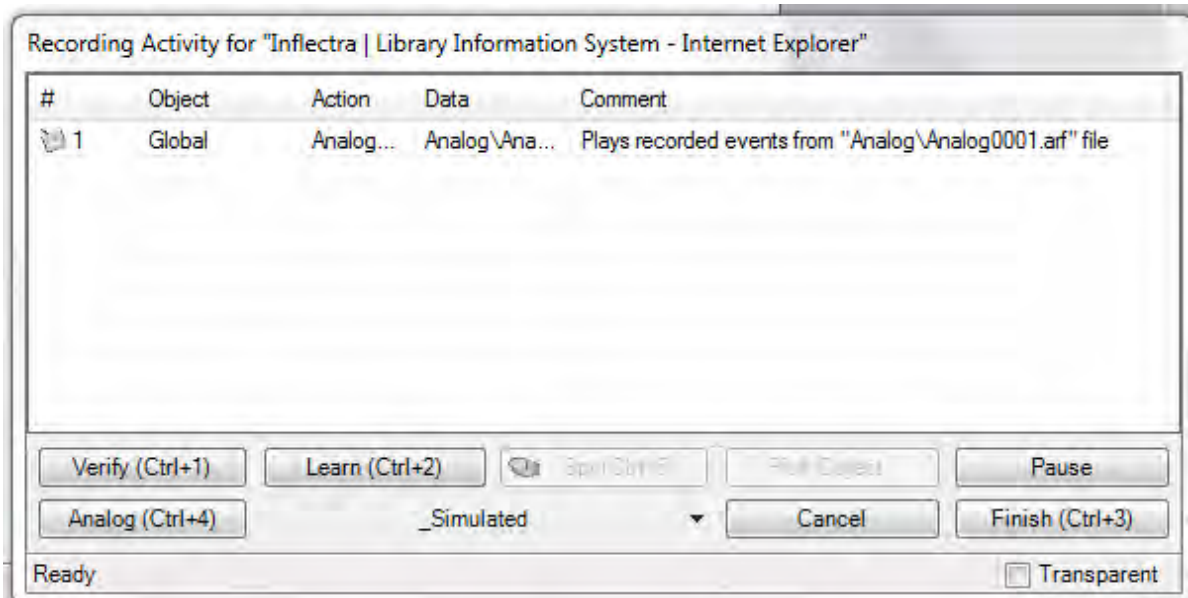
- **Absolute**: Mouse coordinates are recorded relative to the top left corner of the screen.
- **Relative**: Mouse coordinates are recorded relative to the top left corner of the object beneath the mouse cursor.

Usage

When you are [recording your test](#) using the application you may come to a point where there are user actions that you need to record that don't have any identifiable objects (for example drawing a signature). You can click on the 'Analog' button on the recorder to engage Analog mode:



Now when you use the mouse and keyboard to test the application, Rapise is storing the coordinates of your mouse clicks and keyboard events and storing them in a separate .ARF file that is part of your test project.



Once completed, the entire analog section is included as one step within the complete test script so you can include an analog sequence within a test script that contains other non-analog events. This lets you have the robustness of true object-based recording for 95% of your test and analog when you need it for the remaining 5%. This is the best of both worlds.

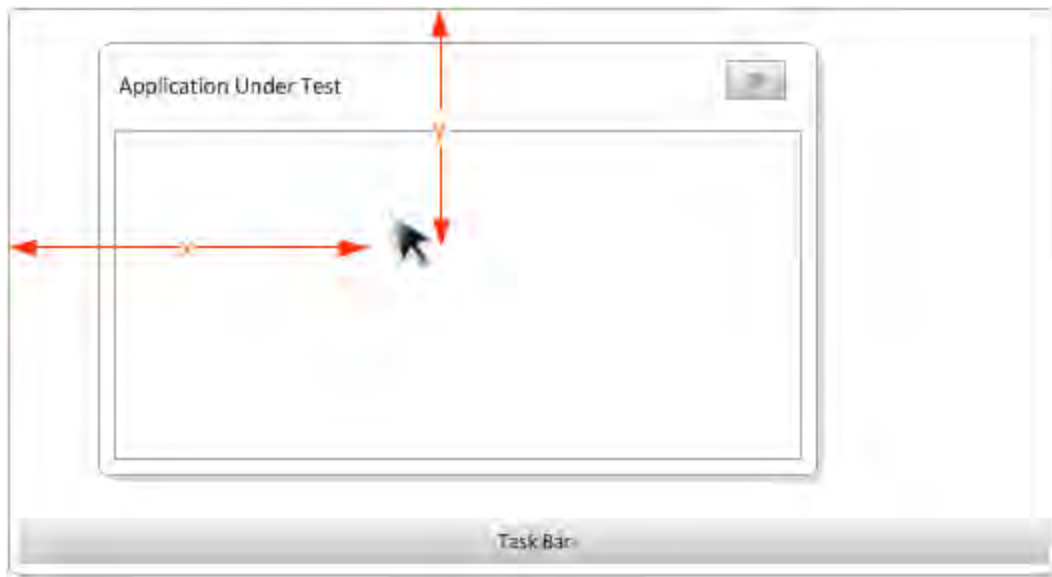
See Also

- [Recording Activity Dialog](#)

2.4.1.3.1 Absolute Analog Recording

Purpose

Absolute analog recording is used to track mouse usage (movement and clicks) and keyboard events. For absolute analog recording, the positions these events are recorded relative to the top-left corner of the system screen. (In contrast, in relative analog, the events are recorded relative to the upper-left corner of the selected objects.) The events are recorded in a file of type arf (Analog Recording File).



Value

Not all applications can be recorded by locating and learning objects being used. A very good example of this is free-hand drawing in an application such as Microsoft Paint (Start Menu -> Accessories -> Paint). There are several reasons why this application cannot be recorded using object tracking, learning and recording. The most important is that when the mouse is moved free-hand, it is operating on the same object the whole time - the blank "canvas." Another reason is that the application changes behaviour and the positions of the canvas change depending on the size of the canvas and the positions of floating toolbars.

Absolute analog recording is provided by Rapise to make it possible to make it possible to design and implement tests for these types of applications.

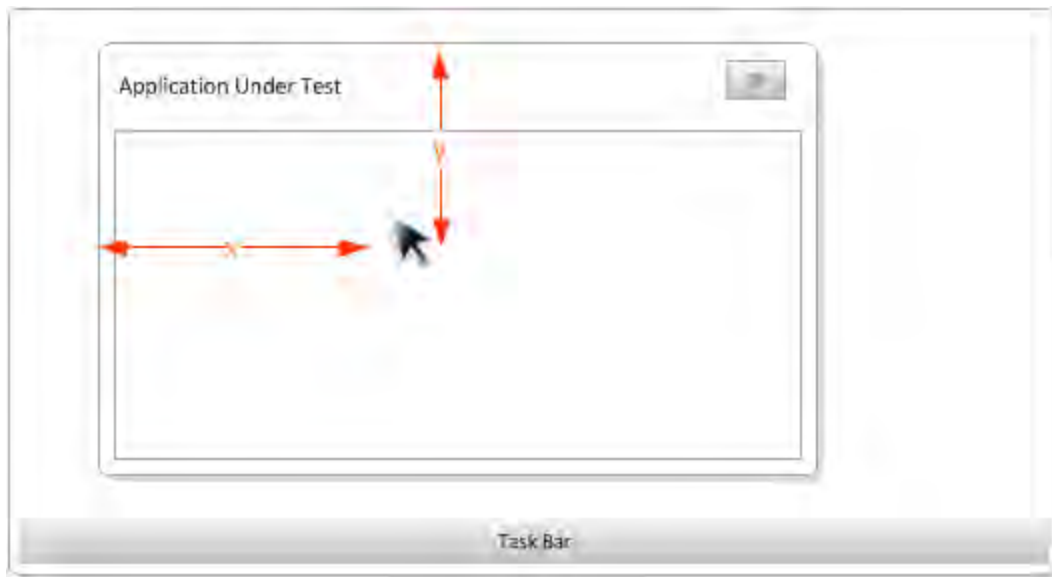
See Also

- [Do Absolute Analog Recording](#)
- [Relative Analog Recording](#)

2.4.1.3.2 Relative Analog Recording

Purpose

Relative analog recording is used to track mouse usage (movement and clicks) and keyboard events. For relative analog recording, events are recorded in relation to the top-left corner of the application's window. The events are recorded in a file of type arf (Analog Recording File).



Value

Not all applications can be recorded by locating and learning objects being used. A very good example of this is free-hand drawing in an application such as Microsoft Paint (Start Menu -> Accessories -> Paint). There are several reasons why this application cannot be recorded using object tracking, learning and recording. The most important is that when the mouse is moved free-hand, it is operating on the same object the whole time - the blank "canvas." Another reason is that the application changes behaviour and the positions of the canvas change depending on the size of the canvas and the positions of floating toolbars.

Relative analog recording is provided by Rapise to make it possible to make it possible to design and implement tests for these types of applications.

See Also

- [Do Relative Analog Recording](#)
- [Absolute Analog Recording](#)

2.4.1.4 Simulated Objects

Purpose

During normal recording, Rapise [Learns about the Objects](#) you interact with. If, for some reason, Rapise cannot learn an object, you can create a **Simulated Object**. Rapise identifies a simulated object by its location in the Window or Dialog and can perform certain generic actions on it, such as Click and Fill In. This works in the reverse sense also. That is, if Rapise cannot identify an object, or, for example, you click outside any defined object in the AUT's UI, Rapise will create a simulated object to represent the action.

Value

Not all objects on a screen are "standard" or can be recognized by the libraries loaded. Some are compound objects, consisting of two or more individual objects that work together to deliver a UI effect

or behaviour. Simulated objects "fill in the blanks" to allow Rapise to cause an event outside the normal set of objects.

See Also

- [Recording Activity Dialog](#)
- [Sample Tests](#): The **SimulatedObject** sample.
- [Deal with a Simulated Object](#)

2.4.1.5 Object Libraries

Purpose

Object libraries define what objects and interactions Rapise understands during [Recording](#) and [Learning](#). Most Object Libraries are specific to an application or a set of applications.

Usage

Rapise comes with several different object libraries:

1. **Auto**
2. **Core Technologies**
 - **Generic***
 - **Internet Explorer HTML**
 - **Firefox HTML**
 - **Java***
 - **Java SWT***
 - **Managed***
 - **UI Automation***
 - **Qt Framework***
 - **Adobe Flex AIR**
 - **ActiveX***
 - **Web Services**
 - **User**
 - **Advanced Accessibility***
 - **Console**
3. **Mobile Libraries***
 - **Android (via. Appium)***
 - **iOS (via. Applium)***
4. **Widget Toolkits**
 - **DOM GWT**
 - **DOM GWT-Ext**
 - **DOM SmartGWT**
 - **DOM YUI**
 - **DOM jQuery UI**
 - **HTML 5**
 - **DevExpress***
 - **Infragistics***

- o Telerik*
- o ActiveX ComponentOne*
- o SyncFusion*
- o FarPoint*

**These libraries are not included in the free Rapise Express edition.*

You can [add your own](#) Recording library—one that understands the objects in your application.

- Selecting **Auto** as the application recording library will cause Rapise to select the one that it deems is most appropriate.
- **UIAutomation**: Use this library with .NET, WPF, and Silverlight applications. When used with .NET 2.0+ applications you should also include the **Managed** library as well. When used with older .NET applications, you should use the Generic library instead.
- **Internet Explorer HTML**, **Chrome HTML** and **Firefox HTML** are used with Internet Explorer, Google Chrome and Firefox respectively. They understand only the **DOM** (document object model) and therefore capture interactions with the web application, not the browser. They also have access to passwords. Tests recorded with either of the libraries can be run in any of the three browsers. See [Cross Browser Testing](#) for more details.
- **User** refers to [Custom Libraries](#).
- The **DOM GWT** library uses the Document Object Model to learn or record objects found in the Google Web Toolkit.
- The **DOM GWT-Ext** library uses the Document Object Model to learn or record objects found in the Google GWT-Ext library.
- The **DOM SmartGWT** library uses the Document Object Model to learn or record objects found in the Google SmartGWT library.
- The **DOM jQuery UI** library uses the Document Object Model to learn or record objects found in the jQuery UI widget library.
- The **HTML5** library uses the Document Object Model to learn or record objects found in the HTML 5 extensions library.
- The **DOM YUI** library uses the Document Object Model to learn or record objects found in the Yahoo! User Interface library.
- The **Generic** library uses Microsoft's **MSAA** event model to capture user actions. The Generic library should be used if there is no library more specific to the AUT available. The Generic library will record a large set of applications, but it has drawbacks; it may skip some actions and/or record unintended actions. Passwords are not visible to the Generic library, and must be manually entered into the test after recording.
- The **Advanced Accessibility** library is for recording with Internet Explorer. In general, you will want to use the Internet Explorer HTML library. However, there is some information available through Advanced Accessibility that is unavailable when looking solely at the DOM. For example: the absolute screen position of an object. Advanced Accessibility is not precise, as Internet Explorer HTML is, and may miss actions or record unintended actions.
- The **Java SWT** library is for use with the Eclipse Java Standard Widget Toolkit (SWT) applications.
- The **Console** library is for use with Windows Console Applications that run in the command-line.
- The **Java** library is for use with Java GUI applications that are written using either AWT or SWING. Use the **SWT** library instead if your application was written using SWT.
- The **Managed** library is for use with Microsoft .NET 2.0 + applications. It adds some additional .NET 2.0+ specific-controls to the list supported in the Generic and UIAutomation libraries.
- The **DevExpress** library allows you to record and learn using the various controls provided in the DevExpress DXperience v1.0 component library. This allows you to save time by having the system recognize the various controls directly.
- The **Infragistics** library allows you to record and learn using the various controls provided in the Infragistics component library. This allows you to save time by having the system recognize the

various controls directly.

- The **Telerik** library allows you to record and learn using the various controls provided in the Telerik RadControls for Winforms component library. This allows you to save time by having the system recognize the various controls directly.
- The **Adobe Flex AIR** library is for use with applications that are written using Adobe Flash, Flex or AIR.
- The **Qt Framework** library is for use with applications that are written using the cross-platform Qt Framework.
- The **Web Services** library is for use with API tests that connect to either REST or SOAP web services. See the [web service testing](#) topic for more information.

See Also

- [Recording](#)
- To write an Object library specific to your application, see [Custom Libraries](#).
- [Cross Browser Testing](#)
- If you interact with an object that is not defined in your chosen recording library, it will be treated as a [Simulated Object](#).

2.4.1.5.1 Custom Libraries

Purpose

If your application doesn't work with the predefined [Recording Libraries](#), you can create your own.

Usage

Your library can provide **Basic** or **Full** support for your application. Basic support allows you to manually [Learn](#) objects, [write test scripts](#), and [Playback](#) your scripts. Full support allows you to [Record](#) as well. Create your library in the **LibUser** directory. Unless you specified otherwise, you will find it at:

C:\Program Files\Inflectra\Rapise\Engine\Lib\LibUser.

Basic Support

Add a Matcher Rule to the library for every window type in your application. The SeSMatcherRule includes information to identify your application, and a set of behaviors.

```
var yourApplicationRule = new SeSMatcherRule(  
{  
  object_type: "yourAppObject",  
  classname: "yourAppFrame", //You can use a regular expression here  
  behavior: [yourAppBehavior]  
})
```

Override Actions: Override actions in **yourAppBehavior** (above). The action definitions you provides will be used during [Playback](#). Overriding actions does not affect recording.

```
var HTMLFirefoxBehavior =  
{  
  actions: [{  
    actionName: "Click",  
    DoAction: function(){}  
  },  
  {  
    actionName: "SetText",  
    DoAction: function(**String*/txt){}  }  
}
```

```
    }]
}
```

Full Support

Enable Recording: You can enable recording in two ways. If your application notifies the [Accessibility Events](#) interface about application events, you can override events in the **behavior** section of **SeSMatcherRules**:

```
var newBehavior={
  actions: [{/*section deleted for brevity*/}],
  events:
  {
    OnSelect: function(**SeSObject*/ param, /**Boolean*/ badd)
    { /*...*/
    },
    OnSelectAdd: function(**SeSObject*/ param, /**Boolean*/ badd)
    { /*...*/
    }
  }
}

var newRule = new SeSMatcherRule({
  object_type: "someType",
  role: "someRole",
  behavior: [newBehavior],
})
```

Otherwise, you will have to implement **Custom Recording**.

Custom Recording: With custom recording, it is the library's responsibility to:

- detect user actions in the application, and
- call **RegisterAction()** (which writes the action to the script).

See Also

- To see what actions and events can be overridden, see **SeSBehavior.js** (in the Rapise [Engine](#)).
- Check the **Engine/Lib** directory for examples.
- You can alter the behavior of an action without creating an entire library. See the [Actions](#) section for more details.

2.4.1.5.1.1 Actions

Purpose

Actions are anything the user can do to a GUI control, such as click, select, fill with text, etc. You can override the behavior of an action, without creating or altering a [Recording Library](#), using **SeSExtendAction()**. Overriding an action affects [Playback](#), but not [Recording](#).

Usage

SeSExtendAction() is used to override an action handler or add a new **DoAction** handler:

```
function SeSExtendAction(objectType, doActionName, replacementFunction)
```

where:

- **objectType** is the name or [regular expression](#) specifying the object type(s) for which this extension should apply.
- **doActionName** is the name or [regular expression](#) specifying the **DoAction** handler that should be overridden.
- **replacementFunction** is the function containing overriding behavior.

In most cases **SeSExtendAction()** should be called from within [TestInit\(\)](#).

Calling Base Actions

The function you are overriding is called the **BaseAction**. You can call it like this:

```
this.BaseAction(arguments);
```

You may override actions several times. For example:

```
function DoActionB()  
{  
    this.BaseAction();  
}  
  
function DoActionC()  
{  
    this.BaseAction();  
}  
  
SeSExtendAction("Win32Button", "DoAction", DoActionB);  
SeSExtendAction("Win32Button", "DoAction", DoActionC);
```

When **DoAction** is called for the **Win32Button**, the following sequence is executed:

```
DoActionC->DoActionB->DoAction
```

See Also

- To see what actions can be extended, look in **SeSBehavior.js** (in the Rapise [Engine](#)).

2.4.1.6 Multiple Recordings

Purpose

Every time you record, the script recorder updates your test script. Be cautious about what changes you make to the test script; some changes could be lost if the recorder is re-run (see **Usage**).

Usage

The test script path can be found in the [Settings Dialog](#) under **Settings > ScriptPath**. Unless you specify otherwise, the test script is named *testname.js* (where *testname* is whatever you named your test).

Note that the Script Recorder only has knowledge of four functions and two data structures:

1. function Test()
2. function TestInit()
3. function TestFinish()
4. function TestPrepare()
5. array "g_load_libraries"
6. map "saved_script_objects"

You can make changes to the body of any of the above functions, and you can alter the initialization of **g_load_libraries** and **saved_script_objects**. All other changes are unsafe.

During Recording, the Script Recorder:

1. Appends newly recorded actions to the **Test()** function
2. Appends newly encountered objects to the **saved_script_objects** array
3. Updates **g_load_libraries** to reflect the library selections you made in the [Select an Application to Record... Dialog](#)
4. Ignores (and leaves intact) the definitions of **TestInit()**, **TestFinish()**, and **TestPrepare()**

For example, suppose that you have the following code inside your script file:

```
//External comment // UNSAFE: will be removed by recorder
/*Another comment*/ // UNSAFE
var external_var; // UNSAFE

function Test()
{
    //comment --SAFE
    var external_var; //SAFE: defines a local variable for function "Test"
    global_var=value; //SAFE: updates (or defines) a global variable
    //SAFE everything inside this function will be kept intact after recording
}
```

The parts of code marked **UNSAFE** will be deleted by the script recorder.

See Also

- [Settings Dialog](#)
- [Select an Application to Record... Dialog](#)
- [Recording](#)

2.4.1.7 Object Spy

Purpose

The **Object Spy** allows you to inspect an object's properties and state.

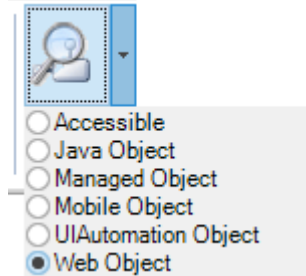
Value

Many controls on [User Interfaces](#) are compound objects or there may be many instances of a similar object. To be sure to select precisely the correct object, or to select the correct object from a collection of similar objects, the object's properties can be used to further identify the correct instance.

Usage

To spy on an Object:

1. Choose the type of **Object Spy** that you want to use. This can be done by clicking the down-arrow next to the Spy icon in the Tools ribbon:



There are **five** types of Spy available:


1. **Accessible** - This is used to inspect applications that expose their properties using the Microsoft Active Accessibility (MSAA) technology. This is typically used by applications written in MFC, ATL, Qt, C++ and Visual Basic.
2. **Java Object** - This is used to inspect applications written using the Java AWT and Swing UI frameworks.
3. **Managed Object** - This is used to inspect applications written in .NET 1.1, .NET 2.0, .NET 4.0 using Microsoft Windows Forms.
4. **Mobile Object** - This is used to inspect mobile applications running on iOS or Android devices as well as the iOS or Android simulator
5. **UIAutomation Object** - This is used to inspect applications that expose their properties using the Microsoft's newer UIAutomation technology. This is typically used by applications written in WPF, Silverlight and Java SWT.

For more details on each Spy type, refer to specific topic above or view the [Spy Dialog](#) help topic.

2.



Open the **Object Spy Dialog**. This can be done directly using the Spy button in the main

Rapise window's toolbar, or by pressing the  **Spy(Ctrl+5)** button in the [Recording Activity](#) dialog during recording or learning.

3. Press the **Start Tracking** button (or type CTRL+G).
4. As you mouse over different objects, you will see the contents of the Object Spy dialog change as it collects information about the object.
5. Mouse over the object you wish to spy on and press **CTRL+G**. The reduced-size tracking dialog will be expanded into the the larger [Object Spy Diaog](#) dialog, presenting all the available information for the object.

See Also

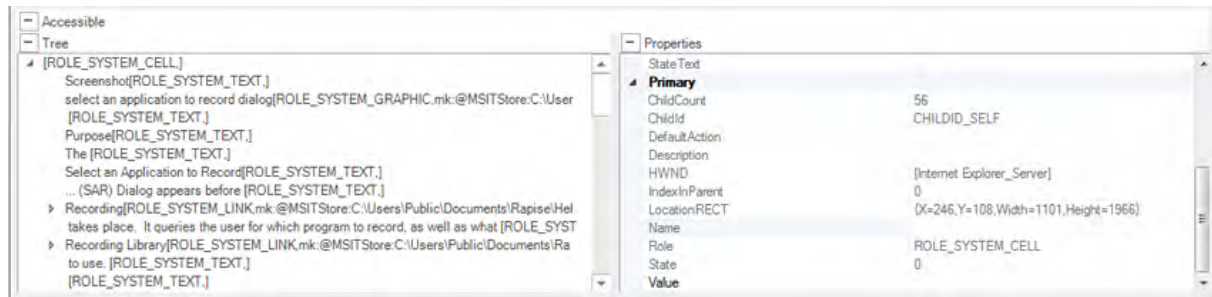
- See the [Object Spy Dialog](#) for more details.

2.4.1.7.1 Accessible (MSAA) Spy

Purpose

The **Accessible Spy** is used to inspect applications that contain Microsoft Active Accessible (MSAA) objects.

Screenshot



Features

The Accessible Spy has the following features:

- The **Tree** pane lets you view the hierarchy of MSAA objects available in the application
- The **Properties** pane lets you view the exposed properties of the highlighted MSAA object

Commands

In addition to viewing the object hierarchy and object properties, you can perform the following tasks:

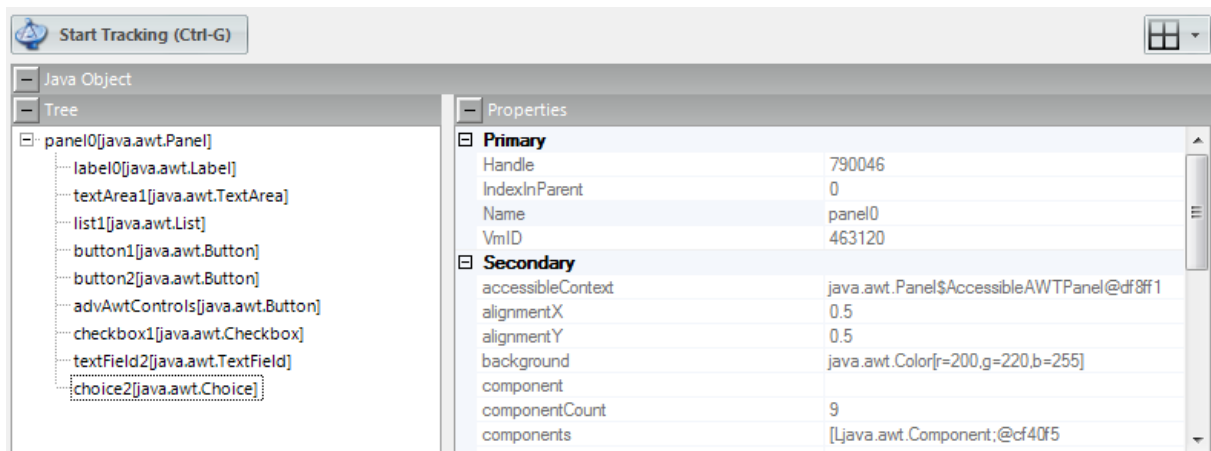
- **Parent** - This selects the parent object of the one displayed
- **Highlight** - This will attempt to Flash (highlight with a red rectangle) the object selected in the Spy.
- **Refresh** - this simply refreshes the Spy view to reflect any changes that might have occurred in the application.
- **Default Action** - this will perform the default action on the selected object in the Spy
- **Mouse Click** - this will perform a simple mouse click on the selected object in the Spy
- **Save to File** - this will save the properties of the currently selected object to a text file.

2.4.1.7.2 Java Spy

Purpose

The **Java Spy** is used to inspect applications that contain **Java (Swing / AWT)** objects.

Screenshot



Features

The Java Spy has the following features:

- The **Tree** pane lets you view the hierarchy of Java objects available in the application
- The **Properties** pane lets you view the exposed properties of the highlighted Java object

Commands

In addition to viewing the object hierarchy and object properties, you can perform the following tasks:

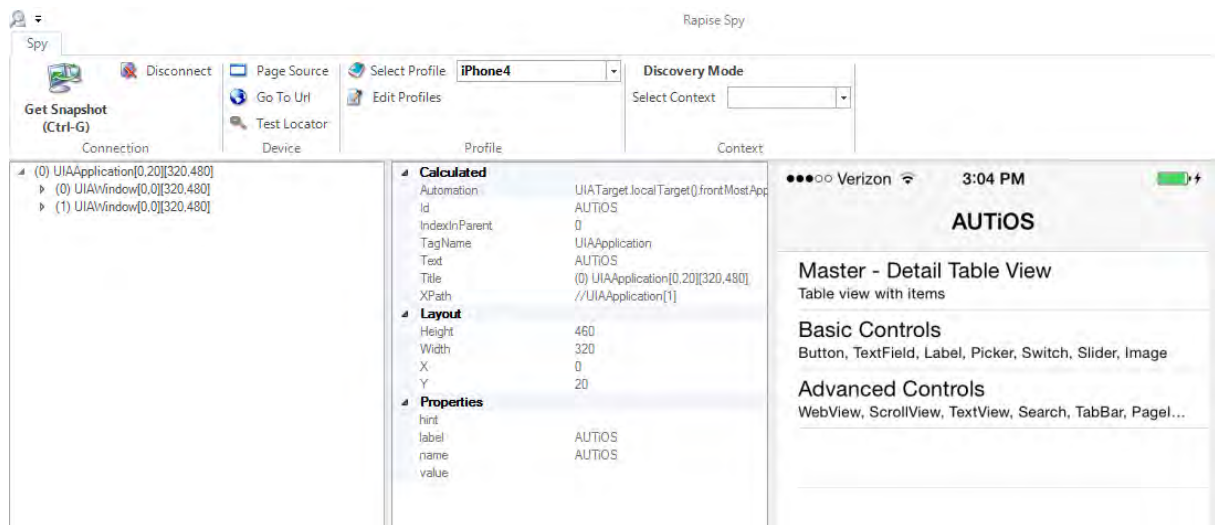
- **Parent** - This selects the parent object of the one displayed
- **Highlight** - This will attempt to Flash (highlight with a red rectangle) the object selected in the Spy.
- **Refresh** - this simply refreshes the Spy view to reflect any changes that might have occurred in the application.
- **Save to File** - this will save the properties of the currently selected object to a text file.

2.4.1.7.3 Mobile Spy

Purpose

The **Mobile Spy** is used to inspect applications running on connected Mobile Devices (e.g. Apple iOS and Android devices).

Screenshot



The **Mobile Spy** dialog shows a snapshot of the screen displayed on the connected Mobile device as well as the properties of the currently selected object. You can select the object either by clicking on the screen snapshot or the control hierarchy displayed to the left. The properties displayed will depend on the type of mobile device being tested (iOS vs. Android).

Tree

The spied upon object and its children are displayed here. When you click on an object it will also be highlighted in the **snapshot** view to the right.

Properties

Object fields and field values are displayed here.

Snapshot

This displays a snapshot of what is displayed on the mobile device being tested. The objects in the snapshot are clickable, which allows you to visually select objects from the hierarchy.

Tools

- **Get Snapshot (CTRL + G)** - This will connect to the mobile device and get the latest snapshot from the mobile device and display in the right-hand window.
- **Disconnect** - This option disconnects the Spy from the mobile device and ends the connection.
- **Learn Object** - This option is only displayed in Recording mode and lets you take the currently selected object and add it to the [Object Tree](#) for the current test. It can then be used as a scriptable object in the test script.
- **Page Source** - This lets you view the source of the mobile device in a text editor such as Notepad. It will show the objects in the treeview represented as an XML document.
- **Go to URL** - This will instruct the mobile device to navigate its built-in web browser to a specific URL.
- **Test Locator** - This will display the [Mobile Test Locator](#) dialog box that lets you try different locators to resolve specific objects in the object hierarchy. It will include options such as using XPath and IDs.
- **Select Profile** - This lets you change the profile of the mobile device you are testing while the Spy dialog is open.
- **Edit Profiles** - This will open up the [Mobile Settings](#) dialog box. You cannot be connected to do

this.

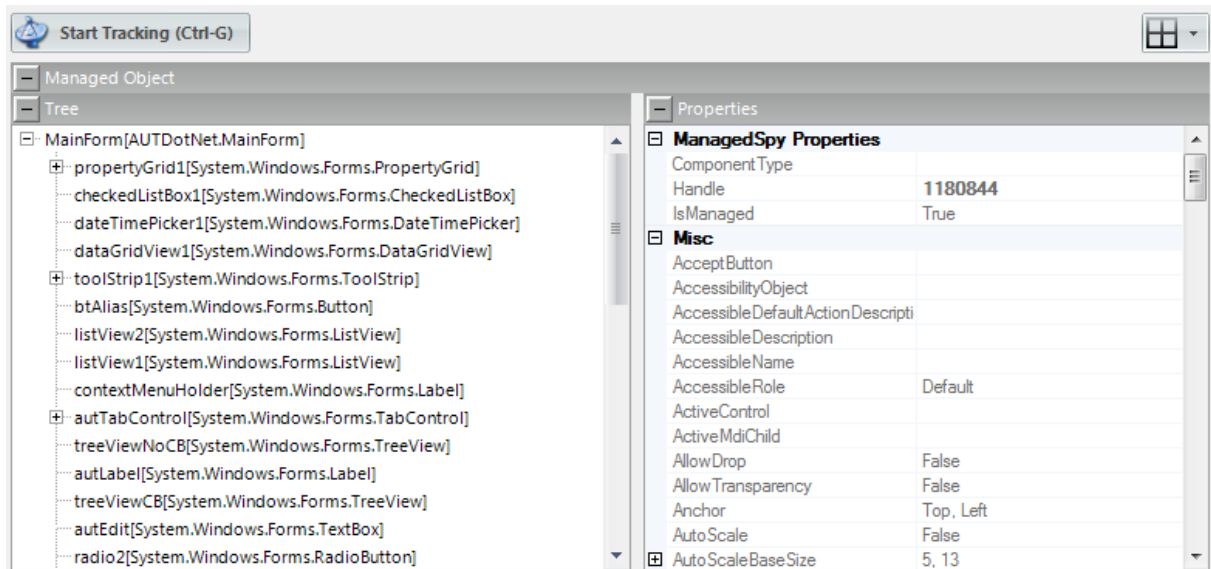
- **Context** - This will display either 'Discovery Mode' or 'Recording Mode'.

2.4.1.7.4 Managed (.NET) Spy

Purpose

The **Managed Spy** is used to inspect Microsoft .NET applications that contain .NET framework objects (e.g. using Windows Forms).

Screenshot



Features

The Managed Spy has the following features:

- The **Tree** pane lets you view the hierarchy of .NET objects available in the application
- The **Properties** pane lets you view the exposed properties of the highlighted .NET object

Commands

In addition to viewing the object hierarchy and object properties, you can perform the following tasks:

- **Parent** - This selects the parent object of the one displayed
- **Highlight** - This will attempt to Flash (highlight with a red rectangle) the object selected in the Spy.
- **Refresh** - this simply refreshes the Spy view to reflect any changes that might have occurred in the application.
- **Save to File** - this will save the properties of the currently selected object to a text file.

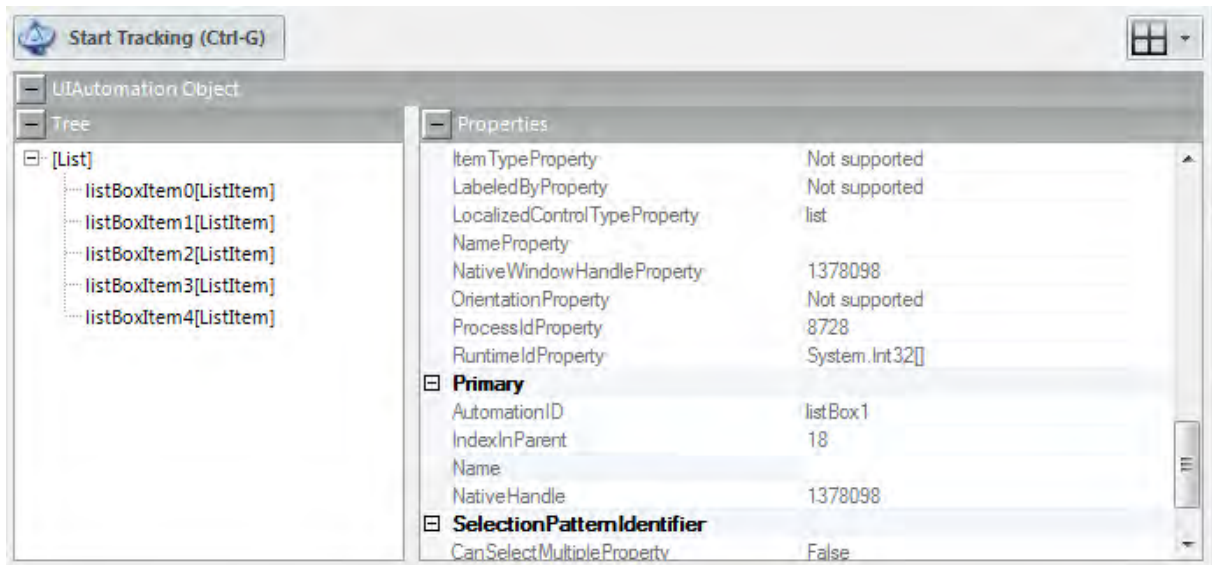
2.4.1.7.5 UI Automation Spy

Purpose

The **UIAutomation Spy** is used to inspect applications that contain Microsoft UIAutomation objects

(e.g. Windows Presentation Framework, Silverlight or Java's Standard Widget Toolkit running on Windows).

Screenshot



Features

The UIAutomation Spy has the following features:

- The **Tree** pane lets you view the hierarchy of UIAutomation objects available in the application
- The **Properties** pane lets you view the exposed properties of the highlighted UIAutomation object

Commands

In addition to viewing the object hierarchy and object properties, you can perform the following tasks:

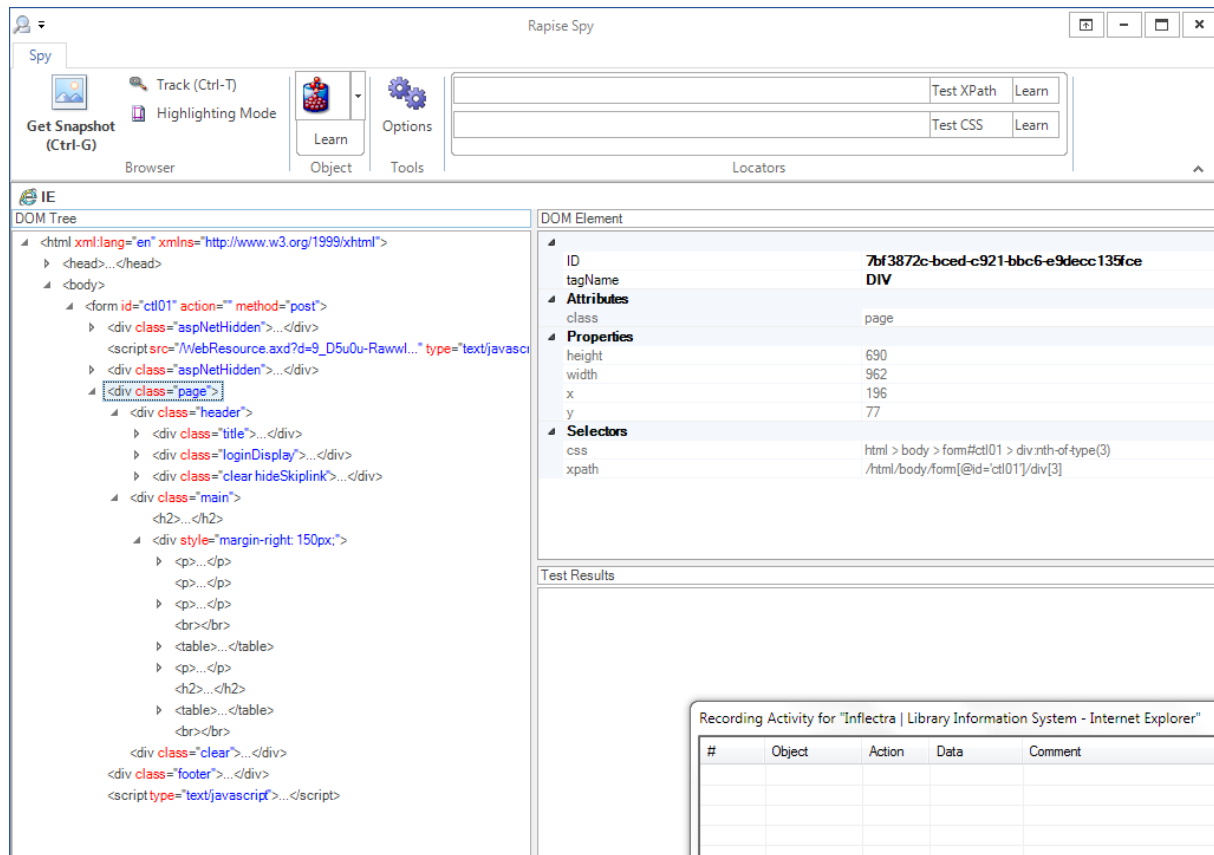
- **Parent** - This selects the parent object of the one displayed
- **Highlight** - This will attempt to Flash (highlight with a red rectangle) the object selected in the Spy.
- **Refresh** - This simply refreshes the Spy view to reflect any changes that might have occurred in the application.
- **Save to File** - this will save the properties of the currently selected object to a text file.

2.4.1.7.6 Web Spy

Purpose

The **Web Spy** is used to inspect web applications running on any of the supported web browsers (currently Internet Explorer, Firefox and Chrome). It allows you to view the hierarchy of objects in the web browser **Document Object Model (DOM)**. In addition it makes the testing of dynamic data-driven web applications easier because it lets you test out dynamic [XPath](#) or [CSS](#) queries against the web page and verify that the objects return match your expectations.

Screenshot

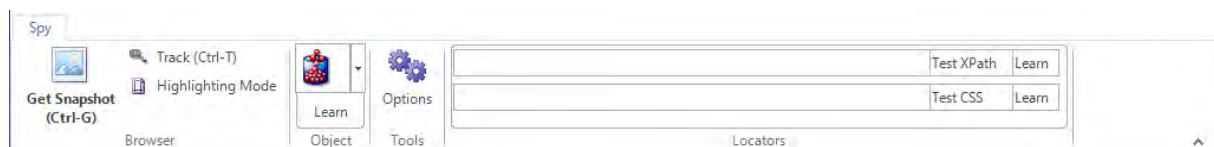


The **Web Spy** dialog shows a hierarchical representation of the HTML DOM elements that make up the web application being tested as well as the properties of the currently selected object. You can select the object by clicking on the object hierarchy displayed to the left. The properties displayed are categorized into different types that are described below.

The **Web Spy** also lets you visually highlight an item in the web browser from the object hierarchy and also the reverse - selecting an object in the hierarchy by clicking on its representation in the web browser.

Spy Toolbar

The Web Spy toolbar provides the following tools:

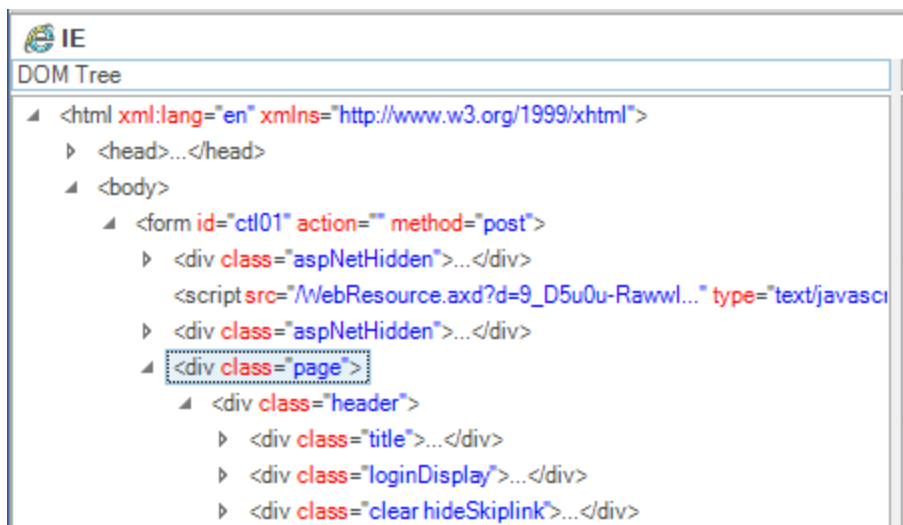


- **Get Snapshot (Ctrl-G):** Clicking on this command will refresh the contents of the DOM Tree. This should be done whenever a change is made to the state of the web page in the web browser and you want to view how the DOM objects have been changed after the change.
- **Track (Ctrl+T):** This tool lets you select items in the web application as rendered by the web browser and have the corresponding object be selected in the DOM tree window. This is useful if you are not sure where an item is located in the DOM tree but you can see it in the browser.

- **Highlighting Mode:** When this is selected, whenever you select an object in DOM Tree, it will highlight the item in the rendered web page with a red square. This allows you to visually see an item in the DOM tree and how it appears to the user.
- **Learn:** Clicking on this tool lets you take the currently selected object and add it to the [Object Tree](#) for the current test. It can then be used as a scriptable object in the test script. When you click on the Learn button, you have the choice (in the dropdown list) of learning the object in terms of either its **XPath** or **CSS** properties.
- **Options:** Clicking on this brings up the [Web Settings](#) dialog box.
- **Locators:** This section is described separately below in the 'Test Results' section. These tools allow you to try out different XPATH and CSS queries to see which objects match. You can then Learn the results of these queries as new Rapise objects.

DOM Tree

The DOM tree lets you view all of the HTML elements (also known as DOM objects) that make up the web application / web page being tested. The elements are showing in a hierarchical tree representation that mirrors how they are nested on the page. Each element is displayed along with the various attributes (class, id, style, etc.) that are associated with the element:



The DOM elements are shown in gray, with the attribute names being displayed in red and the attribute values in blue.

Sometimes you have more attributes displayed than can be easily read. To make viewing the DOM tree easier, you can use the [Web Settings](#) dialog to set a list of attributes that should be excluded from the DOM tree pane.

- When you click on an element in the DOM tree its properties are displayed in the **DOM Element** pane and it's highlighted in the web browser.
- When you right-click on an element it opens a popup menu with the following options:
 - Copy - copies node text to clipboard (no attribute truncation)
 - Highlight - highlights the element in the browser
- Double clicking on an element copies its [XPath](#) and [CSS](#) to the ribbon

DOM Element

This pane displays the properties of the currently selected object:

DOM Element	
ID	ff4ae447-3791-07c5-a044-6027910dc22e
tagName	TR
Accessibility	
role	rowheader
Properties	
height	24
width	641
x	694
y	177
Selectors	
css	
xpath	/html/body/form[@id='ctl01' and @name='ctl01']/table[@id='tbl

The properties that are displayed are grouped into the following categories:

- **Primary**
 - innerHTML - this contains a textual representation of all the HTML content inside this element (if any)
 - tagName - this contains the name of the HTML element in upper case (e.g. TD, TABLE, DIV)
- **Attributes** - all attributes that are not in the Primary or Accessibility section appear here
 - id - this contains the ID of the DOM element, if specified in the page
 - style - this contains the inline styles defined for the element
 - class - this contains the list of CSS classes applied to the element (separated by spaces if more than one)
- **Accessibility** - this contains all of the role or aria-* attributes that are defined in the W3C ARIA accessibility standard
 - role
 - aria-*
- **Properties** - this contains the computed positional information about the element
 - height
 - width
 - x
 - y
- **Selectors**
 - css - this is the [CSS](#) selector that can be used to uniquely locate this element. If you click LEARN using [CSS](#), this is what will be recorded with the object.
 - xpath - this is the [XPath](#) selector that can be used to uniquely locate this element. If you click LEARN using [XPath](#), this is what will be recorded with the object.

Test Results

In addition to navigating the DOM tree and Learning specific objects, the other main capability of the DOM Spy is the ability to create queries using either [XPath](#) or [CSS](#) to see which objects match the query and then learn the specific result. For example we want to find all the table cells that have at least some style information specified.

a) Using XPath

If you enter in the [XPath](#) query to locate the table cells in the **Locators** box at the top.

<code>//table//td[@style]</code>	Test XPath	Learn
	Test CSS	Learn

Locators

When you click **Test XPath** it will display all of the DOM elements that match the query:

Test Results

▲ Locator: `//table//td[@style]`, found: 4

```

<td style="padding-right: 50px;">...</td>
<td style="padding-right: 50px;">...</td>
<td style="vertical-align: top;">...</td>
<td style="vertical-align: top;">...</td>

```

You can now refine the query to only find the items you want to test.

b) Using CSS

If you enter in the [CSS](#) selector to locate the table cells in the **Locators** box at the top.

	Test XPath	Learn
<code>table td[style]</code>	Test CSS	Learn

Locators

When you click **Test CSS** it will display all of the DOM elements that match the query:

Test Results

▲ Locator: `CSS=table td[style]`, found: 4

```

<td style="padding-right: 50px;">...</td>
<td style="padding-right: 50px;">...</td>
<td style="vertical-align: top;">...</td>
<td style="vertical-align: top;">...</td>

```

You can now refine the query to only find the items you want to test.

In either case, if you can adjust the query to only match a single element, you can then click the appropriate **Learn** button next to the **Test XPath** or **Test CSS** buttons. That will learn the specified query as a new object that can be scripted against in Rapise. This is very useful if you want to dynamically select an object based on its content rather than a hard-coded ID or position.

In addition, in the test results view, when you click on a result:

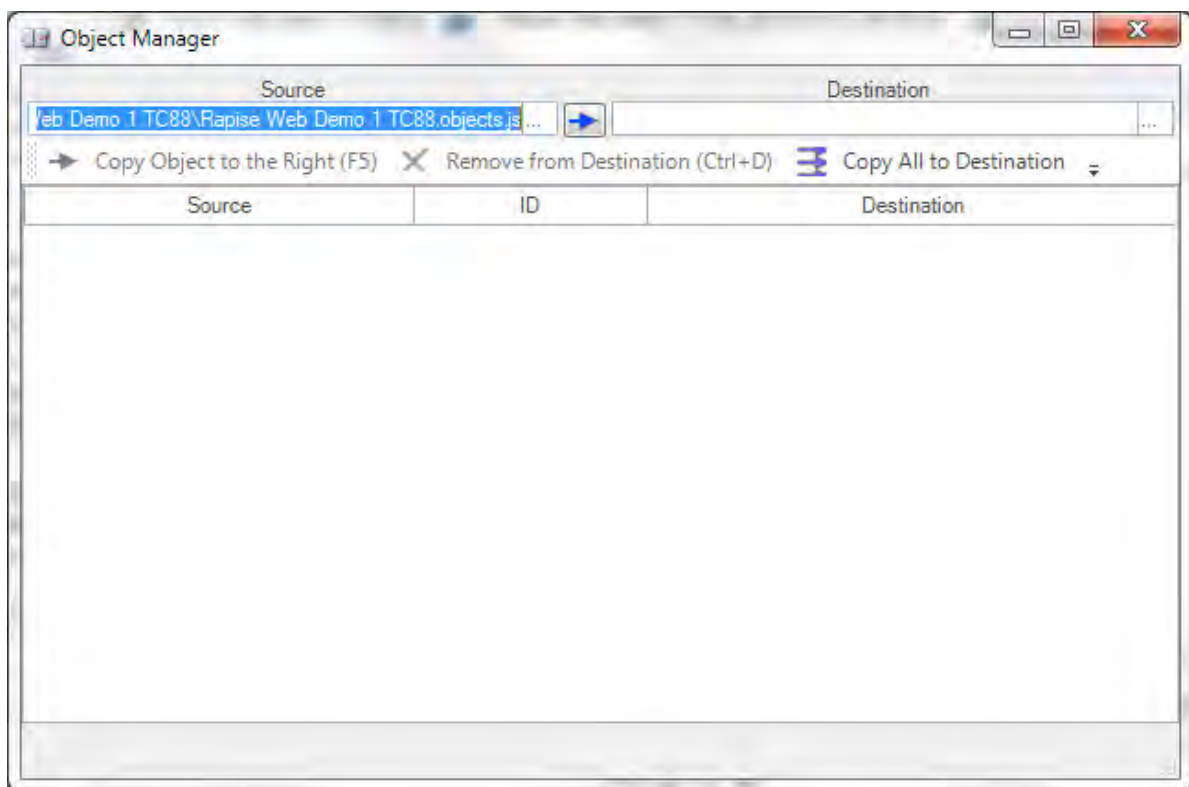
- The right-click popup menu is the same as for DOM Tree if type of the result is a DOM Element
- If the result is simple text then only Copy is available, which copies the text
- Clicking on a DOM element in the results list opens it in DOM Element pane and also selects it in the DOM Tree pane

2.4.1.8 Object Manager

Purpose

The **Object Manager** allows you to merge the **object trees** of two different Rapise tests. This can be useful when you have a new test that needs some of the objects from a test that you have already written.

Screenshot



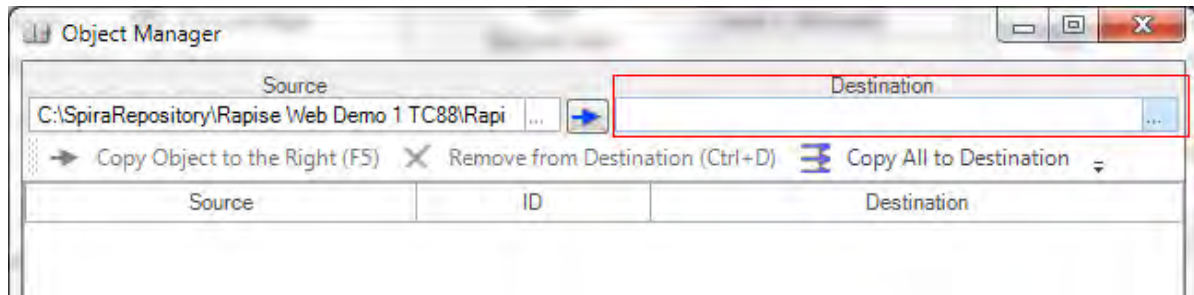
How to Open

Click on the **Object Mgr** icon in the main Rapise **Test Ribbon**. This will display the object manager screen for the current test as illustrated in the screenshot above.

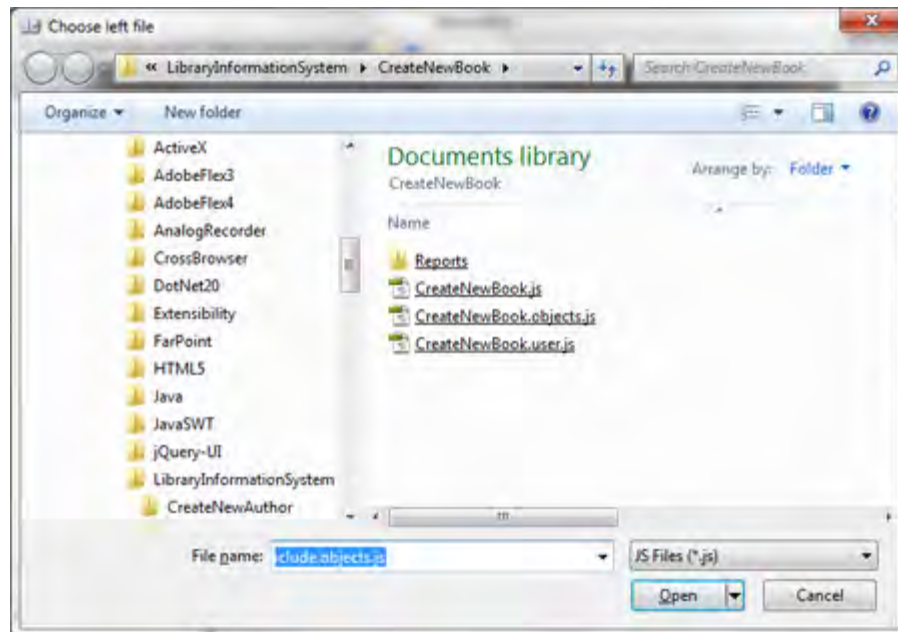
Choosing Files to Merge

In the example above we have opened up a test case that has some objects. Now we need to open up

another test that also has some objects. To do this, click on the [...] button to the right of the **Destination** text box to open up a Rapise test object file (*.objects.js):



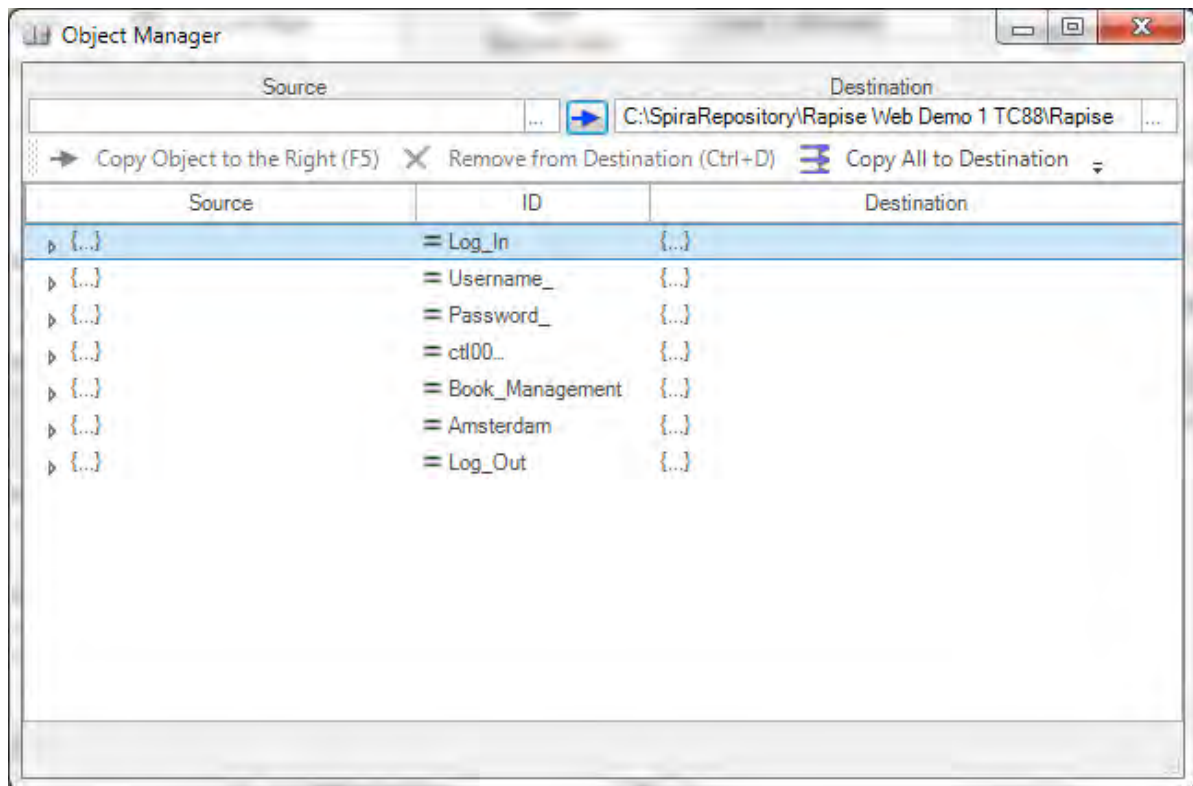
This will then bring up the File selection dialog box, where you can choose which other object file to open:



Once you have selected the file, the **Object Manager** dialog will display the list of objects to be merged (see next section).

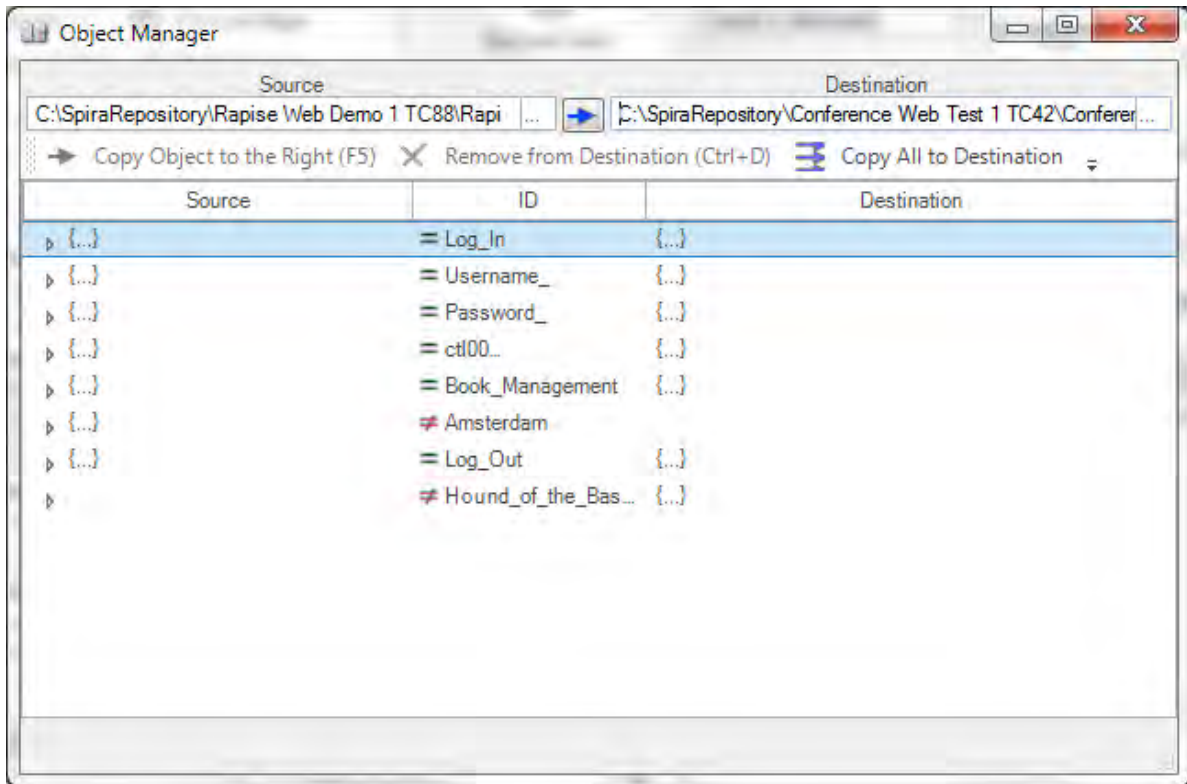
If you click on the [...] button in left hand side of the dialog box, marked **Source**, you will be able to select a different Rapise test object file (*.objects.js) that you want to copy the objects **from**.

If you want to make the current test the **Destination** rather than the **Source** (i.e. you want to add objects to the current test rather than exporting from the current test), simply click the blue **Arrow** icon and the current test will be moved to the destination:

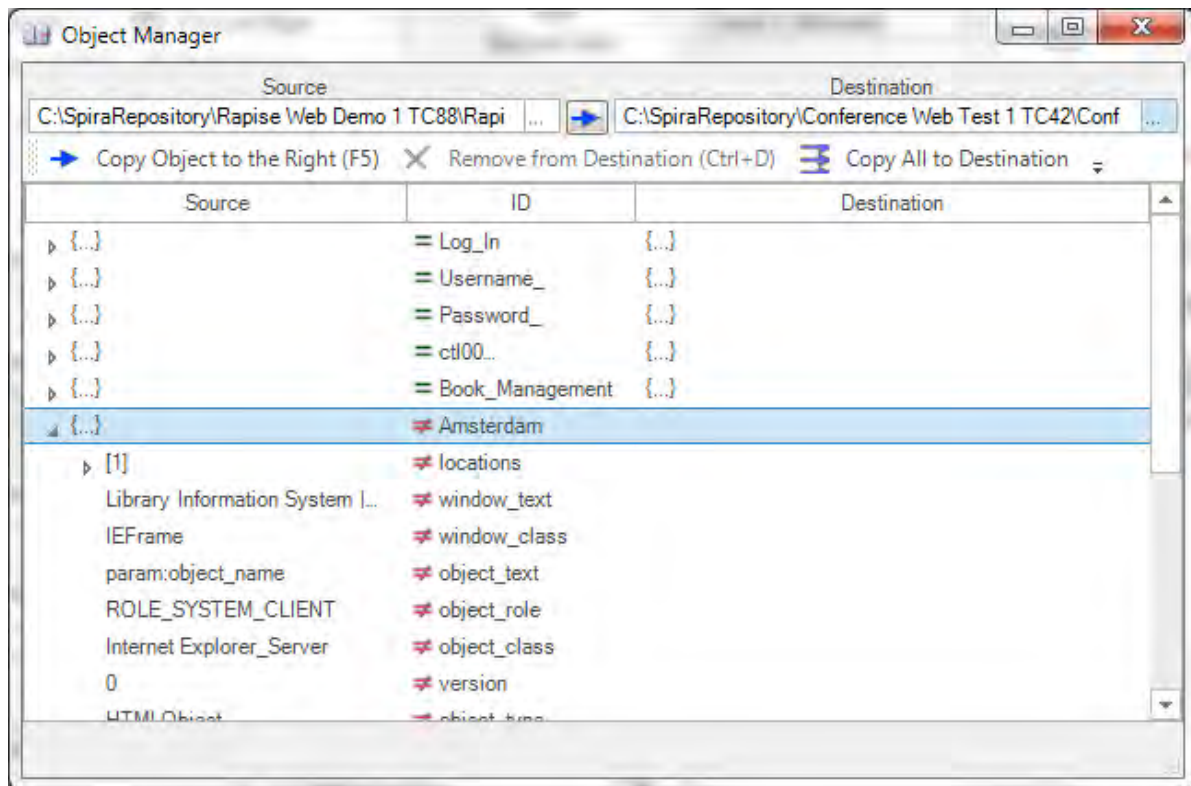


Viewing the Objects to Merge

Once you have selected both the source and destination object files, the system will display the dialog that lets you see all the objects defined the source and destination tests. You can now choose which objects to add/delete to/from the destination test:



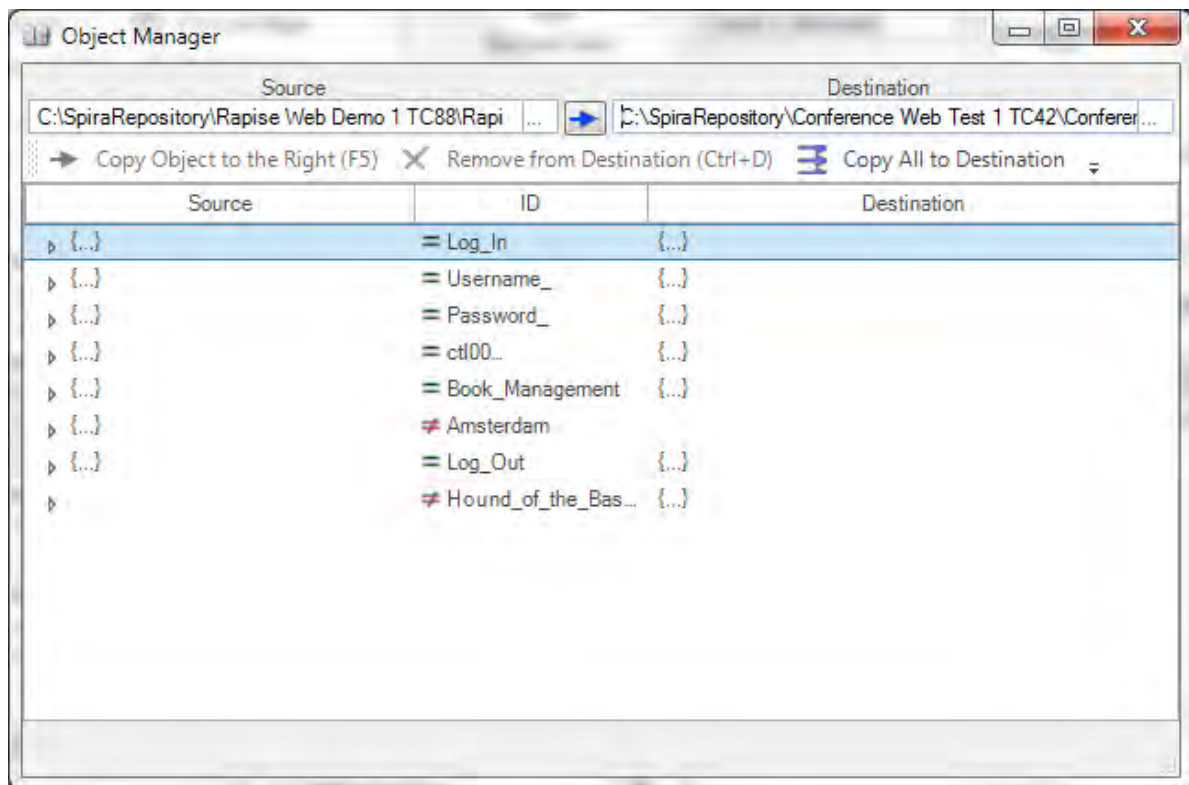
For each object in the **object manager** you will see an [>] expand icon in the **left-hand** side. When you click on this icon it will expand the object to display its properties. If the same object is in both the source and destination, you will see the properties of both versions on the left and right hand sides respectively. If it only exists in the source or destination, then it will only show the properties on the appropriate side:



Each object in the source object list will be displayed with one of two icons:

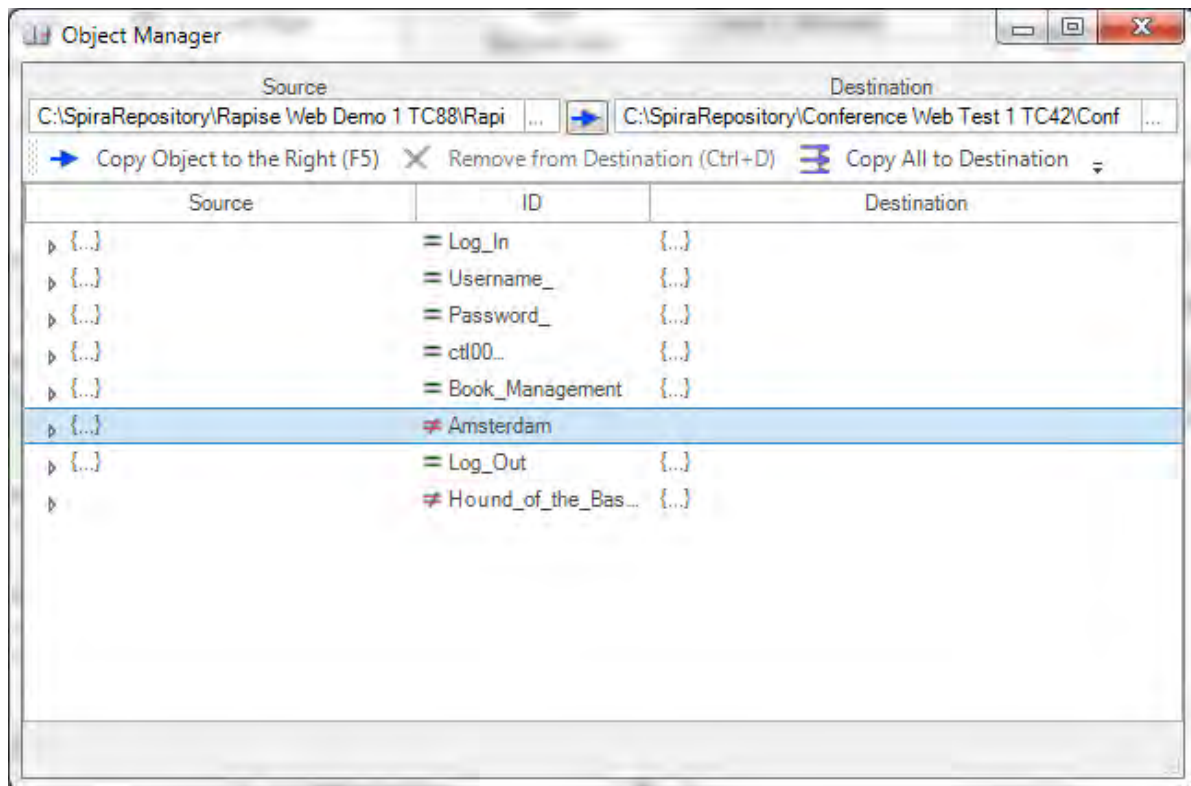
- **equals (=)** - this means that the same object exists in both the **source** and **destination** test object files.
- **not-equals (≠)** - this means that the object only exists in the **source** file and not in the **destination** or vice-versa

You can see which file(s) an objects is defined in (source, destination or both) by looking for the {...} icon. If you see this on the left hand side only, this object only exists in the source file, if you see it in the right-hand side, it only exists in the destination. If you see it on both sides then it exists in both the source and destination:

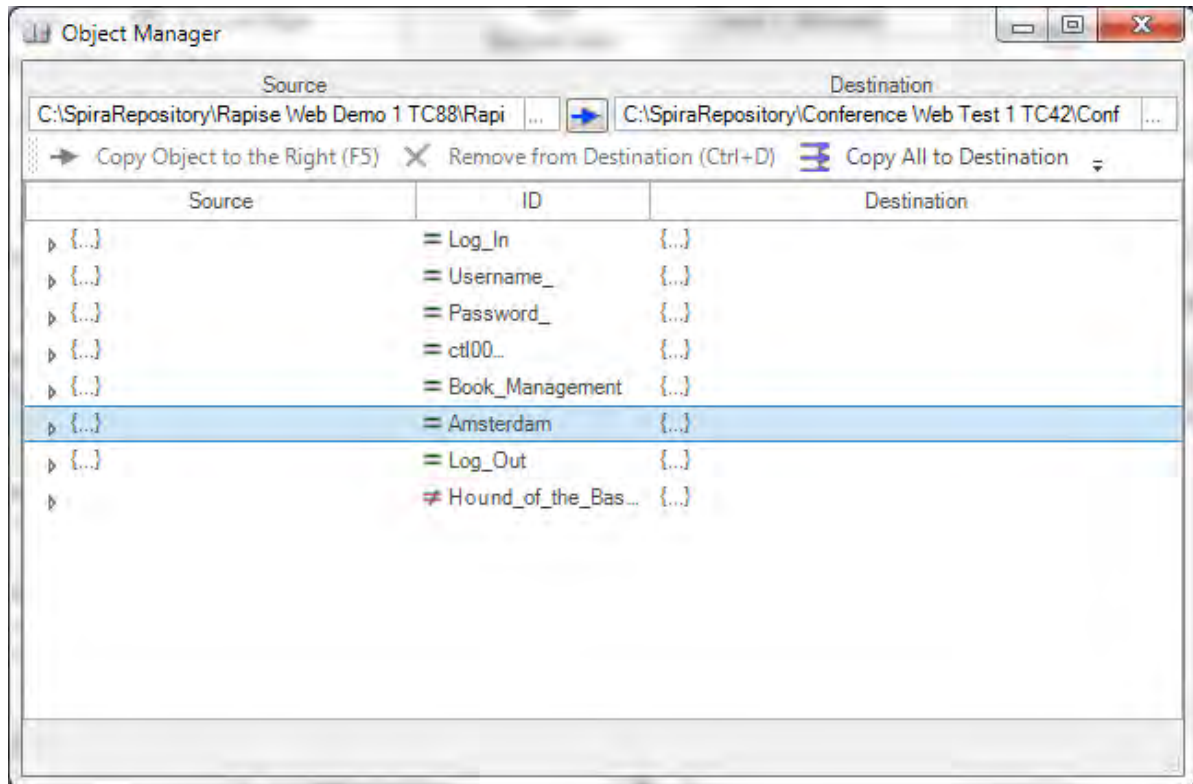


Merging the Objects

To add an object from the **source > destination** test (for example the 'Amsterdam' object in this example), select the row in question:

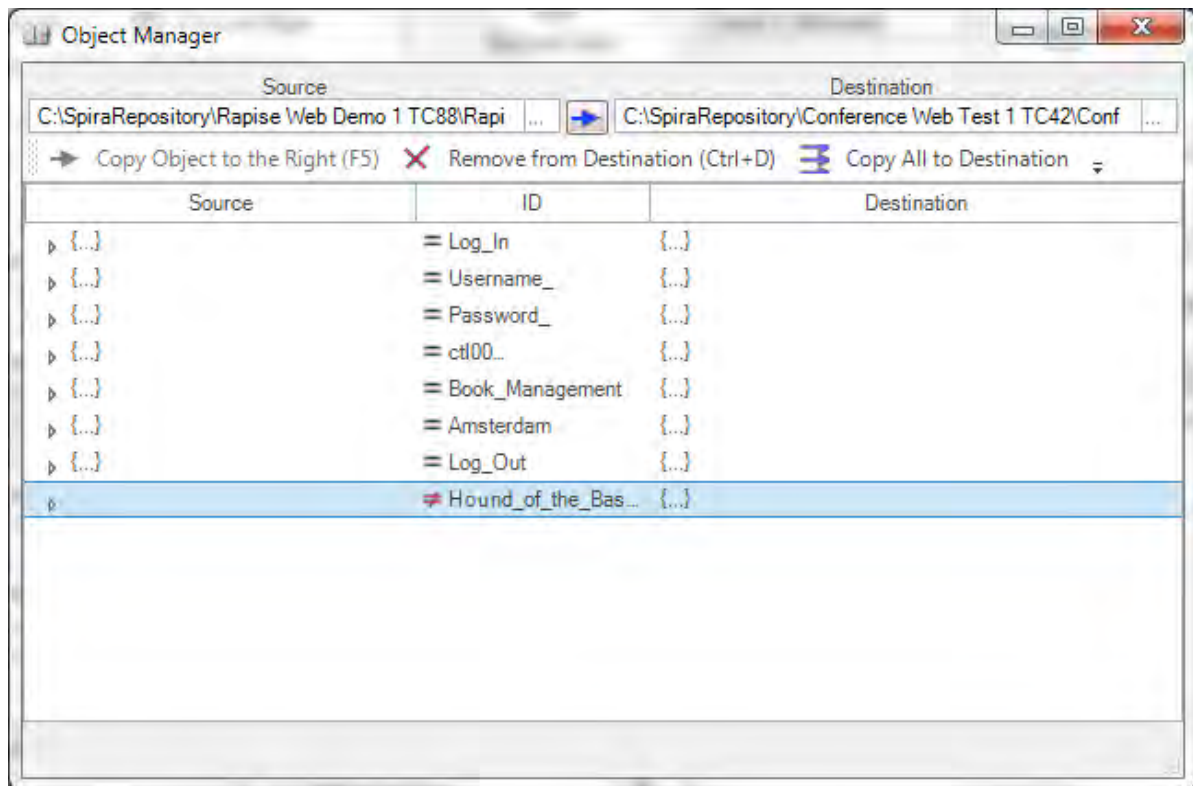


Then click on the '**Copy Object to the Right (F5)**' icon in the toolbar. This will copy the object from the source to the destination:

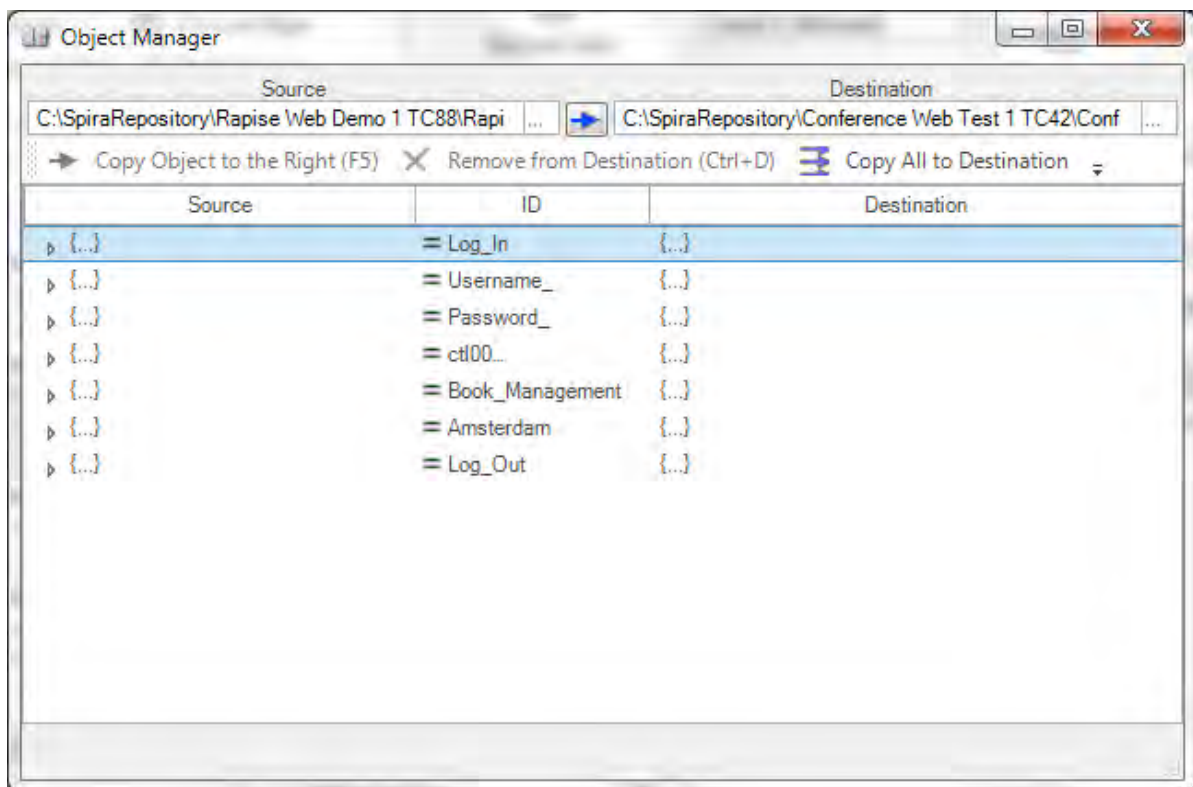


You can tell that the object has been copied because the **not-equals (#)** sign changes to the **equals option (=)**.

Conversely, to remove an object (e.g. 'Hound of the Baskervilles') from the destination, simply select the row:



Then click on the **'Remove from Destination (Ctrl+D)'**:



The object will now have been removed from the **destination** object tree.

Warning: All of the changes you make to the objects file are committed immediately, so only delete objects in the destination test that you no longer want to be part of the test.

2.4.2 Playback

Purpose

When you record a test, Rapise translates your actions into a script. When you **playback** the test, the script is executed.

Usage

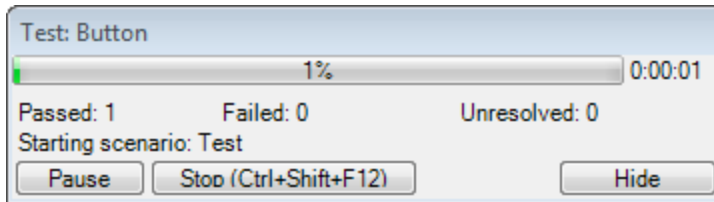
You can either run your script from the [Command Line](#), or you can play it back while Rapise is open (described below):

1. You will first need to [open your test](#). There is no need to have the AUT (Application Under Test) open. Rapise will open the AUT before it begins execution of the test.
2. Now, press the play button at the top of the Rapise window.



Executing

3. During test execution, Rapise displays an execution monitor dialog box that lets the user see the progress of testing playback. The dialog is only shown during test execution and can be turned off in the [Options](#) dialog. The following is a screenshot of the test execution monitor.



The user can pause or stop the test execution by clicking either the **Pause** or **Stop** button.

4. When Rapise is done executing the test, results will be displayed in a table. The rows with green text are steps that passed; the rows with red text are steps that failed. The following is a screenshot of test results where every step passed:

#	Type	Start	Name	Status	Browser	Comment	Iteration
	Assert	11:47:13.659	Username:.DoSetText(["librarian"])	Pass	Internet Explorer HTML	Returned Value: true	0
	Assert	11:47:13.862	Password:.DoSetText(["librarian"])	Pass	Internet Explorer HTML	Returned Value: true	0
	Assert	11:47:14.096	ct100\$MainContent\$LoginUser\$LoginButton.DoClick()	Pass	Internet Explorer HTML	Returned Value: true	0
	Assert	11:47:14.517	Book Management.DoClick()	Pass	Internet Explorer HTML	Returned Value: true	0
	Assert	11:47:15.063	(Create new book) .DoClick()	Pass	Internet Explorer HTML	Returned Value: true	0
	Assert	11:47:15.609	Name:.DoSetText(["The Restaurant at the end of th	Pass	Internet Explorer HTML	Returned Value: true	0
	Assert	11:47:15.812	Author:.DoSelect(["Agatha Christie"])	Pass	Internet Explorer HTML	Returned Value: true	0
	Assert	11:47:16.015	Genre:.DoSelect(["Science Fiction"])	Pass	Internet Explorer HTML	Returned Value: true	0
	Assert	11:47:16.186	ct100\$MainContent\$btnSubmit.DoClick()	Pass	Internet Explorer HTML	Returned Value: true	0
#	Assert	11:47:16.654	Failure in Test	Fail	Internet Explorer HTML		0

Test Fail
Total: 15 Pass; 11 Fail; 2 Info; 2

See Also

- For more information about the report, see [Automated Reporting](#).
- For information about recording a test, see [Recording](#).
- For instructions on using the **Command Line**, look [HERE](#).

2.4.2.1 Command Line

Purpose

Rapise test scripts can be run from the **command line**.

Usage

The form of the command is:

```
cscript SeSExecutor.js path_to_sstest_file [evals]
```

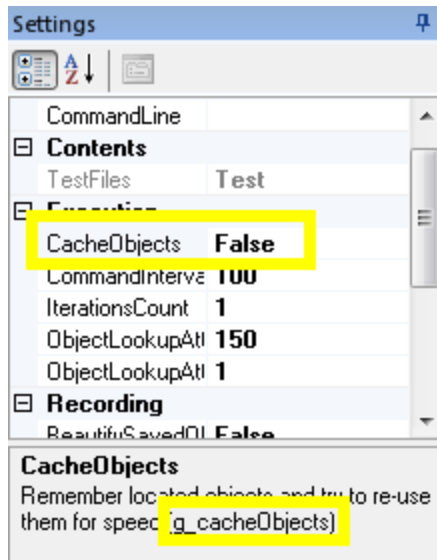
where

path_to_sstest_file is a path to sstest file, e.g. "C:\Program Files\Inflectra\Rapise\Samples\SmarteATM\SmarteATM.sstest"

evals (optional) is a statement like this:

```
-eval:varname1= value 1;varname2= value2;...
```

varname is a global variable associated with an option in the [Settings Dialog](#). Global variables are prefixed with a **g_**. The global variables under the **Execution** and **Recording** headings can be found by clicking on the corresponding option in the Settings Dialog (see below):



Other variables include:

- g_scriptPath
- g_reportPath
- g_objectsPath
- g_configPath

Exit Code

- 0 indicates a pass
- 1 indicates failure

See Also

- [Settings Dialog](#)

2.4.2.2 Object Locator

Purpose

Object locators are created during [Recording/Learning](#) and used during [Playback](#) to identify [learned objects](#) and [simulated objects](#). There are four types of locators:

- **Location:** This locator uses the object's index relative to encapsulating objects for identification. The location is stored as a period separated list of indexes. For instance, 1.2.3 would be "the third object in the second object in the first object." The name, class, and role of the object are also stored.
- **LocationPath:** This locator remembers name, class, and role property information for the object and all of its encapsulating objects.
- **LocationRect:** This locator stores screen coordinates.
- **Ordinal:** This locator creates an array of object name/object class combinations. Each object is assigned an index in the array.

Usage

The locator for each object is specified in `saved_script_objects` in `<scriptname>.objects.js` your test script. Locator information is highlighted in the simulated object example below:

```
Obj10:{"version":0,"object_type":"SeSSimulated","object_name":"regex:.* -
Paint",
"object_class":"MSPaintApp","object_role":"ROLE_SYSTEM_WINDOW",
"object_text":"regex:.* - Paint",
"locations":[{"locator_name":"Location","location":{"location":"","
"window_name":"regex:.* - Paint","window_class":"MSPaintApp"}}]}
```

Locator Parameters

If a piece of information in the locator matches a piece of object info (object_name, object_class, object_role, object_text) then it is stored in the locator as "param:<object_info>". For example:

```
"object_name": "param:object_name",
"object_class": "param:object_class",
"object_role": "param:object_role",
```

Over-riding Locator Parameters

You can over-ride the information used to locate your object at runtime. Normally, to refer to an object, you use the SeS function:

```
SeS('Obj9')
```

To override locator parameters, specify the new value in the function call. In the following example, we over-ride the **object_name** parameter for object 9:

```
SeS('Obj9', {object_name:"regex:.*"})
```

You may want to change a parameter value for every locator/object in the program. For instance, perhaps the url of the webpage has changed. Use the global variable **g_locatorparams** as in the following example:

```
function Test()
{
  // Here we use direct parameter overriding
  SeS('Obj1', {url:"http://newaddr/"}).DoAction();
  SeS('Obj2', {url:"http://newaddr/"}).DoAction();

  // And this is equivalent to above
  g_locatorparams["url"]="http://newaddr/";
  SeS("Obj1").DoAction();
  SeS("Obj2").DoAction();
  ...
}
```

See Also

- [Object Learning](#)
- [Playback](#)

2.4.3 Automated Reporting

Purpose

Each time you playback a test, Rapise automatically generates a report detailing the steps of the test,

the data values used, and the outcome of each step.

Usage

Execute your test using the instructions [here](#). When the test is complete, the [Report Tab](#) will appear in the Ribbon, and a report file (ending in `.trp`) will open in the [Content View](#). It will look like this:

Drag a column header here to group by that column.

#	Name	Start	Type	Comment	Status	Iteration
	Character read successfu	15:32:28.89	Assert	T	Pass	0
	Letter size is 44	15:32:28.89	Assert		Fail	0
	Character read successfu	15:32:28.90	Assert	e	Pass	0
	Letter size is 24	15:32:28.92	Assert	Text = 'e' Font = {Name='Calibri'; Size=2	Pass	0
	Character read successfu	15:32:28.93	Assert	s	Pass	0
	Letter size is 12	15:32:28.93	Assert	Text = 's' Font = {Name='Calibri'; Size=1	Pass	0
	Character read successfu	15:32:28.95	Assert	t	Pass	0
	Letter size is 72	15:32:28.96	Assert	Text = 't' Font = {Name='Calibri'; Size=7	Pass	0
	C:\Program Files	15:32:28.96	Test	Passed:7 Failed:1	Fail	

Test Fail
Total:9 Pass:7 Fail:2 Info:0

The first row (with a white background) is used for [Report Filtering](#). The rows below that each represent a step in the test. The rows with green text represent success; the rows with red text represent failure. You can reposition the columns by dragging and dropping the column names.

The Columns

- **#:** For displaying icons.
- **Name:** The test name.
- **Start:** The time the test step began executing.
- **Type:** Can be one of the following values: Test; Assert; Message.
- **Comment:** Assertions and messages have associated comments. They are displayed here.
- **Status:** Whether the step passed, failed, or was merely informational.

Drag a column header here...

Drag a column header here to group by that column.

Use to order by the values in the chosen column. The result of dragging the **Status** column over looks like this:

Status

#	Name	Start	Type	Comment	Iteration
Status : Fail (2 items)					
+ Status : Pass (7 items)					

You can expand each item to see the corresponding report rows:

#	Name	Start	Type	Comment	Iteration
Status : Fail (2 items)					
	Letter size is 44	15:32:28.89	Assert		0
				Passed:7 Failed:1	
Status : Pass (7 items)					

Drag the **Status** icon back to undo the sort:

#	Name	Start	Status	Type	Comment	Iteration
Status : Fail (2 items)						
Status : Pass (7 items)						

See Also

- [Report Filtering](#)
- The report output file is specified in the [Settings Dialog](#) (**Settings** > **ReportPath**).
- The [Report tab](#) of the Ribbon is used to alter the report layout.

2.4.3.1 Writing to the Report

Purpose

You can write to individual columns, create columns, and add data to the [report](#).

Usage

Writing to and Creating a Column

Use `Tester.PushReportAttribute` or `Tester.SetReportAttribute` to set values in specific rows. `Tester.PopReportAttribute` reverses the effect of `Tester.PushReportAttribute`:

PushReportAttribute

```
Tester.PushReportAttribute(columnName, value);
```

```
...some test steps...           //the rows corresponding to these steps will have
                                //value in their columnName column
```

```
Tester.PushReportAttribute(columnName, value2);
```

```
...some test steps...           //the rows corresponding to these steps will have
                                //value2 in their columnName column
```

```
Tester.PopReportAttribute(columnName); //test steps proceeding this will be back
to value
```

If `columnName` does not exist, it will be added to the report.

SetReportAttribute

```
Tester.SetReportAttribute(columnName, value);
```

If *columnName* does not exist, it will be added to the report. Column *columnName* will be populated with *value* for rows created after this function call (unless specified otherwise).

Adding Data

Data must be associated with an **Assert** row or a **Message** row.

```
Tester.Assert(description, expression, data, columnValuePairs)
```

```
Tester.Message(description, data, columnValuePairs)
```

- **description** is a string.
- **expression** is the Boolean expression that the assertion tests.
- **data** is an array of data objects. Each data element is written to its own row below the assert/message row with which it is associated. Data can be text, a link, or an image. The following is an array with text, link, and image data.

```
[
    new SeSReportText(text),
    new SeSReportLink(urlString, linkText),
    new SeSReportImage(ImageWrapperObject, imageDescription)
]
```

- **columnValuePairs** is an object with key/value pairs. Column names are the keys. If the specified column does not exist, it will be created. Ex:

```
{requirement: "Req1.2.3", paragraph: "12.5"}
```

See Also



- [Automated Reporting](#)
- The [test samples](#) include a sample about reporting (Reporting.sstest)

2.4.3.2 Report Filtering

Purpose

Report Filtering lets you specify criteria to filter your view of the [test execution report](#). Rows that do not match your criteria are hidden.

Usage

You can filter the report view while the file is open. Directly above the first row of the report, there is a row of filter cells. Each one has a **matching criteria** button , a text-box to specify a filter value, a drop-down menu with **predefined filter values**, and a **clear** button  :

Drag a column header here to group by that column.

#	Name	Start	Type	Comment	Status	Iteration
		=				=
	Submit Transaction.DoAction()	14:09:32.17	Assert	Returned Value: true	Pass	0
	Verify that: WindowText=Transaction	14:09:32.48	Assert		Pass	0
	OK.DoClick()	14:09:32.87	Assert	Returned Value: true	Pass	0
	Transfer	14:09:32.87	Test	Passed:7 Failed:0	Pass	0
	Balance.DoAction()	14:09:33.14	Assert	Returned Value: true	Pass	0
	OK.DoClick()	14:09:33.40	Assert	Returned Value: true	Pass	0
	Balance	14:09:33.40	Test	Passed:2 Failed:0	Pass	0
	Application.DoMenu(["Account:Exit "])	14:09:35.06	Assert	Returned Value: true	Pass	0
	Exit	14:09:35.06	Test	Passed:1 Failed:0	Pass	0
	C:\Program Files	14:09:35.06	Test	Passed:7 Failed:0	Pass	

Test Pass
Total:33 Pass:33 Fail:0 Info:0

Matching Criteria

Matching criteria determine how to compare the filter string value you input with the values in the report. You can select from 16 matching criteria. Press the button marked **A** above the column you are filtering to see the possible criteria:

	Start	Type
	=	

- Starts with
- Contains
- Ends with
- Does not start with
- Does not contain
- Does not end with
- Does not match
- Not Like

Predefined Filter Values

If we expand the filter cell's drop-down menu, we will see a list of predefined filtering options:

ent	Status	Iter
	=	
	(Custom)	0
	(Blanks)	0
	(NonBlanks)	0
nt	Fail	0
	Pass	0

- **(Custom)**: This option has to do with the next section *Custom Filter Options*.
- **(Blanks)**: Matches all rows where the value for this column is blank.
- **(NonBlanks)**: Matches all rows where the value for this column is not blank.
- All other predefined values are copied from cells in the column you are filtering.

Custom Filter Option

To create a filter with multiple matching criteria and filter values, select **(Custom)** from the filter cell's drop-down menu. The **Enter filter criteria for... Dialog** will open. Instructions for how to use it are [here](#).

Item	Status	Item
	<input type="text"/> <input type="button" value="▼"/> <input type="button" value="✕"/>	=
	(Custom)	0
	(Blanks)	0
	(NonBlanks)	0
Item	Fail	0
	Pass	0

Undo Filtering

To undo filtering for a particular column, press the clear button for that column:

Status
= Pass <input type="button" value="✕"/>
Pass 0

See Also

- [Automated Reporting](#)
- [Enter filter criteria for... Dialog](#)

2.4.4 Scripting

Purpose

There are three reasons to script with Rapise:

1. To modify a [recorded](#) test to increase coverage, add [assert statements](#), or make the test [data-driven](#).
2. To extend recording functionality by defining your own objects, actions, and libraries.
3. To [customize the Rapise Engine](#).

Usage

Rapise scripts are written in JavaScript (Microsoft JScript). You can run and debug your script using the full featured [Internal Debugger](#). Rapise includes a testing API, with methods for manipulating images, spreadsheets, common GUI widgets, and more.

See Also

- Learn about MS JScript [HERE](#).

2.4.4.1 Understanding the Script

Purpose

When you [create a new test](#) in Rapise, four files are created:

- **<TestName>.sstest** ? the test meta-data
- **<TestName>.js** ? the test script file
- **<TestName>.objects.js** ? the file that contains recorded objects.
- **<TestName>.user.js** ? the file that contains user defined functions.

where **<TestName>** is the name of your Test.

You can have as many javascript files in your test directory as you like, but **<TestName>.js** is the test script (unless you specify otherwise in the [Settings Dialog](#)). When you record, your interactions are written to **<TestName>.js** and objects are written to **<TestName>.objects.js**; when you Playback the test, **<TestName>.js** is the script that will run. All Rapise test scripts must have the same basic structure.

Usage

If you are going to modify the script, or create a test script from scratch, you will need to know the test script structure:

Basic Script

The Recording tool creates a Rapise Script with three sections:

1. **<TestName>.js: A Test() function**

```
##### Script Steps #####  
function Test()  
{  
    //script logic  
}
```

2. **<TestName>.js: A list of required libraries: `g_load_libraries`**

```
g_load_libraries=["Generic"]; // This script will load the Generic library
```

3. **<TestName>.objects.js A list of learned objects in `saved_script_objects`.**

```
var saved_script_objects={  
    //list of objects used in this script ?  
};
```

All Scripts must have the above three sections.

Full script

The following functions are also recognized by Rapise and may be present in the test script. Put these functions either in **<TestName>.js** or **<TestName>.user.js**.

- **TestInit()** : This function is called once before script playback. It should be used to initialize script-wide data (counters, open datasets, etc).
- **TestFinish()** : This function is called once after test execution. It should be used to release

resources (data sets, spreadsheets). TestFinish() is a good place to post-process Reports. It may also be used as an integration point with external test management or bug tracking systems.

- **TestPrepare()** : For advanced users; TestPrepare() is called before recording and before playback. It may be used to properly initialize libraries.

See Also

To specify a different test script, see the [Settings Dialog](#). The test script is specified by **Settings > ScriptPath**.

2.4.4.2 Naming Conventions

Purpose

The Rapise engine and API follow some simple naming conventions.

Usage

You will find descriptions of the naming conventions below. Note: italicized text represents placeholders.

- **SeS<xxx>** ? public functions for user
- **Do<Action>** ? action implementations
- **_<somevar>** and **_<somename>** ? private functions and objects
- **g_<varname>** ? system global data.

2.4.4.3 Defining Functions

Purpose

The Rapise test script is in Javascript. You may define as many Javascript functions as you would like to call from your test script.

Usage

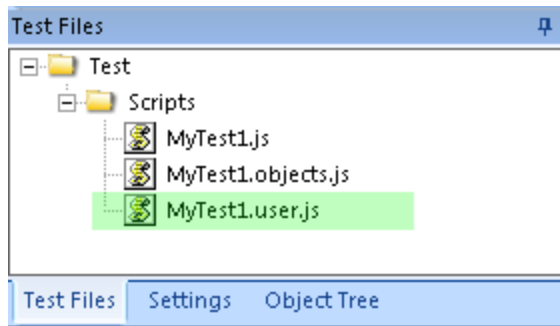
There are two ways to maintain additional functions: (1) Inside your test script and (2) in an external file.

Inside your Test Script

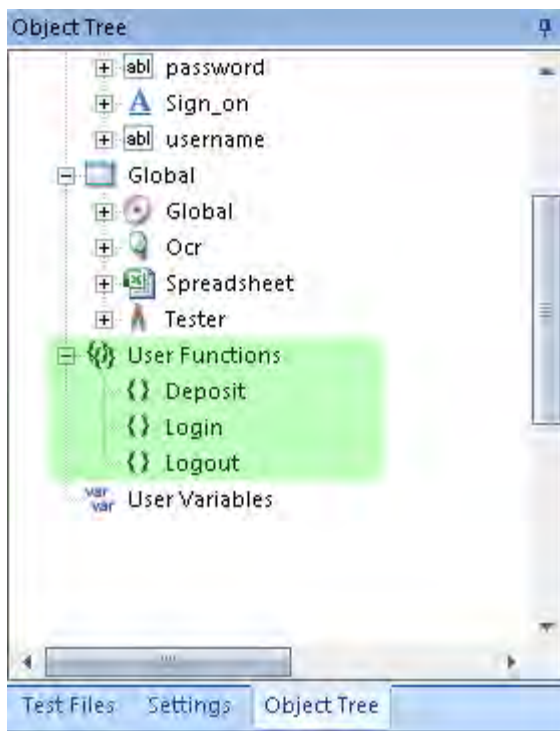
Define the function inside of one of the following functions: **Test()**, **TestInit()**, **TestFinish()**, or **TestPrepare()**. The Script Recorder will erase code placed outside of these functions.

Inside *.user.js File

It is recommended to put all user functions into `<testname>.user.js` file available in any test from its creation.



This file is automatically attached into every script. All variables and functions defined in it may be used in the test. User-defined functions are also available under the "User Functions" node in the Object Tree:



In an External File

You can define your function in another file and include it.

For example:

```
function Test()  
{  
    // Withdraw is defined inside the "Test" function  
    function Withdraw(amount)  
    {  
        Log("Start Withdraw of:"+amount);  
        // Withdraw logic is here  
    }  
}
```

```
Withdraw(12.34);

// Include "UtilityFunctions.js" to get at function Deposit()
eval(g_helper.Include(Global.GetFullPath("UtilityFunctions.js")));
// Deposit is defined in "UtilityFunctions.js"
Deposit(56.78);
}
```

See Also

- To learn more about what the Script Recorder will change in your test script, see [Multiple Recordings](#).

2.4.4.4 Global Variables

Purpose

Global variables are variables that can be accessed anywhere in the script. There are restrictions (specific to Rapise) as to where they may be placed in the test script. These restrictions do not apply to any additional script files you write and then call from your test script.

Usage

Define your global variables in **TestInit()**. Because Rapise uses javascript, you can initialize global variables inside of functions. See the sample TestInit() below.

```
function TestInit()
{
    number_of_visited_links = 0; //This variable becomes global
    var local_var = 5; //This variable is local for TestInit function
}
```

The keyword **var** gives variables local scope. A variable initialized without the keyword **var** will have global scope.

The **Script Recorder** knows about the following functions: **Test()**, **TestInit()**, **TestPrepare()**, and **TestFinish()**. Do not declare global variables outside of one of the preceding four functions. The Script Recorder alters the script each time it is run, and may erase your changes.

See Also

- See [Making Multiple Recordings](#) for details on what effect the script recorder will have on your test script.
- For details on the structure of the test script, see [Understanding the Script](#).

2.4.4.5 Including other Files

Purpose

The **eval** keyword lets you use external functions and data structures in your test script; **eval** is a javascript reserved word.

Usage

See the example below:

```
function Test()
{
    eval(g_helper.Include(Global.GetFullPath("myfunctions.js")));
}
```

See Also

- [Understanding the Script](#)

2.4.4.6 Regular Expressions

Purpose

A **regular expression** is a sequence of characters that describes how to construct a set of strings. It is composed of character literals and special characters. Each character literal represents one single character (such as "a", "b", "C", "1"). The special characters can represent a character, many characters, or a choice about how to select characters.

Special Characters:

Char	Description	Examples
?	Combines with whatever character/sub-expression precedes it to represent 0 or 1 occurrences of that character/sub-expression.	a? describes the set: { "", "a" }
*	Combines with whatever character/sub-expression precedes it to represent 0 or more occurrences of that character/sub-expression.	a* describes the set: { "", "a", "aa", "aaa", "aaaa", "aaaaa", "aaaaa", ... }
+	Combines with whatever character/sub-expression precedes it to represent 1 or more occurrences of that character/sub-expression.	a+ describes the set: { "a", "aa", "aaa", "aaaa", "aaaaa", "aaaaa", ... }
.	Any arbitrary character.	.* describes the set of all possible strings.
	Denotes a choice between two strings	ab ba describes the set: { "ab", "ba" }
()	Denotes a sub-expression.	(abc)?d describes the set: { "abcd" , "d" }
[]	Denotes one character chosen from all the characters with the brackets. You can use a hyphen to denote a range.	[abcde] describes the set: { "a", "b", "c", "d", "e" } [A-Z] describes the set of all one-character,

		alphabetic, capitalized, strings. {"A", "B", "C", ... , "Z"}
{n,m}	Quantifier expression. Meaning: "Between n and m occurrences of whatever sub-expression or character precedes."	(abc){1,2} describes the set: {"abc", "abcabc"}
^	The beginning of a string.	^a.* matches all strings that begin with an a.
\$	The end of a string.	.*a\$ matches all strings that end with an a.
\	Precedes a special character to take away any special meaning.	[\\$!-+*] represents the set: {"\\", "\$", "-", "+", "*"}

A string and regular expression **match** if the string is an element of the set described by the regular expression.

Usage

In Rapise, you must prepend regular expressions with the string "**regex:**". So the regular expression describing all strings would be: **regex:.***

There are three uses for regular expressions in Rapise: (1) in [Object Locators](#), (2) in [action overriding code](#), (3) in [Custom Libraries](#).

2.4.4.7 Assert Statements

Purpose

An **assert statement** is a special Boolean condition that represents an assumption about program state at a particular point in test execution. When an assert is encountered, the condition is evaluated. A value of **False** indicates a program error. In some languages, execution will halt if an assertion evaluates to **False**. In Rapise, the result is logged to the report with failed status, and execution continues.

Create a Checkpoint

To create a [checkpoint](#) using an assertion, you will have to manually alter the test script (another way is to use the [Verify Object Properties](#) dialog during [Recording](#)):

1. **Select a location** in your script and a subset of application state to check.
2. **Query for the application state**. For images, use the **ImageWrapper** class provided with Rapise. For object properties, Get<.> methods. For example:

```
var xx = SeS(?OkButton?).GetX(); // X position of the object
```

3. **Save the state**. If you are creating an image checkpoint, you will want to save the image to a file.

If you are looking at text data, you could use a database, spreadsheet or text file. The **SeSSpreadSheet** class gives you access to excel spreadsheets.

4. **Compare**. Use the **ImageWrapper** class to compare images; use Spreadsheet to read and compare spreadsheet data.
5. **Write an Assert Statement**. Make an appropriate call to **Tester.Assert** method. Besides a Boolean condition, pass additional data to be placed in the [Report](#).

Read about `Tester.Assert` syntax in the Rapise Objects documentation part.

See Also

- The [test samples](#) include a **UsingImageCheckpoint.sstest**
- [Verifying Object Properties](#)
- [Writing to the Report](#)

2.4.4.8 Data Driven Testing

Purpose

Data Driven Testing is an automated testing technique in which test case data is separated from test case logic. Each set of test case data consists of input values and a set of expected output values. The actual output values are compared to the expected output values to determine whether the test passed.

You can perform data-driven testing either using an MS-Excel spreadsheet as the datasource or a relational database.

Using an MS-Excel Spreadsheet

The `spreadsheet` object is useful for implementing data-driven tests. It allows you to connect to, query, and read an excel spreadsheet from your test script. To create a data-driven test, you will:

1. **Record a test**. The exact inputs you use for the recording will not matter as much as your interactions with the objects. The following excerpt was recorded using www.google.com:

```
function Test()  
{  
    //Set Text Inflectra in q  
    SeS('Obj1').DoSetText("Inflectra");  
    //Click on btnG  
    SeS('Obj2').DoClick();  
}
```

The actions recorded were: (1) Type **Inflectra** into the search box. (2) Press the **Google Search** button.

2. **Parameterize the Test() function**. The **Test()** function has all of the procedural logic for the test. Replace input values with variables. Encapsulate the logic in a nested function with one parameter for each variable you created. As an example, we will parameterize the `Test()` function we created in step one:

```
function Test()  
{  
    function Logic(searchterm){ //our new function encapsulates the test logic  
        //Set Text using searchterm
```

```
SeS('Obj1').DoSetText(searchterm) //here we changed a hard-coded value
into a variable
//Click on btnG
SeS('Obj2').DoClick()
}
Logic("Inflectra") //don't forget to call your new function
}
```

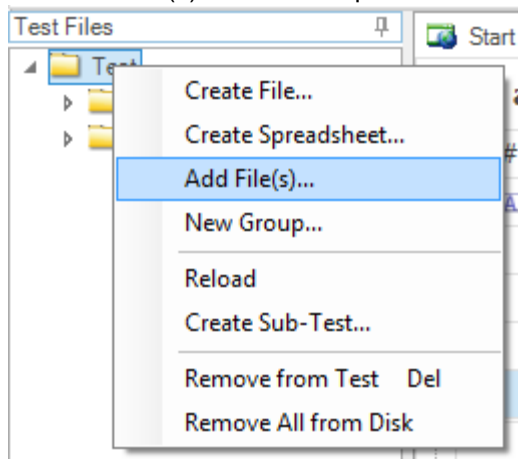
3. **Create the test case data.** In an excel spreadsheet, create a column for every variable in step two. Add columns for any expected output values you wish to verify. Each row is a test case.

In our google example, we only have one input value (`searchterm`) and we're not comparing any expected output values, so we will only need one column in our spreadsheet. Save the spreadsheet in the test folder as `searchterms.xls`:

	A
1	SpiraTest
2	SpiraPlan
3	SpiraTeam
4	Rapise
5	Remotelaunch

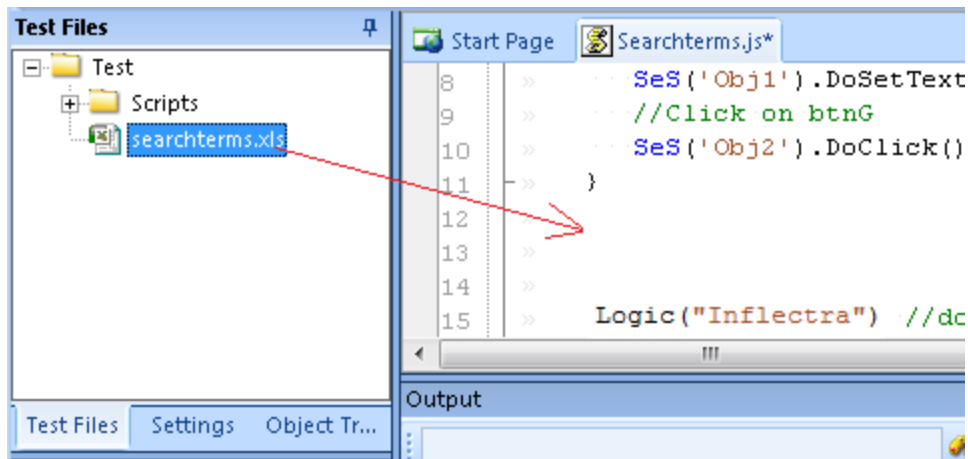
4. **Add spreadsheet to the test**

Use "Add File(s)..." to add a spreadsheet to the test files:



5. **Attach Spreadsheet object to searchterms.xls**

Drag the 'searchterms.xls' from files tree into appropriate place in your test source:



6. Use Spreadsheet to access the test case data.

In our example, we use a `spreadsheet` object and run the test logic once for every row.

```
function Test()
{
    function Logic(searchterm){
        //Set Text searchterm in q
        SeS('Obj1').DoSetText(searchterm)
        //Click on btnG
        SeS('Obj2').DoClick()
    }

    Spreadsheet.DoAttach('searchterms.xls', 'Sheet1');

    // Go through all rows
    while(Spreadsheet.DoSequential())
    {
        // Read cell value from column 0
        var term = Spreadsheet.GetCell(0);
        // Pass it into Logic function
        Logic(term);
    }
}
```

Using a Relational Database

Rapise comes with the Database query global object that allows you to send SQL queries to a database and then iterate through the results. The process for creating such a data-driven test is as follows:

1. **Record a test.** The exact inputs you use for the recording will not matter as much as your interactions with the objects. The following excerpt was recorded using www.google.com:

```
function Test()
{
    //Set Text Inflectra in q
    SeS('Obj1').DoSetText("Inflectra");
    //Click on btnG
    SeS('Obj2').DoClick();
}
```

```
}

```

The actions recorded were: (1) Type **Inflectra** into the search box. (2) Press the **Google Search** button.

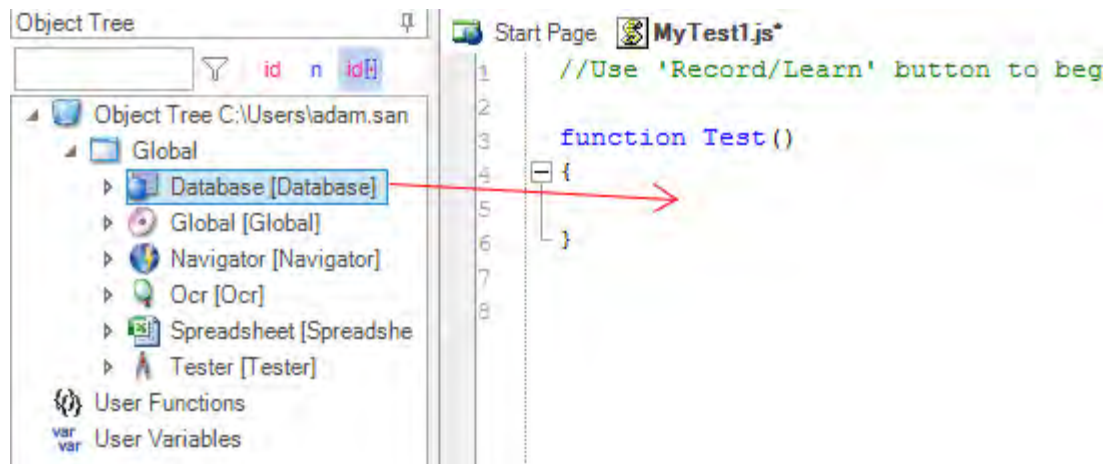
2. **Parameterize the Test() function.** The **Test()** function has all of the procedural logic for the test. Replace input values with variables. Encapsulate the logic in a nested function with one parameter for each variable you created. As an example, we will parameterize the **Test()** function we created in step one:

```
function Test()
{
    function Logic(searchterm){ //our new function encapsulates the test logic
        //Set Text using searchterm
        SeS('Obj1').DoSetText(searchterm) //here we changed a hard-coded value
into a variable
        //Click on btnG
        SeS('Obj2').DoClick()
    }
    Logic("Inflectra") //don't forget to call your new function
}

```

3. **Use Database to connect the test case data..** This assumes that you already have an **ODBC** or **OLE DB** compatible relational database that contains the necessary test data.

You drag the 'Database' global object into the script editor:



and then use:

- **Database.DoAttach()** - to make the database connection and specify the SQL query
- **Database.GetRowCount()** - to verify that there is data
- **Database.DoSequential()** - to loop through the dataset row by row
- **Database.GetValue()** - to get that row's data

Here is an example of the code needed to loop through a list of records (taken from the SpiraTest database as an example) and call our **Logic()** parameterized function with the appropriate test data:

```
var success = Database.DoAttach('Provider=SQLOLEDB.1;Integrated
Security=SSPI;Persist Security Info=False;Initial
Catalog=SpiraTest;Data Source=.', 'SELECT * FROM TST_PROJECT ');
Tester.Assert('Successfully Connected', success);
var count = Database.GetRowCount();
Tester.Message(count);

```

```
//Loop through the rows
while( Database.DoSequential() )
{
    var projectId = Database.GetValue( "PROJECT_ID" );
    var name = Database.GetValue( "NAME" );
    var description = Database.GetValue( "DESCRIPTION" );
    Logic(name);
}
```

2.4.4.9 Customizable Engine

Purpose

The source for most of the Rapise implementation is available for you to read and modify. You may find it useful to look at if you decide to create a [library](#) customized for your application.

Usage

Unless you specified otherwise, Rapise will be installed at
C:\Program Files\Inflectra\Rapise

The source code is in the **Engine** directory. You'll find the [recording/learning](#) libraries in **Engine\Lib**. The core logic is in four files: **SeSAction.js**; **SeSBehavior.js**; **SeSCommon.js**; **SeSConfig.js**.

If you plan to make changes to the Rapise Engine, we recommend you use a version control system capable of reconciling code conflicts, as we do not support user customizations. However, let us know if you feel that your customizations are generally useful; if we decide to integrate them into Rapise, we will support them.

See Also

- [Custom Libraries](#)
- [Scripting](#)

2.4.4.10 Scenarios

Purpose

Scenarios are a way to create reusable building blocks that can be incorporated into your test scripts. These scenarios can be either included as part of a purely automated test script, or they can be included into a predominantly [manual test script](#).

Usage in Automated Tests

When you create a new test in Rapise it will contain a MyTest.js file that contains the main test code and a MyTest.user.js file that contains any user-defined functions (called Scenarios). For example in the following test:

```
function Test()
{
    Login();
}
```

```
        CreateBook(g_book_name, g_book_author, g_book_genre);
        Logout();
    }
```

The test function calls three **scenarios** that comprise the main test.

The scenarios themselves are JavaScript functions:

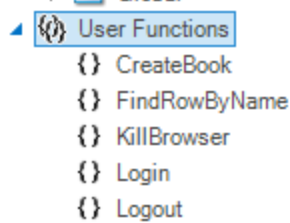
```
function Login()
{
    //Click on Log In
    //SeS('Log_In').DoClick();
    //Set Text librarian in Username:
    SeS('Username_').DoSetText("librarian");
    //Set Text librarian in Password:
    SeS('Password_').DoSetText("librarian");
    //Click on ctl00$MainContent$LoginUser$LoginButton
    SeS('ctl00$MainContent$LoginUser$Logi').DoClick();
}

function Logout()
{
    //Click on Log Out
    SeS('Log_Out').DoClick();
}

function CreateBook(name, author, genre)
{
    //Click on Book Management
    SeS('Book_Management').DoClick();
    //Click on (Create new book)
    SeS('_Create_new_book_').DoClick();
    //Set Name:
    SeS('Name_').DoSetText(name);
    //Select Author:
    SeS('Author_').DoSelect(author);
    //Select Genre:
    SeS('Genre_').DoSelect(genre);
    //Click on ctl00$MainContent$btnSubmit
    SeS('ctl00$MainContent$btnSubmit').DoClick();

    //Verify that the Book is added to the grid
    //We need to xpath query the grid to see if any
    //added rows match the item added
    var tr = FindRowByName(name);
    Tester.Assert('Book was added successfully [TS:5]', tr.length != 0);
}
```

If you go to the [Object Tree](#) you will see these user functions / scenarios displayed:



You can then drag and drop those into the test script editor to include in the main test script.

Usage in Manual Tests

When you create a new test in Rapise it will contain a `MyTest.js` file that contains the main test code and a `MyTest.user.js` file that contains any user-defined functions (called Scenarios). For example you may have the following scenario defined in the `MyTest.user.js` file:

```
function Login()
{
    //Click on Log In
    //SeS('Log_In').DoClick();
    //Set Text librarian in Username:
    SeS('Username_').DoSetText("librarian");
    //Set Text librarian in Password:
    SeS('Password_').DoSetText("librarian");
    //Click on ct100$MainContent$LoginUser$LoginButton
    SeS('ct100$MainContent$LoginUser$Logi').DoClick();
}
```

You can now include that in a [manual test step](#), by simply making the test step description start with an "@" symbol to denote that it is a scenario:

```
@Login();
```

Then when the manual test is executed, that one step will be passed to the scripting engine for automated execution.

Example

If you open the **CreateNewBook** sample (located in `C:\Users\Public\Documents\Rapise\Samples\CreateNewBook`) you will see a test that has multiple scenarios.

See Also

- [Semi-Manual Testing](#)
- [Object Tree](#)

2.4.5 Javascript IDE

Purpose

The **Javascript IDE** includes an [editor](#) and a [debugger](#).

Usage

Simply [open a script](#) to view the editing features; create a [breakpoint](#) and [play](#) the script to view the [debugging features](#).

See Also

- Learn about MS Jscript [HERE](#).

2.4.5.1 Internal Debugger

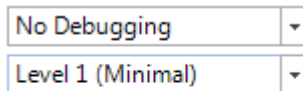
Purpose

The Internal Debugger provides [Persistent Breakpoints](#), [Control Execution](#), a [Watch View](#), a [Variable/Call Stack View](#), and [Tooltips](#).

Usage

To use the internal debugger, you must first install [Microsoft Script Debugger](#) .

You can choose the Internal Debugger on the Rapise Ribbon (**Test** tab > **Debugging** menu).



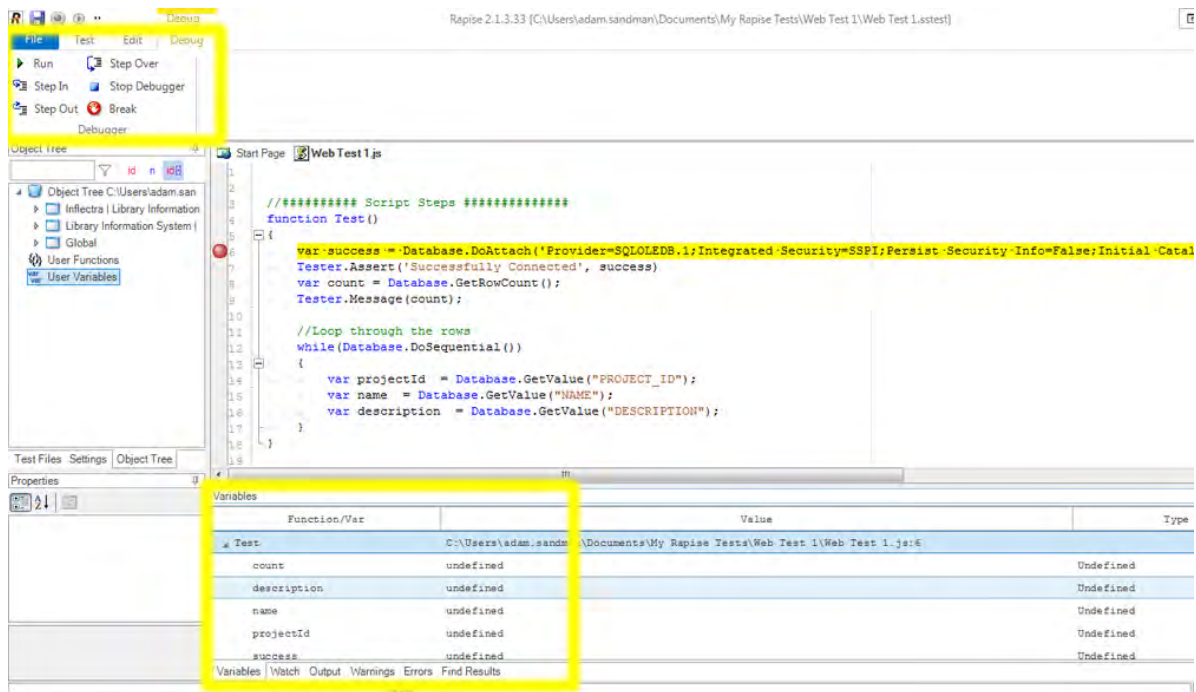
Debugging

The top drop-down menu has four options. Choose the **Run with Internal Debugger** option.

When you [Playback](#) your test script with a breakpoint, the debugging related menus and views will appear:

- The [Debugging](#) tab of the Ribbon
- The [Watch View](#) and [Variable/Call Stack View](#)

The following screenshot shows the placement of Debugging related functionality in Rapise:



In the screenshot above, you can see the [Debugger](#) buttons available in the ribbon at the top of the screen as well as the [Variables](#) and [Watch](#) sections in the lower pane.

See Also

- You can use the [External Debugger](#) to debug your scripts as well.

2.4.5.1.1 Tooltips

Purpose

Tooltips let you view a variable's value during debugging.

Usage

1. Put a breakpoint in the script at or near where you wish to investigate
2. Mouse over variables as you advance through the script. A small box will popup, displaying the variables' values:

```
var y=x;
...
x = 13
```

See Also

- [Breakpoints](#)
- [Internal Debugger](#)

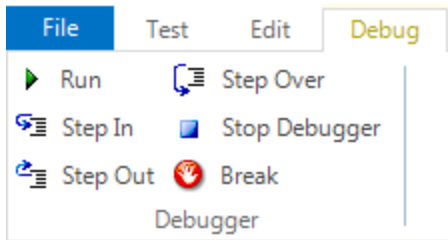
2.4.5.1.2 Control Execution

Purpose

Control Execution allows you to manually direct the execution of the script.

Usage

1. Set a [Breakpoint](#) where you want to take control of the execution
2. Use the buttons on the **Debugger** tab of the Ribbon to step through the script.



See Also

- [Ribbon: Debugger](#)

2.4.5.1.3 Breakpoints

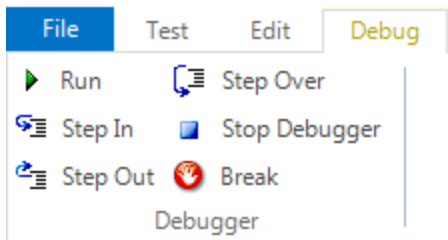
Purpose

Breakpoints stop execution of the test at a specific line in the script. They allow you to investigate program state, and trace execution flow.

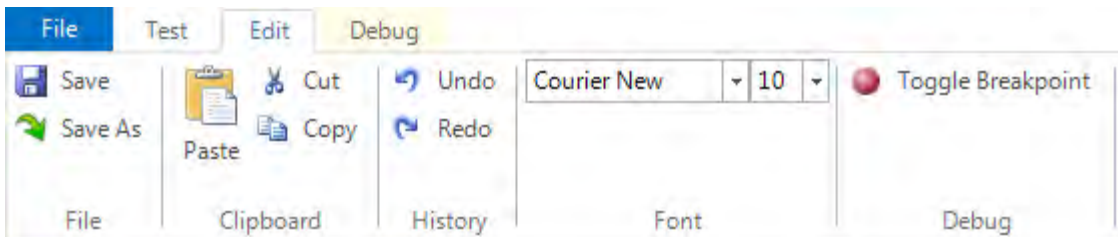
Usage

To set a **Breakpoint**:

1. Open the script you would like to debug in the [Source Editor](#).
2. Place the cursor at the line where you want a breakpoint.
3. Press **F9** or the **Break** button on the Ribbon (**Debugger** tab).



4. If the Debugger tab is not visible, you can also use the **Toggle Breakpoint** option in the **Edit** tab:



See Also

- [Ribbon: Debugger](#)
- [Control Execution](#)

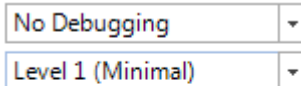
2.4.5.2 External Debugger

Purpose

When you enable the **External Debugger**, the **Microsoft Script Debugger** is used to debug your script. Rapise provides an [Internal Debugger](#) as well.

Usage

You can enable the External Debugger on the Rapise Ribbon (**Test** tab > **Debugging** menu).



The image shows two dropdown menus from the 'Debugging' ribbon. The first dropdown menu is currently set to 'No Debugging'. The second dropdown menu is currently set to 'Level 1 (Minimal)'.

Debugging

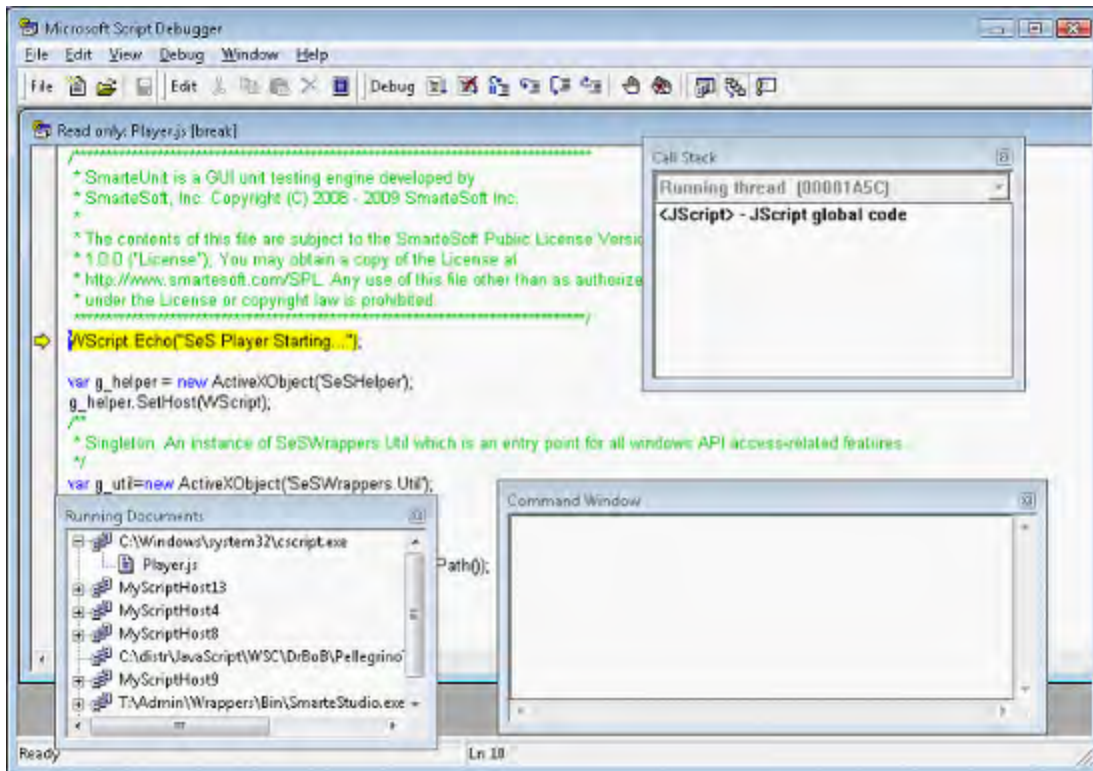
The top drop-down menu has four options:

- **No Debugging**
- **Run with Internal Debugger**: See [Internal Debugger](#) for more info.
- **Run with External Debugger**: Open the Microsoft Debugger to run the script.
- **Run External Debugger on Error**: Open the Microsoft Debugger only if an error occurs.

When you choose the **Run with External Debugger** option, Microsoft Script Debugger will open as soon as you begin [Playback](#) of your script. The debugger will pause on the line

```
WScript.Echo("SeS Player Starting...")
```

and display an error message. There is no actual error; you can begin debugging. Note, however, that Rapise is mostly written in javascript, and the Debugger will step through Rapise implementation as well as your test script.



See Also

- [Internal Debugger](#)
- For instructions on using the Microsoft Script Debugger, try this link: <http://msdn.microsoft.com/en-us/library/ms532989.aspx>

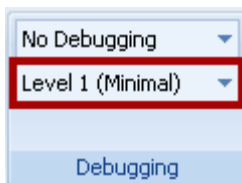
2.4.5.3 Verbosity Levels

Purpose

The **Verbosity Level** affects the amount of information written to the [Output View](#).

Usage

The Verbosity Level is set on the Ribbon (**Test** tab > **Debugging** menu). See below:



See Also

- [Ribbon: Test Tab](#)

2.4.5.4 Syntax Highlighting

Purpose

With **Syntax Highlighting**, words in a program are displayed so as to immediately indicate their function. Reserved words, variables, literals, and comments may be differentiated by color, boldness, underline etc. Syntax Highlighting makes programs easier to read and modify.

Usage

Every javascript file opened in Rapise will display with **Syntax Highlighting**:

```
##### Script Steps #####
function Test()
{
  > var success = Database.DoAttach('Provider=SQLOLEDB.1;Integrated Security=SS
  > Tester.Assert('Successfully Connected', success)
  > var count = Database.GetRowCount();
  > Tester.Message(count);

  > //Loop through the rows
  > while(Database.DoSequential())
  > {
  >   > var projectId = Database.GetValue("PROJECT_ID");
  >   > var name = Database.GetValue("NAME");
  >   > var description = Database.GetValue("DESCRIPTION");
  > }
}
```

See Also

- [Source Editor](#)

2.4.5.5 Code Folding

Purpose

Code Folding allows you to hide or show blocks of code. These blocks have syntactic meaning, such as a function body, a class declaration, a loop, or a comment.

Usage

Every javascript file opened in Rapise will display with **hide** and **show** buttons to the top left of their corresponding block. In the following screenshot, hide buttons are highlighted with green boxes; show buttons are highlighted with purple boxes:

```

>> function EnterNumber (num) :
>> {
>>   >> for (var i = 0; i < num.length; i++)
>>   {
>>     >> digit = num.charAt(i);
>>     >> SeS('Button' + digit).DoAction();
>>   }
>> }
>>
>> function Operation(op)
>> { ... }
>>
>> function trim(str, charlist)
>> { ... }
>>

```

See Also

- [Source Editor](#)

2.4.5.6 Syntax Checking

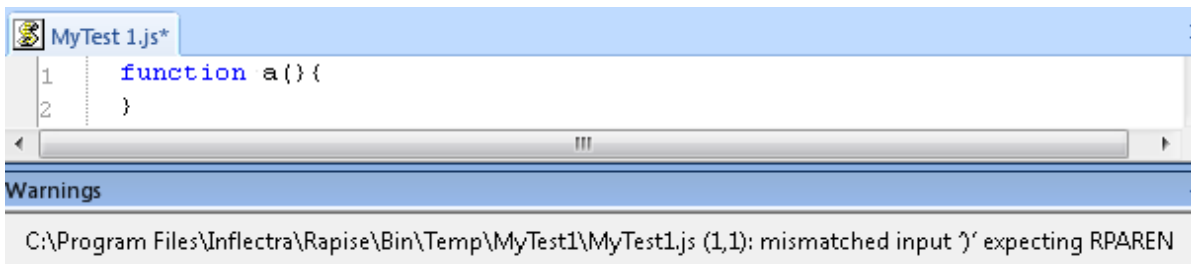
Purpose

An editor performs **Syntax Checking** if it notifies the user of syntax errors in their program/script.

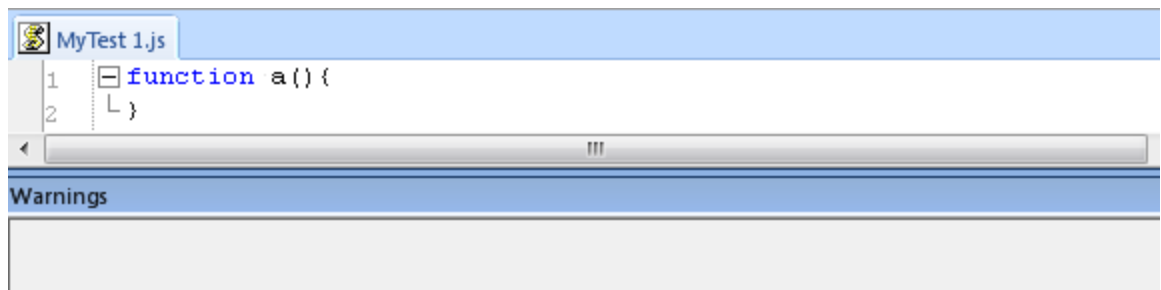
Usage

Rapise performs **Syntax Checking** as you type into the [Source Editor](#). Messages regarding syntax errors can be found in the [Warning View](#).

For example, you begin writing a function:



We have a typo here. We used ?? instead of ?)?. Once the error is corrected, the warning view clears automatically:



See Also

- [Source Editor](#)

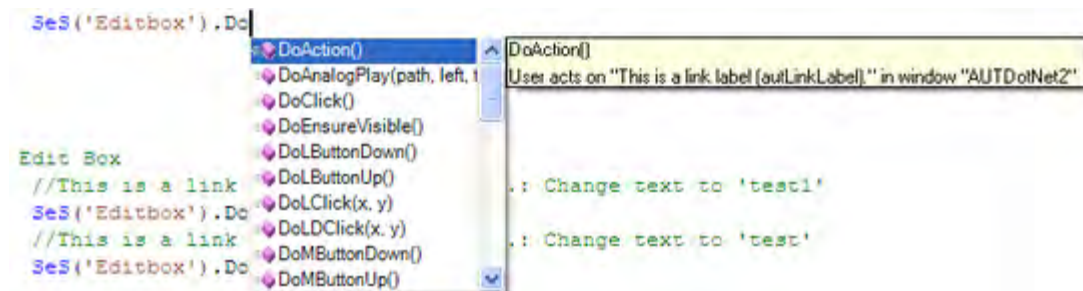
2.4.5.7 Code Completion

Purpose

Rapise provides **Code Completion** for class, method and field names.

Usage

Begin typing a class, method, or field name. Press **CTRL+space** to open a list of possible completions.



Advanced

Rapise has built-in code completion logic that lets it suggest the available list of functions for a specific object. However since JavaScript is fundamentally an un-typed language, for the code completion to work, there are some tips and tricks that you can use.

One may define a variable as simple as:

```
var p;
```

In this example p is just a variable with undefined type. It may be used as number, string or object. So Rapise has no idea of how to deal with it. So if you type a dot after "p." no code-completion window appears.

Rapise scans for variable definitions when one saves the .js source file. So if anything goes wrong then first thing is to save the file.

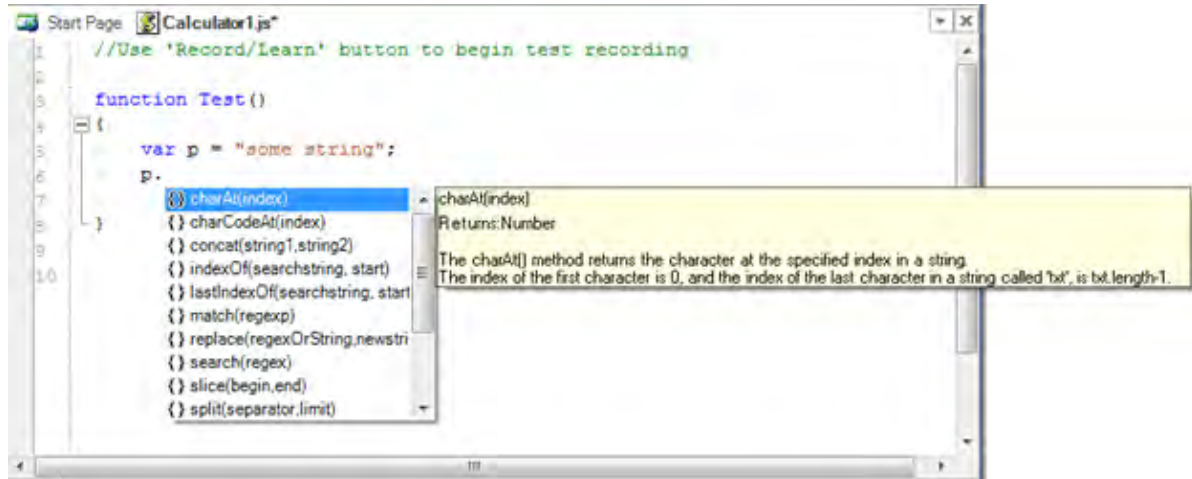
There are several ways of giving Rapise a "hint" about the variable type:

Static Assignment

First, is static assignment. Suppose you specify some constant value when defining a variable:

```
var p="some string";
```

In this case Rapise knows the type of p. So it would assist you when you type a dot "." after p:



Using Comments to Suggest the Type

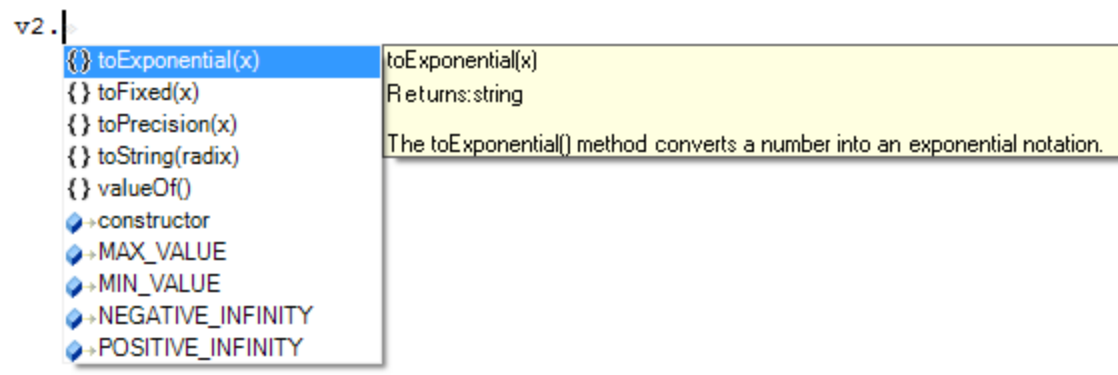
In some cases variable type is not clear from its definition or assignments is not static:

```
var v1 = input;
var v2;
```

To deal with such cases the code should be instrumented. For example, if we know that input is string and v2 will be used as number then we may explain it to Rapise by placing variable type using special comment: `/**<var_type*/` right together with var definition. It should be placed right either between var keyword and variable name or right after an assignment operation (=), if any. I.e.:

```
var v1 = /**string*/input;
var /**number*/v2;
```

So now Rapise will be able to display the list of available methods and properties:



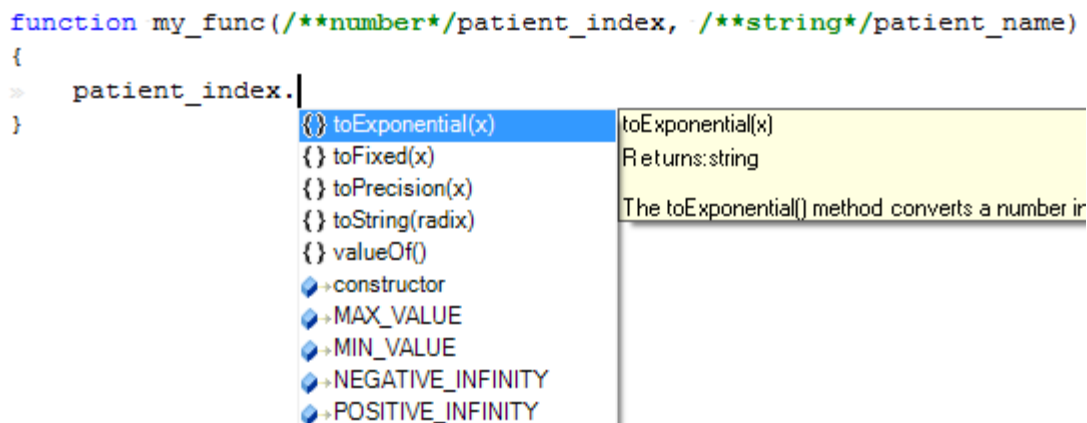
Another common case is a function parameter. If you have function that is defined:

```
function my_func(patient_index, patient_name)
{
}
```

The type of parameters `patient_index` and `patient_name` are not known, but may be explained in a similar way:

```
function my_func(**number*/patient_index, /**string*/patient_name)
```

So it becomes known to Rapise:



Code completion for variable names is useful when you have multiple variables or function parameters and need to type them quickly. In this case `Alt+Space` keyword combination will bring up a list of variables and functions starting with just typed keyword.

See Also

- [Source Editor](#)

2.4.6 Unit Testing

Purpose

Unit Testing involves testing individual units of a piece of software to make sure they act as intended. The units tested are usually functions or class methods.

Usage

There are five ways that Rapise can help you Unit Test:

1. Rapise methods support testing objects and methods in [DLLs](#).
2. Rapise can test **ActiveX** objects and their methods through their [COM Interface](#).
3. If you choose to write your Unit tests in a third-party tool, Rapise has a [Command Line](#) interface where you can access its functionality.
4. Test results are written to a [TAP](#) file, which allows integration with Unit Testing frameworks.
5. Rapise tests can be invoked from [MbUnit](#) and [NUnit](#) tests.

2.4.6.1 DLL Testing

Purpose

You can create objects and invoke methods from both managed and unmanaged dlls.

Usage

Rapise provides API calls to work with managed DLLs. The Windows object **WScript** can be used with unmanaged DLLs.

Managed DLLs

- **Util.InvokeMember**: Invoke a class method in a managed DLL.
- **Util.CreateClassInstance**: Creates an instance of a class in a managed DLL.
- **Util.SetFieldValue**: Sets a field value in an object created with CreateClassInstance.

Unmanaged DLLs

- **WScript.CreateObject("DynamicWrapper")**: Create a DynamicWrapper object. The **Register** and **ShellExecute** methods of the DynamicWrapper object can be used to invoke DLL methods as in the following example:

```
var UserWrap = WScript.CreateObject("DynamicWrapper");
UserWrap.Register("shell32.dll", "ShellExecute", "I=hssssl", "f=s", "r=1");
UserWrap.Register("USER32.DLL", "MessageBoxA", "I=HsSu", "f=s", "R=1");
UserWrap.MessageBoxA( null, "" + elapsed, "Time Elapsed:", 0x30 );
```

Test Samples

There is a **Samples** folder in your Rapise directory. There are two [test samples](#) that illustrate working with DLLs:

- UsingDLLHandlerManaged
- UsingDLLHandlerUnManaged

See Also

- For more information on the WScript object, see: [http://msdn.microsoft.com/en-us/library/at5ydy31\(VS.85\).aspx](http://msdn.microsoft.com/en-us/library/at5ydy31(VS.85).aspx)

2.4.6.2 COM Testing Support

Purpose

Microsoft's **Component Object Model** (COM) is a standard for communication between separately engineered software components ([source](#)). Any object with a COM interface can be created and used remotely.

Usage

Creating a COM Object

You can create a COM object using Windows' **ActiveXObject** class. Once the object is created, method invocation is the same as with any other object in your program. The methods available will depend on the object's COM interface. The following example shows how to create an instance of the Word application and open a file.

```
var doc = new ActiveXObject("Word.Application");  
doc.Documents.Open(wordFileName);
```

Test Samples

There are several [test samples](#) that show how to Unit Test application modules via COM interface:

- UsingMSWord
- UsingMSExcel
- UsingMSAccess

See Also

- Learn more about COM [HERE](#).
- Learn more about ActiveXObject [HERE](#).

2.4.6.3 Integration with Third Party Tools

2.4.6.3.1 Custom Strings

Purpose

Custom Strings allow you to associate meta data with your test. Each custom string has a **name** and a **value**. The value can be retrieved using the name.

Usage

Adding a Custom String

1. Open the **NameValue Collection Editor** dialog. Instructions are [HERE](#).
2. Press the **Add** button.
3. Fill in a **name** and **value** for the custom string.
4. Press **OK**. The dialog will close.

Retrieving a Custom String value

Use the `GetCustomString()` method to retrieve a custom string's value. See the example below:

```
var factory = new ActiveXObject("Rapise.Test.Test");
var test =
factory.LoadFromFile( Global.GetFullPath("UsingCustomStrings.sstest"));
var BugID = test.GetCustomString("BugID");
var TestID = test.GetCustomString("TestID");
```

See Also

- [NameValue Collection Editor Dialog](#)
- There is a [sample test](#) called `UsingCustomStrings`.

2.4.6.3.2 MbUnit

Purpose

SeSMbUnit.vsi is a visual studio installer packaged with Rapise. It facilitates calling Rapise tests from MbUnit tests.

Usage

Installation

- You will need **Visual Studio**, **MbUnit 3**, and **Gallio** to use SeSMbUnit. MbUnit is bundled with Gallio, which is available at www.gallio.org.
- To install SeSMbUnit, open the following directory:
C:\Program Files\Inflectra\Rapise\Extensions\UnitTesting\MBUnit\SeSMbUnit
- Double-click SeSMbUnit.vsi. The **Visual Studio Content Installer** will appear. Select the components for the language you will use and then click **Next**.

Syntax

Use both the `MbUnit.Framework` and the `SeSMbUnit` namespaces:

```
using MbUnit.Framework;
using SeSMbUnit;
```

MbUnit uses the class attribute `[Test]` to identify test methods. The corresponding attribute for SeSMbUnit is `[SeSMbUnitTest(@"<path to .sstest>")]`. Note that the SeSMbUnitTest attribute has a parameter, the file-path to the test that will be invoked.

The following example uses a test method simply as a wrapper for calling an `.sstest`:

```
[SeSMbUnitTest(@"T:\Samples\Cross Browser\CrossBrowser.sstest")]
public void TestIEandFirefox()
{
    int exitCode = SeSMbUnitHelper.TestExecute();
    Assert.AreEqual(0, exitCode);
}
```

Templates

SeSMbUnit.vsi will install a template for Visual Studio called `SeSMbUnitTests`. The template includes the appropriate `using` statements and a blank test method. You can insert additional

SeSmbUnitTest methods by right-clicking in the editor in Visual Studio, and selecting **Insert Snippet > SeSmbUnitTest**. The following code will be added:

```
[SeSmbUnitTest(/*Insert path to .sstest file which must be run.*/)]
public void TestSeS()
{
    int exitCode = SeSmbUnitHelper.TestExecute();
    Assert.AreEqual(0, exitCode);
}
```

You'll need to specify the file-path.

Samples

There is a sample dll you can run in MbUnit. From the Rapise directory, you'll find it at: *Extensions\UnitTesting\MbUnit\SeSmbUnit\SeSSamples\MbUnit\bin\Debug\SeSSamples\MbUnit.dll*

See Also

- MbUnit and related documentation can be found at www.mbunit.com

2.4.6.3.3 NUnit

Purpose

SeSNUnit.vsi is a visual studio installer packaged with Rapise. It facilitates calling Rapise tests from NUnit tests.

Usage

Installation

- You will need **Visual Studio** and **NUnit** to use SeSNUnit. NUnit is available at <http://www.nunit.org/index.php?p=download>.
- To install SeSNUnit, open the following directory:
C:\Program Files\Inflectra\Rapise\Extensions\UnitTesting\NUnit\SeSNUnit
- Double-click SeSNUnit.vsi. The **Visual Studio Content Installer** will appear. Select the components for the language you will use and then click **Next**.

Syntax

Use both the **NUnit.Framework** and the **SeSNUnit** namespaces:

```
using NUnit.Framework;
using SeSNUnit;
```

NUnit uses the class attribute [**Test**] to identify test methods. The corresponding attribute for SeSNUnit is [**SeSNUnitTest**("<path to .sstest>")]. Note that the SeSNUnitTest attribute has a parameter, the file-path to the test that will be invoked.

The following example uses a test method simply as a wrapper for calling an **.sstest**:

```
[SeSUnitTest(@"T:\Samples\Cross Browser\CrossBrowser.sstest" )]  
public void TestIEandFirefox()  
{  
    int exitCode = SeSUnitTestHelper.TestExecute();  
    Assert.AreEqual(0, exitCode);  
}
```

Templates

SeSUnitTest.vsi will install a template for Visual Studio called **SeSUnitTests**. The template includes the appropriate **using** statements and a blank test method. You can insert additional **SeSUnitTest** methods by right-clicking in the editor in Visual Studio, and selecting **Insert Snippet > SeSUnitTest**.

The following code will be added:

```
[SeSUnitTest(/*Insert path to .sstest file which must be run.*/)]  
public void TestSeS()  
{  
    int exitCode = SeSUnitTestHelper.TestExecute();  
    Assert.AreEqual(0, exitCode);  
}
```

You'll need to specify the file-path.

Samples

There is a sample dll you can run in NUnit. From the Rapise directory, you'll find it at: *Extensions\UnitTesting\NUnit\SeSUnitTest\SeSSamplesNUnit\bin\Debug\SeSSamplesNUnit.dll*

See Also

- NUnit and related documentation can be found at www.nunit.org

2.4.6.3.4 TAP Results

Purpose

Rapise supports the **Test Anything Protocol** (TAP). TAP specifies communication between unit tests and testing frameworks, such as [MbUnit](#) or [NUnit](#).

Usage

The results of a Rapise test are saved to a TAP file in the same directory as the test. Tap files have a **.tap** extension.

See Also

- More information about tap is available at the TAP wiki: www.testanything.org
- [MbUnit](#)
- [NUnit](#)

2.4.7 Web Service Testing

What is a Web Service?

A Web service is a unit of managed code that can be remotely invoked using HTTP, that is, it can be activated using HTTP requests. So, Web Services allows you to expose the functionality of your existing code over the network. Once it is exposed on the network, other application can use the functionality of your program.

Web Services allows different applications to talk to each other and share data and services among themselves. Other applications can also use the services of the web services. For example VB or .NET application can talk to java web services and vice versa. So, Web services is used to make the application platform and technology independent.

What types of Web Service are There?

There are two broad classes of web service:

1. **SOAP** - These web services make use of the Web Service Definition Language (WSDL) and communicate using HTTP POST requests. They are essentially a serialization of RPC object calls into XML that can then be passed to the web service. The XML passed to the SOAP web services needs to match the format specified in the WSDL. SOAP web services are fully self-describing, so most clients do not directly work with the SOAP XML language, but instead use a client-side proxy generator that creates client object representations of the web service (e.g. Java, .NET objects). The web service consumers interact with these language-specific representations of the SOAP web service.
2. **REST** - A RESTful web API (also called a RESTful web service) is a web API implemented using HTTP and REST principles. Unlike SOAP-based web services, there is no "official" standard for RESTful web APIs. This is because REST is an architectural style, unlike SOAP, which is a protocol. Typically REST web services expose their operations as a series of unique "resources" which correspond to a specific URL. Each of the standard HTTP methods (POST, GET, PUT and DELETE) then maps into the four basic CRUD (Create, Read, Update and Delete) operations on each resource. REST web services can use different data serialization methods (XML, JSON, RSS, etc.).

Why do we Test Web Services?

The purpose of **Web Service Testing** is to verify that all of the Application Programming Interfaces (APIs) exposed by your application operate as expected. In some ways they are similar to [unit tests](#) in that they test specific pieces of code rather than user interface objects.

Unlike simple unit tests however, web services tests will normally need to be developed for each of the supported versions of the API so that when a new version of a product comes out, you can regression test the latest version of the API and all previous versions. This ensures that legacy clients using the older version of the API don't need to make any changes.

Also, unlike unit tests, web services are being called across a network using the HTTP/HTTPS protocol rather than simply calling code that is resident on the same system as the test script. In that sense, they are similar to testing web sites.

Finally, in situations where you have an AJAX web application, as well as testing the front-end user interface using the appropriate UI library, you may need to test the web service that is providing the data to the user interface at the same time. In these situations you have a hybrid, web user interface and web service test.

Testing Web Services with Rapise

Rapise contains a built-in web service module that can currently test the following types of web service:

1. [REST Web Services](#) - Rapise contains a built-in [REST definition builder](#) and object library that allows you to prototype out your REST web service requests, inspect the returned HTTP headers and HTTP response body and then convert into a parameterized set of Rapise objects that can be scripted against in the main Rapise [JavaScript editor](#).
2. [SOAP Web Services](#) - *We are planning on adding SOAP web service testing functionality to Rapise in the near future.*

2.4.7.1 Testing REST Web Services

What is REST and what is a RESTful web service?

REpresentational State Transfer (REST) is a style of software architecture for distributed systems such as the World Wide Web. REST has emerged as a web API design model that offers greater simplicity over other web service protocols such as SOAP and XML-RPC.

A RESTful web API (also called a RESTful web service) is a web API implemented using HTTP and REST principles. Unlike SOAP-based web services, there is no "official" standard for RESTful web APIs. This is because REST is an architectural style, unlike SOAP, which is a protocol.

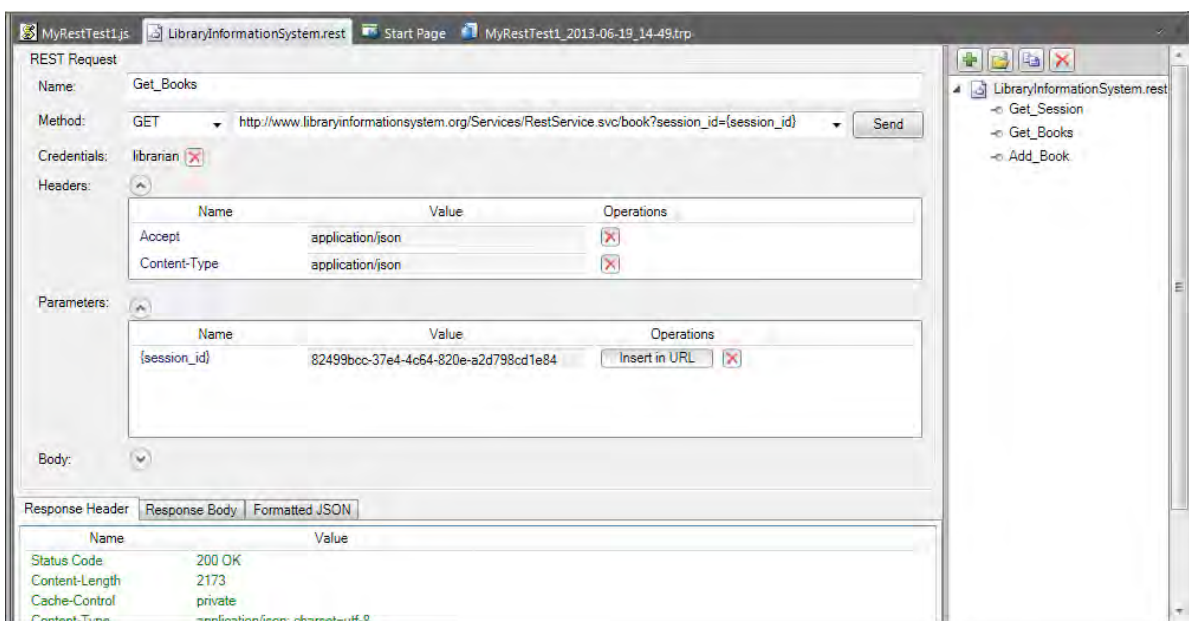
How does Rapise test REST web services?

Creating a REST web service test in Rapise consists of the following steps:

1. Using the [REST definition builder](#) to create the various REST web service requests and verify that they return the expected data in the expected format.
2. Parameterizing these REST web service requests into reusable templates and saving as Rapise learned objects.
3. Writing the [test script](#) in Javascript that uses the learned Rapise web service objects.

Rapise REST Definition Builder

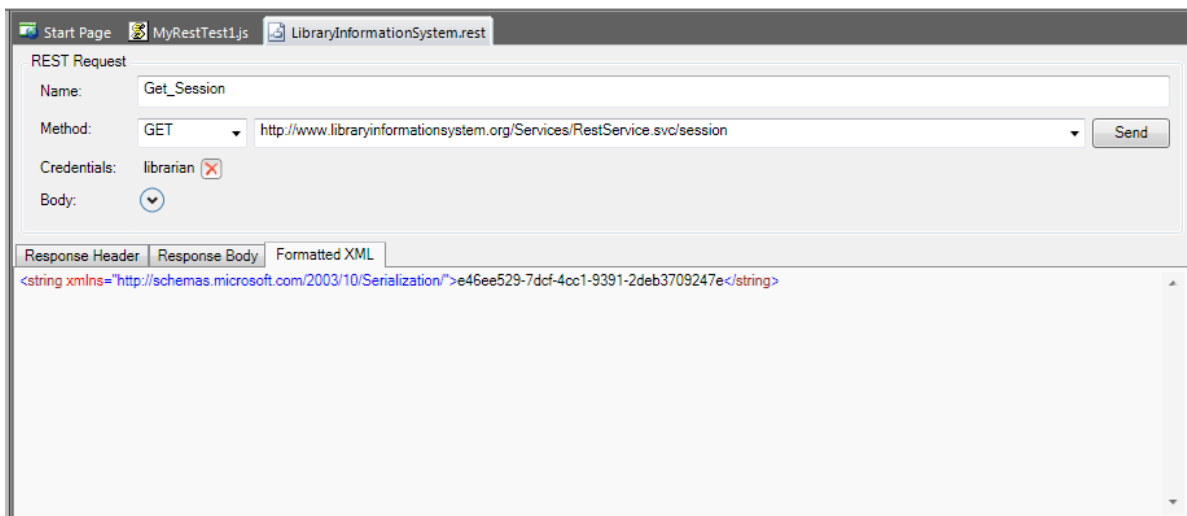
When you add a web service to your Rapise test project, you get a new REST definition file (.rest) that will store all of your prototyped requests against a specific REST web service. The various REST requests are then created in the REST definition builder:



Each REST request can then include the following items:

- **Method** - the type of HTTP request being made (GET, POST, PUT, DELETE, etc.)
- **URL** - the URL of the web service request with any parameter tokens included (e.g. {session_id} in our example above)
- **Credentials** - Any HTTP Basic Authentication Headers
- **Headers** - Any other HTTP headers (both standard and custom)
- **Parameters** - Any parameters that have been defined in the URL that will be called from the Rapise test script.
- **Body** - The body of the request (for POST and PUT requests). This can be in any text-serialized format such as XML or JSON.

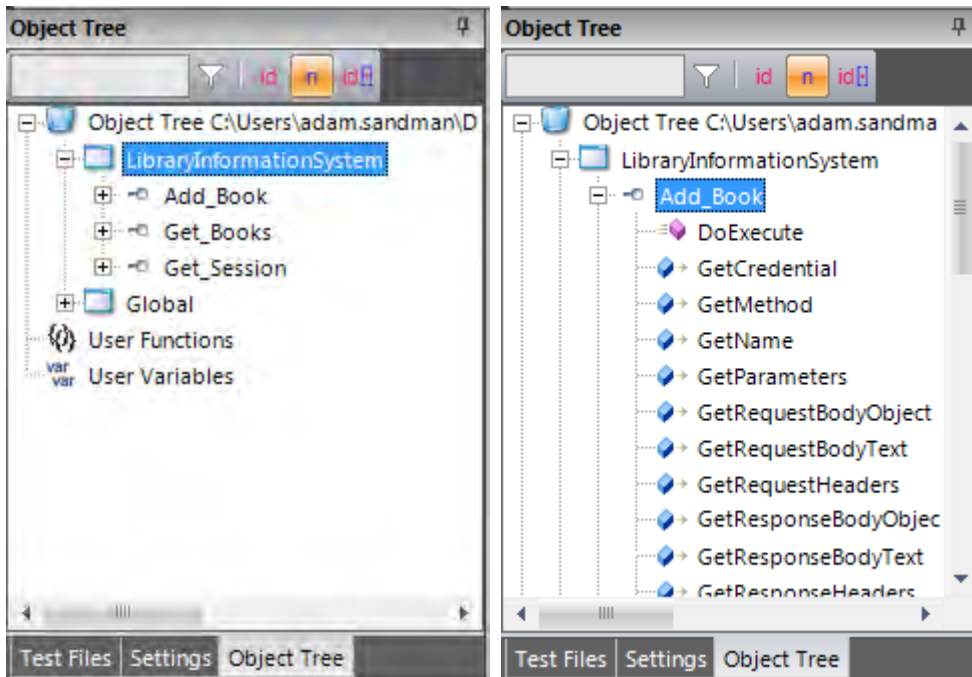
When you execute the request, it will return back the HTTP response headers and if it recognizes the MIME content-type as either XML or JSON, it will format it to make it more readable by the tester:



Once you have finished with your prototyping of the web service test operations, you can then save the request definitions and use the 'Update Object Tree' option to populate the main Rapise [Object Tree](#).

Web Service Object Recognition

Each of the REST web service requests that has been prototyped in the REST definition editor is converted by Rapise into a scriptable object:



Each of the REST service objects in the tree has operations designed to let you call the method and access the returned body either in its raw text format, or if it's a web service that returns data in JSON format, it will be able to send/receive data as native JavaScript objects.

Rapise provides you with access to the following attributes of the HTTP request before/after the request has been executed:

- **Request:**
 - Method
 - Url
 - Headers (inc. authentication)
 - Body
- **Response:**
 - Headers
 - Body

Rapise REST Test Scripts

Once all the REST operations have been defined and saved as Rapise learned objects, you can call the REST operations from within your Rapise test scripts:


```
function Test ()
{
  SeS('LibraryInformationSystem_Get_Session').DoExecute(null);
  var sessionId = SeS('LibraryInformationSystem_Get_Session').GetResponseBodyObject();
  Tester.Message(sessionId);

  SeS('LibraryInformationSystem_Get_Books').DoExecute({"session_id":sessionId});
  var books = SeS('LibraryInformationSystem_Get_Books').GetResponseBodyObject();
  Tester.AssertEqual('Book count matches', 14, books.length);

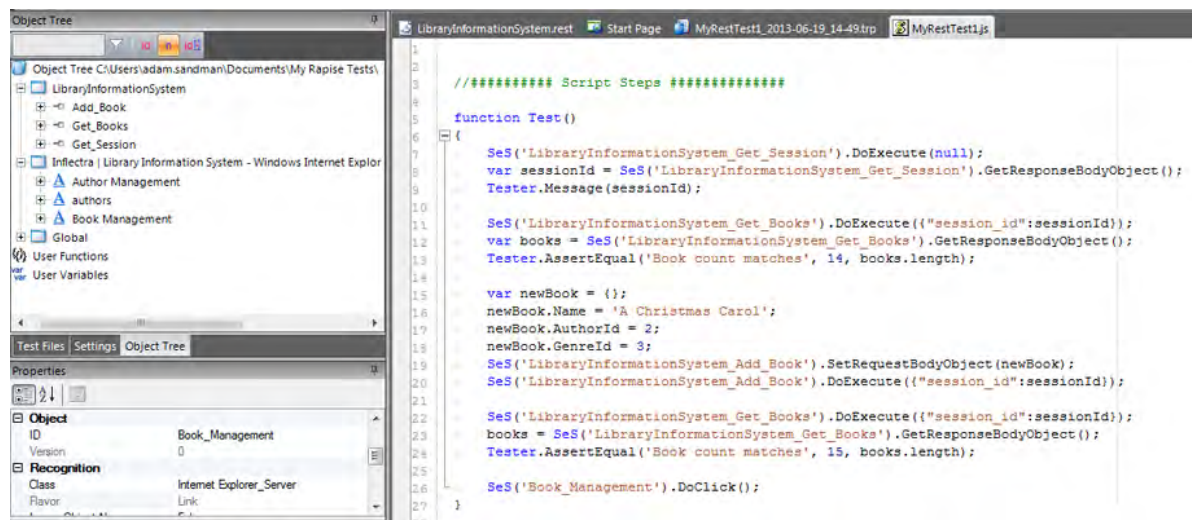
  var newBook = {};
  newBook.Name = 'A Christmas Carol';
  newBook.AuthorId = 2;
  newBook.GenreId = 3;
  SeS('LibraryInformationSystem_Add_Book').SetRequestBodyObject(newBook);
  SeS('LibraryInformationSystem_Add_Book').DoExecute({"session_id":sessionId});

  SeS('LibraryInformationSystem_Get_Books').DoExecute({"session_id":sessionId});
  books = SeS('LibraryInformationSystem_Get_Books').GetResponseBodyObject();
  Tester.AssertEqual('Book count matches', 15, books.length);
}
```

As well as simply calling the **DoExecute()** method of each REST web service object to call the previously defined operation, you can use the various properties on the REST service object to send through specific parameter values, add/remove headers, change the authenticated user, change the request body as well as inspect all of the attributes in the request and response.

This allows you unparalleled control over the web service request, with the ability to debug and diagnose web service issues in addition to being able to quickly call the learned operations.

Since the REST objects are just like any other Rapise object, you can have hybrid test scripts that call web service methods and also test GUI objects. This is very useful when you want to test how the user interface changes in response to specific web service API interactions, or when you have a user interface that connects to the sever using a web service (for example with a JSON-based AJAX web user interface).



Once you have created your REST web service test, you can use the standard [Playback](#) functionality in Rapise to execute your test and display the report:

#	Name	Start	Type	Status	Comment	Iteration
	Starting scenario: Test	14:49:03.725	Message	Info		
	Get_Session.DoExecute([null])	14:49:04.334	Assert	Pass	Returned Value: true	0
	c3d8dcd4-6125-427d-939a-0dd181b3cce1	14:49:04.334	Message	Info		0
	Get_Books.DoExecute(["session_id":"c3d8dcd4-6125-4"])	14:49:05.051	Assert	Pass	Returned Value: true	0
	Book count matches	14:49:05.051	Assert	Pass		0
	Add_Book.DoExecute(["session_id":"c3d8dcd4-6125-4"])	14:49:05.379	Assert	Pass	Returned Value: true	0
	Get_Books.DoExecute(["session_id":"c3d8dcd4-6125-4"])	14:49:05.597	Assert	Pass	Returned Value: true	0
	Book count matches	14:49:05.597	Assert	Pass		0
	MyRestTest1	14:49:05.597	Test	Pass	Passed:6 Failed:0	

Test Pass
Total:9 Pass:7 Fail:0 Info:2

2.4.7.2 Testing SOAP Web Services

This is planned future functionality for Rapise.

2.4.8 Mobile Testing

Purpose

Rapise lets you record and play automated tests against native applications on a variety of mobile devices using either [Apple iOS](#) or [Android](#). Rapise gives you the flexibility to test your applications on either real or simulated devices.

Usage

Since the process for testing mobile devices depends heavily on the platform being used, we have split the guide into two separate sections:

- [Mobile Testing using Apple iOS](#)
- [Mobile Testing using Android](#)

Examples

You can find the mobile sample tests and sample Applications (called AUTAndroid for Android and AUTiOS for Apple iOS) in your Rapise installation at the following locations:

Sample Mobile Tests:

- C:\Users\Public\Documents\Rapise\Samples\UsingMobile\AppAndroid (testing a native Android App)
- C:\Users\Public\Documents\Rapise\Samples\UsingMobile\WebAndroid (testing a Chrome web app)
- C:\Users\Public\Documents\Rapise\Samples\UsingMobile\AppiOS (testing a native iOS App)
- C:\Users\Public\Documents\Rapise\Samples\UsingMobile\WebiOS (testing a Safari web app)

Sample Applications

- C:\Users\Public\Documents\Rapise\Samples\UsingMobile\AUT\AUTAndroid (for iOS)
- C:\Users\Public\Documents\Rapise\Samples\UsingMobile\AUT\AUTiOS (for Android)

(we supply the sample applications as both a compiled binaries and an projects with appropriate source code)

See Also

- [Technologies - Mobile Testing](#), for instructions on preparing your environment for mobile testing, including instructions for installing the necessary prerequisites and configuring the various third-party components that Rapise uses to connect to the device.
- [Mobile Testing Tutorial](#) - for a simple introduction to mobile device testing.
- [Mobile Settings Dialog](#) - for information on setting up the different **mobile profiles** for the mobile devices you will be testing
- [Mobile Object Spy](#) - for information on how Rapise connects to the device and lets you view the objects in the application being tested

2.4.8.1 Apple iOS

Purpose

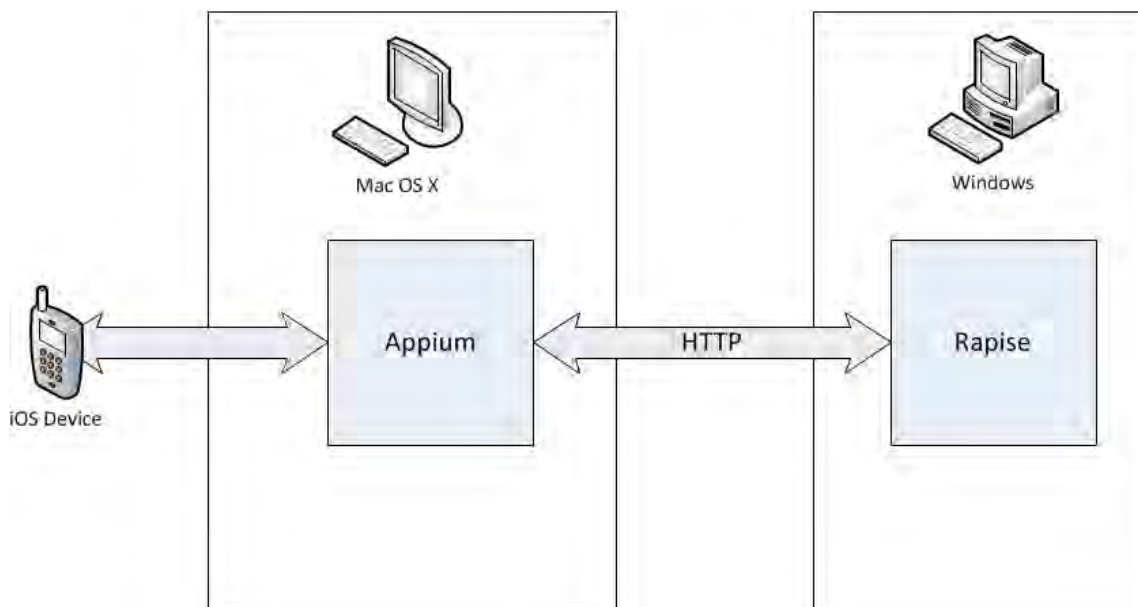
Rapise lets you record and play automated tests on real iOS devices (iPad and iPhone) as well as test applications using the iOS simulator that ships with XCode. No jailbreaking needed! With Rapise you can record on one device and playback on multiple.

Prerequisites

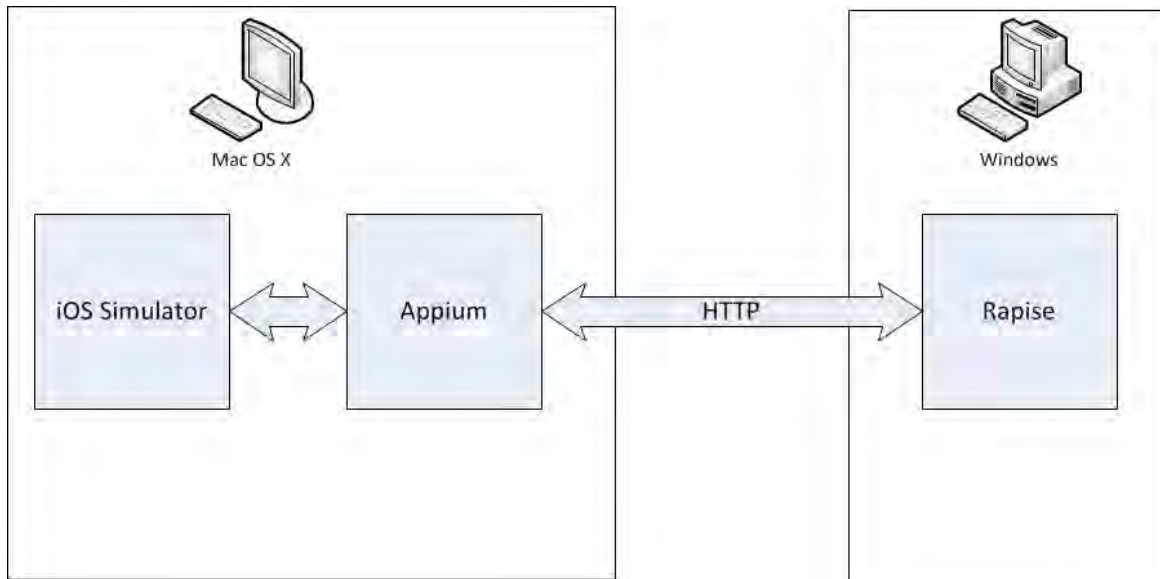
This section assumes that you have already installed and configured all of the necessary components. For details on this, please refer to the [Technologies - Mobile Testing](#) and [Mobile Testing - iOS Setup](#) sections that describes the necessary steps for both physical and simulated devices.

Since Rapise runs on Windows computers (PC) and iOS devices (both real and simulated) can only be tested on an Apple Macintosh (Mac) computer, it is necessary that you install **Appium** and **Apple Xcode** onto the Mac and connect to Appium over the network from Rapise running on your PC.

For Physical iOS devices the architecture looks like:

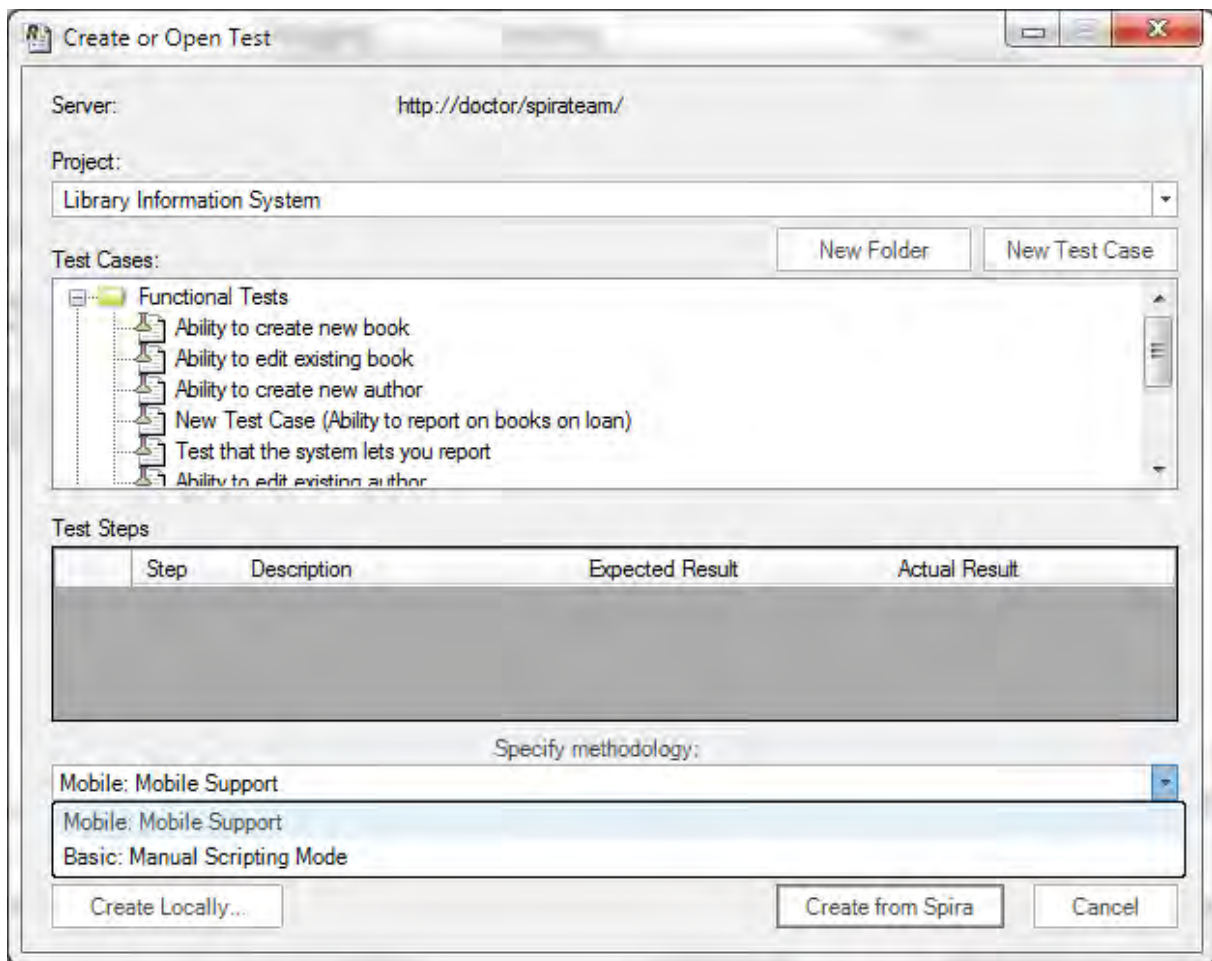


For simulated iOS devices (using the Xcode iOS Simulator) the architecture looks like:

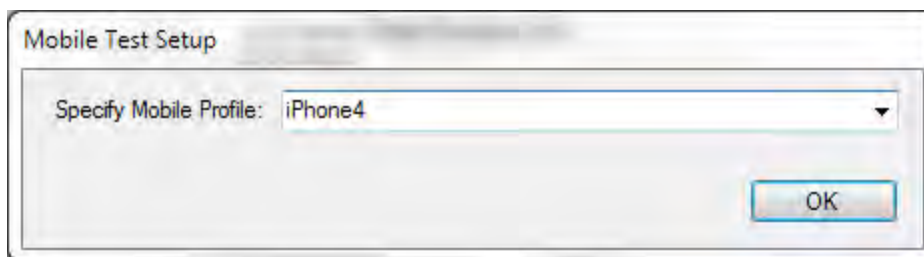


1) Configure the Mobile Profile

To begin mobile testing, when you [create the new test](#), make sure you choose the mobile methodology option "Mobile: Mobile Support":

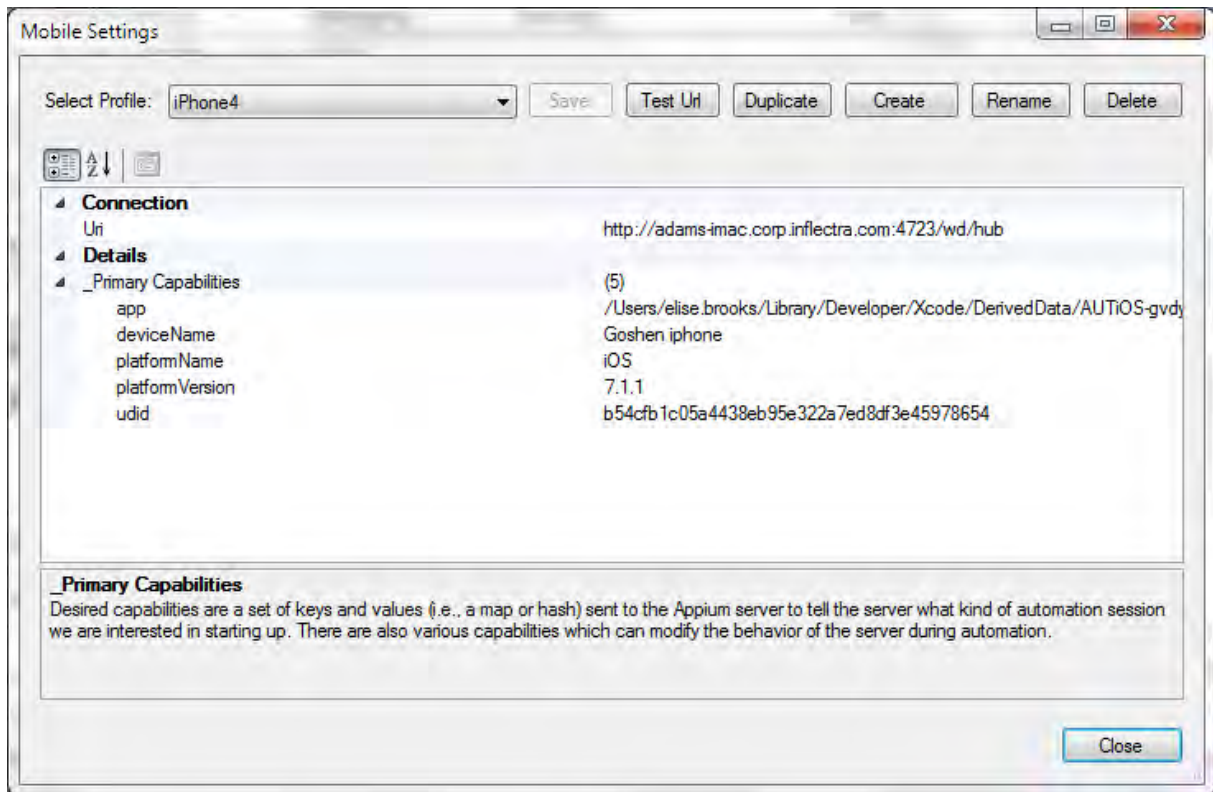


Once you have entered the name for the new test (with the mobile methodology selected) you will be asked to choose the mobile profile. Rapise ships with several default profiles, for now select the one that is closed to the device you want to test (you can always change it later):



When you click the **[OK]** button, Rapise will create a new mobile test with this profile selected.

Now you need to modify the profile so that it correctly matches the type of device you are testing and also so that it correctly points to the [Appium](#) server that you are using to host the mobile devices. Click on Options > Tools > Mobile Settings to bring up the [Mobile Settings](#) dialog box:



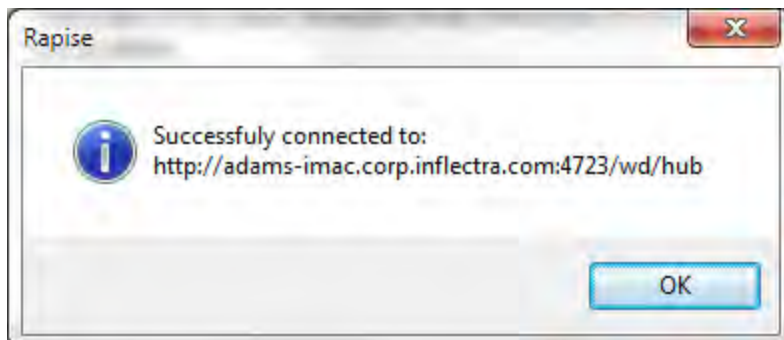
The example screenshot above is for an iPhone 4 physical device running iOS 7.1.1. For any iOS device (real or simulated) you will need to provide the following:

- **Uri** - this is the URL to your Appium server. We shall discuss this shortly
- **app** - this needs to be the path (on the Mac running Appium) to the Application being tested on the device (e.g. /Users/user.name/Library/Developer/Xcode/DerivedData/AUTiOS-gvdyymxgyzrfqdfmylapawjoyd/Build/Products/Debug-iphonesimulator/AUTiOS.app)
- **deviceName** - this needs to match the name of the device being connected
- **platformName** - this needs to be set to 'iOS'
- **platformVersion** - this needs to be set to the correct version of iOS that the device is running

In addition, for physical devices only, you need to specify:

- **udid** - The unique device identifier of the connected physical device (leave blank for simulated devices)

Once you have entered in the information and saved the profile, make sure that Appium is running on the Mac (see the [Technologies - Mobile Testing topic](#) for details) and then click the **[Test URL]** button to verify the connection with Appium:

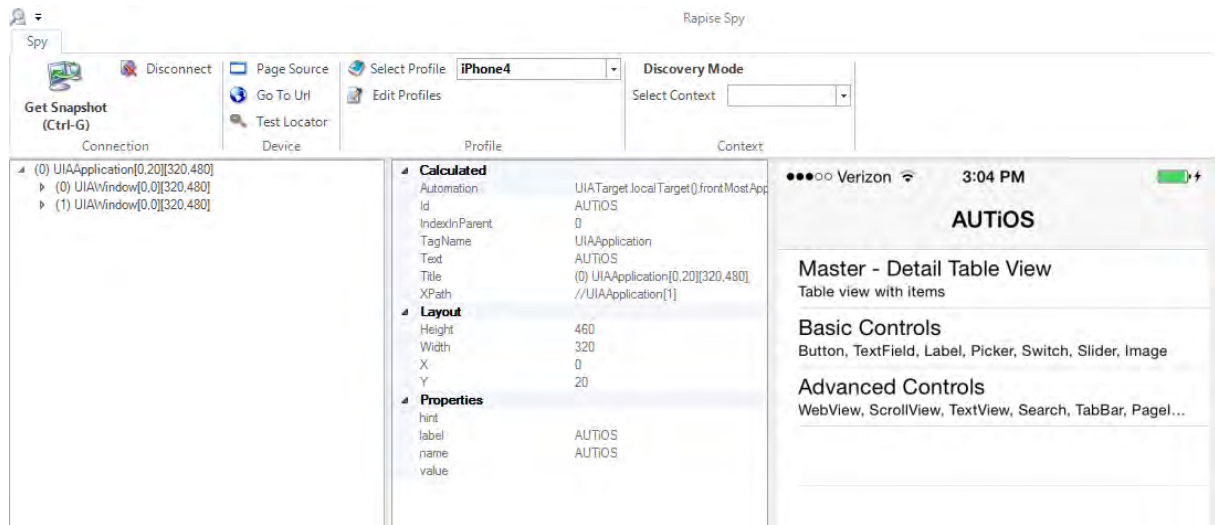


Now you can start testing your mobile iOS application.

2) Using the Mobile Spy

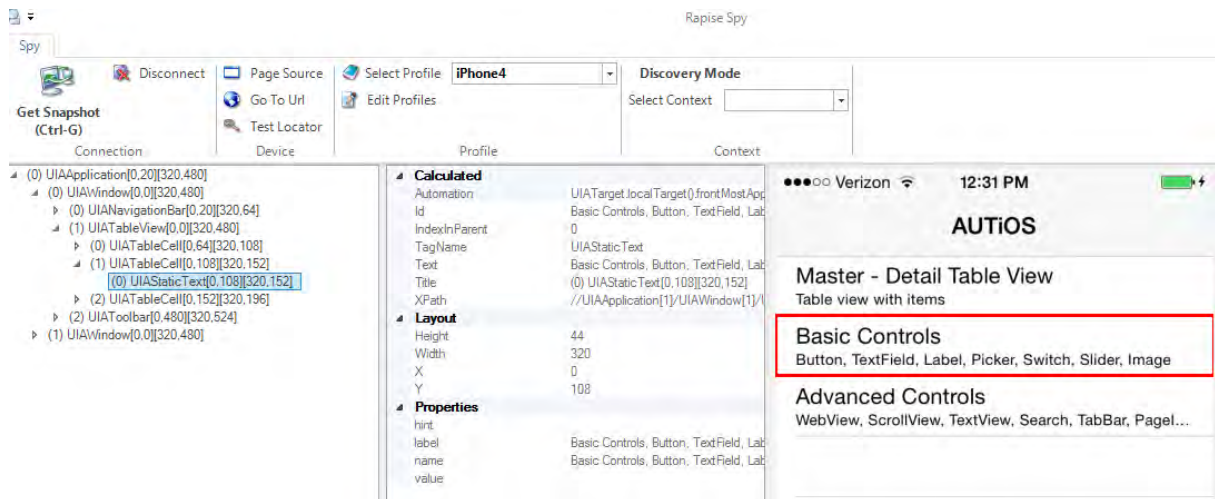
The Mobile Spy will let you view an application running on the mobile device, take a snapshot of its screen and then interactively inspect the objects in the application being tested. This is a useful first step to make sure that Rapise recognizes the application and has access to the objects in the user interface.

To start the Mobile Spy, open the Spy icon on the main [Test ribbon](#) and select the Mobile option and the Mobile Spy will be displayed in **Discovery Mode**. Now click the **[Get Snapshot]** button to display the application specified in the [mobile profile](#) on the screen:



In the example above, we are displaying the sample iOS application that comes with Rapise (AUTIOS).

If you click on one objects in the user interface, it will be highlighted in Red and the tree hierarchy on the left will expand to show the properties of that object:



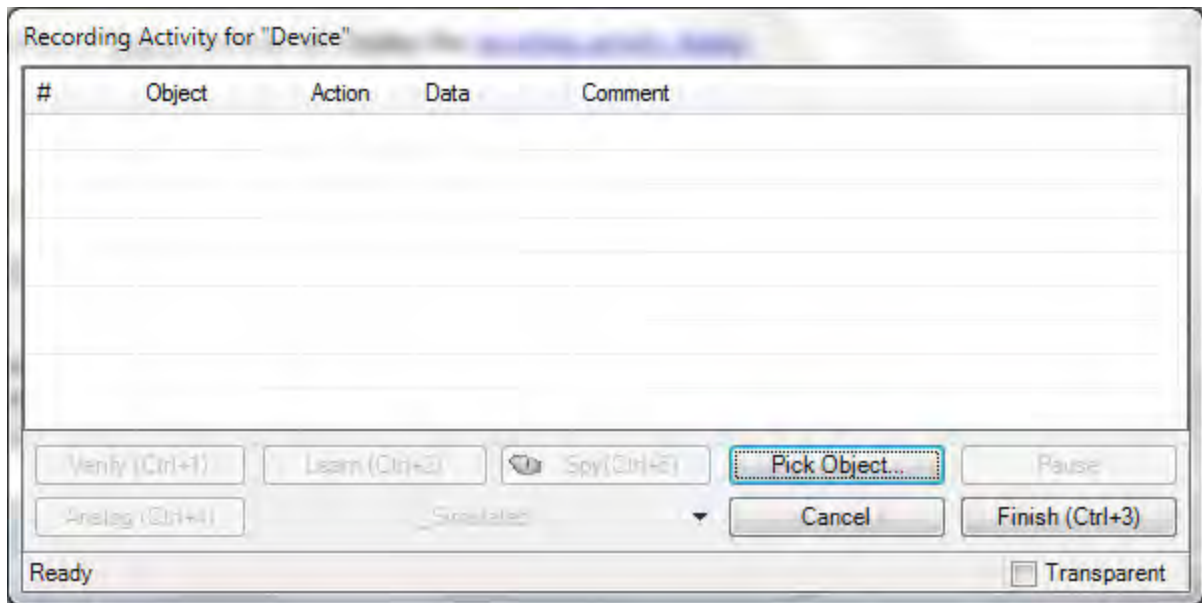
If you want to view the contents of the Spy as a text file, just click the **'Page Source'** button and you will

see the contents of the Spy properties window as a text file.

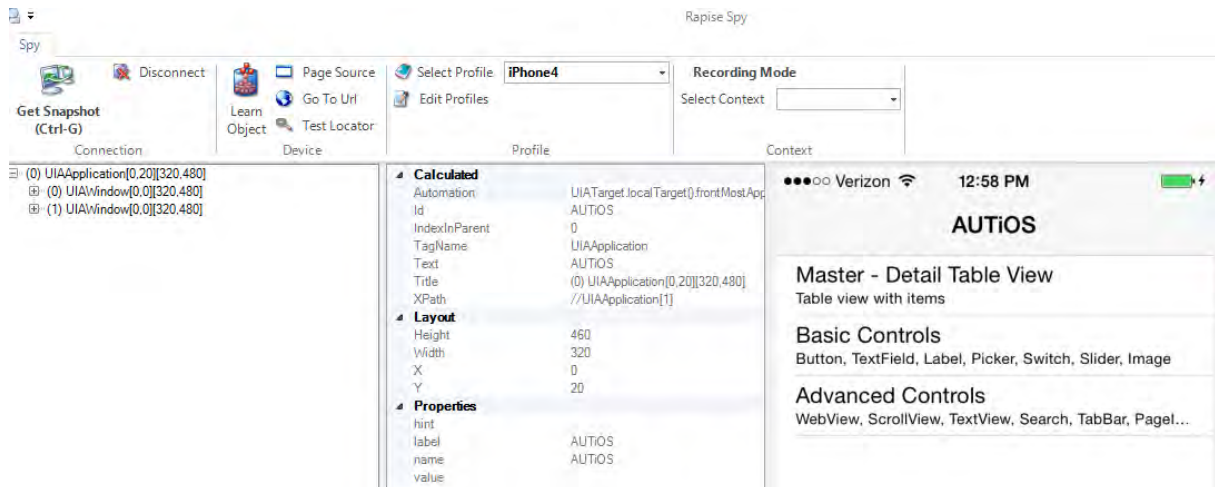
Assuming that you can see your application in the Spy and that the objects can be inspected (similar to that shown above) you can now begin the process of testing your mobile application. Click on **Disconnect** to end your Spy session and close the Rapise Spy dialog. You will now will be returned back to your test script.

3) Recording and Playing a Test

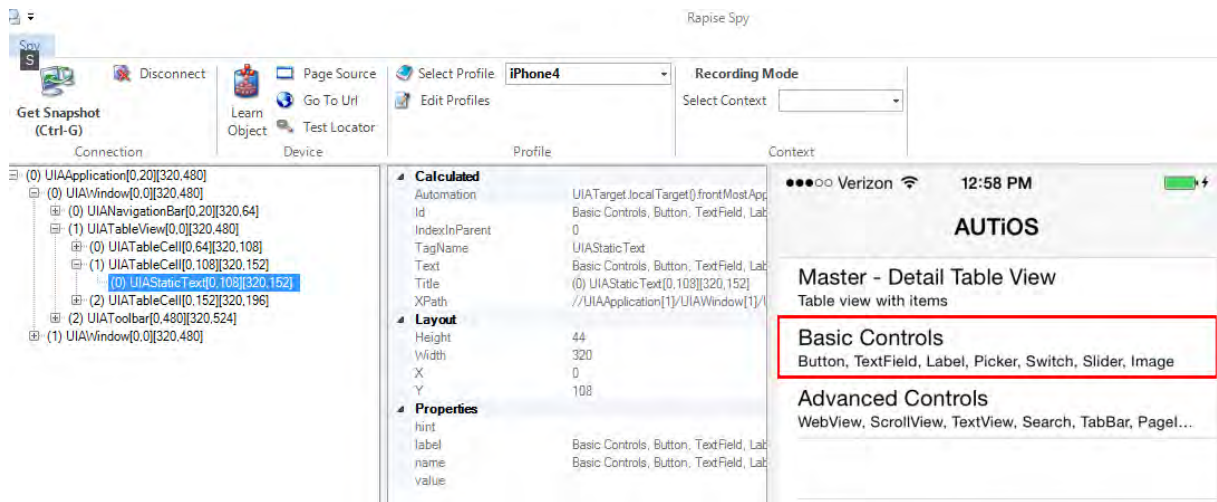
With the new Rapise mobile test script open, click on the **Record/Learn** button in Rapise and that will display the [recording activity dialog](#):



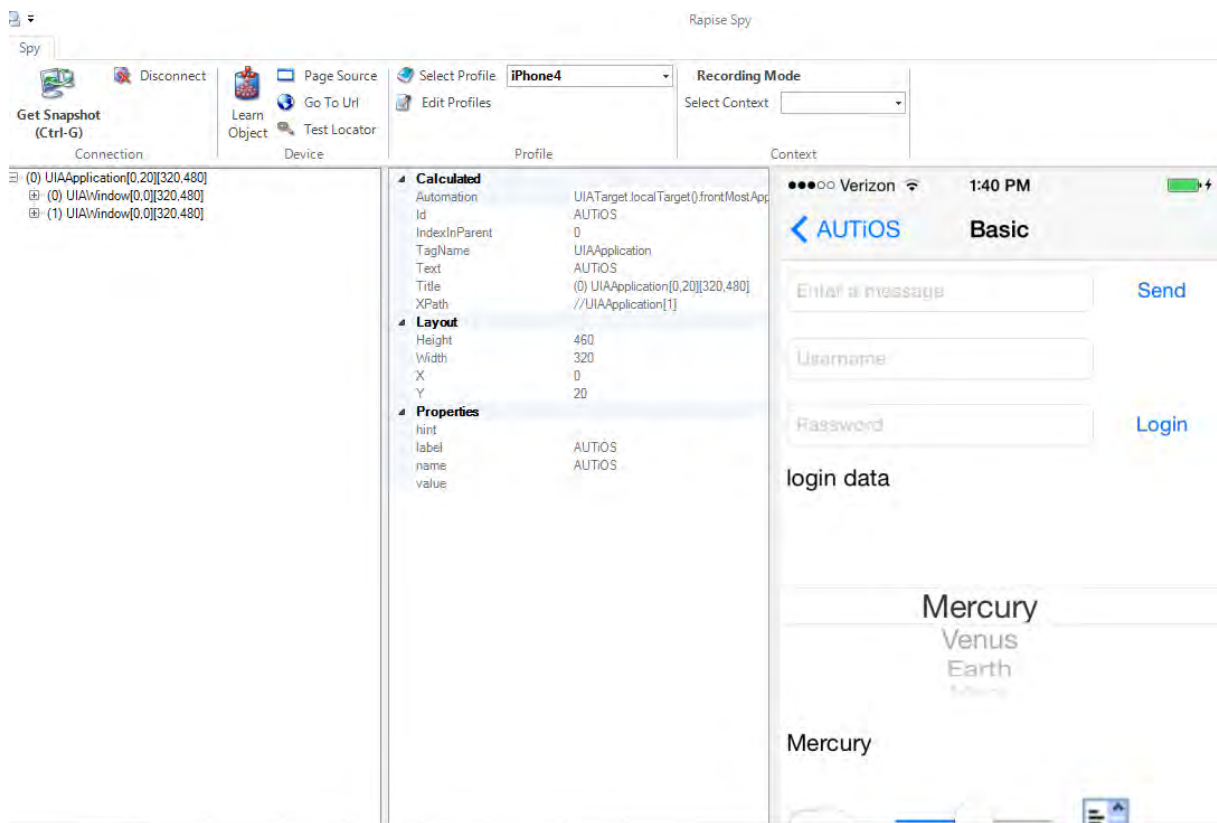
Now click on the **[Pick Object]** button and the Rapise Spy will be displayed in **Recording Mode**:



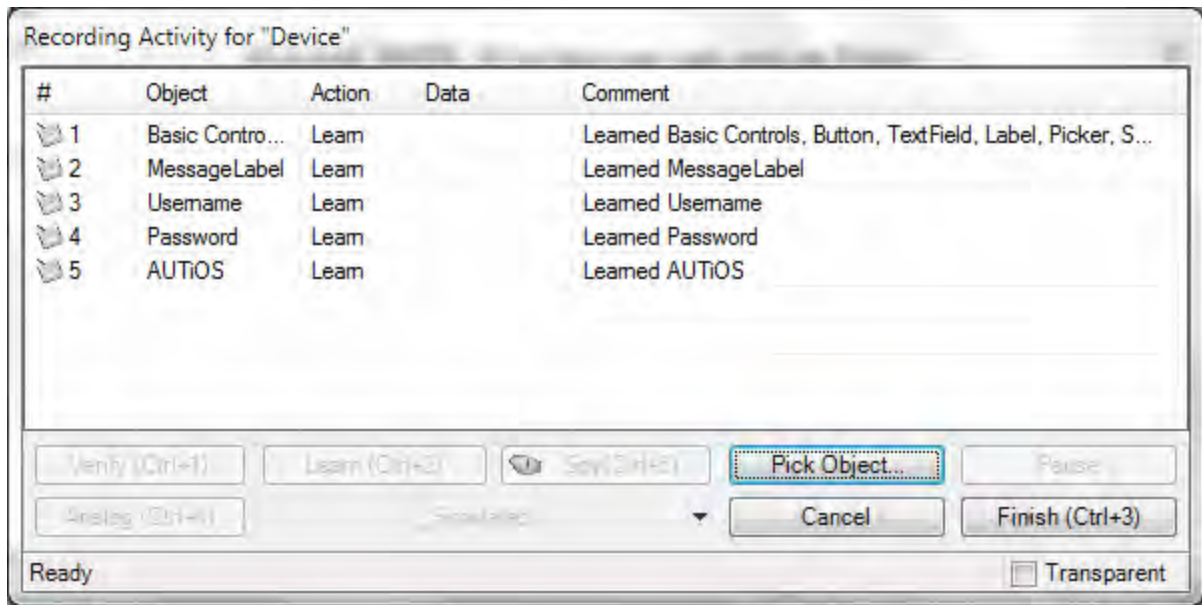
We now want to record a click on one of the menu options, simply highlight one of the menu entries:



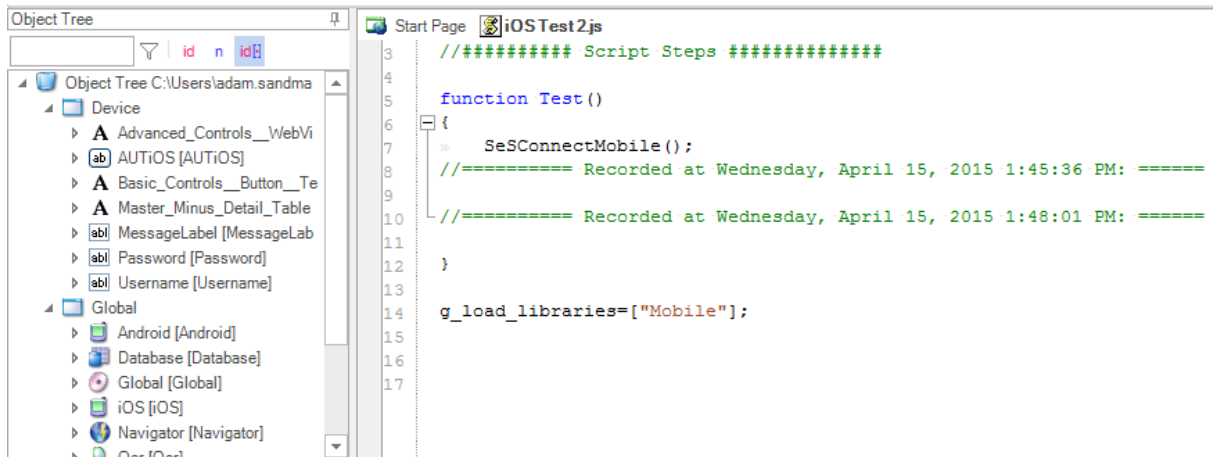
Now click the **[Learn Object]** button and the object will be added to the Rapise [object tree](#). Now on the **device itself** click on the menu entry to go to the next screen, then in Rapise click **Get Snapshot** to get the updated screen:



Now click on some of the objects and choose **Learn** to add them to the [object tree](#). Once you are finished, click on the **Disconnect** button. You will see the events in the recording activity dialog:



Now click on the **Finish** button and you will be taken back to the test script with the iOS objects listed:



Now that we have the objects, we can drag them into the test script editor and write the following script:

```

//##### Script Steps #####

function Test()
{
    SeSConnectMobile();

    SeS('Basic_Controls__Button__TextFiel').DoClick();
    SeS('Username').DoSetText('test user');
    SeS('Password').DoSetText('test pwd');
    SeS('AUTiOS').DoClick();
}

g_load_libraries=["Mobile"];

```

This will click on the first menu entry, then enter a username and password and then finally return back to the main menu.

Now to playback the test simply click **Play** in the Rapise test ribbon and the test will play back in the mobile device:

#	Type	Start	Name	Status	Comment	Iteration
	Message	13:54:06.008	Starting scenario: Test	Info		
	Assert	13:54:51.382	Basic Controls, Button, TextField, Label, Picker, Switch, Slider,	Pass	Returned Value: true	0
	Assert	13:55:06.386	Username.DoSetText(["test user"])	Pass	Returned Value: false	0
	Assert	13:55:21.415	Password.DoSetText(["test pwd"])	Pass	Returned Value: false	0
	Assert	13:55:36.582	AUTiOS.DoClick([])	Pass	Returned Value: true	0
	Test	13:55:36.587	iOS Test 2	Pass	Passed:4 Failed:0	

Test Pass
Total:6 Pass:5 Fail:0 Info:1

This is the report of the test being executed.

Example

You can find the iOS sample tests and sample Application (called AUTiOS) in your Rapise installation at the following locations:

Sample iOS Tests:

- C:\Users\Public\Documents\Rapise\Samples\UsingMobile\AppiOS (testing a native App)
- C:\Users\Public\Documents\Rapise\Samples\UsingMobile\WebiOS (testing a web app)

Sample Application (AUTiOS)

- C:\Users\Public\Documents\Rapise\Samples\UsingMobile\AUT\AUTiOS

(we supply the sample application as both a compiled binary and an Xcode project with Objective C source code)

See Also

- [Technologies - Mobile Testing](#), for instructions on preparing your environment for mobile testing, including instructions for installing the necessary prerequisites and configuring the various third-party components that Rapise uses to connect to the device.
- [Mobile Testing - iOS Setup](#) - the steps for setting up XCode for developing and deploying iOS applications

2.4.8.2 Android

Purpose

Rapise lets you record and play automated tests on real Android devices (e.g. Nexus, Galaxy) as well as test applications using the Android simulator. With Rapise you have the powerful interactive Object Spy that makes it easy to record on one device and playback on multiple.

Prerequisites

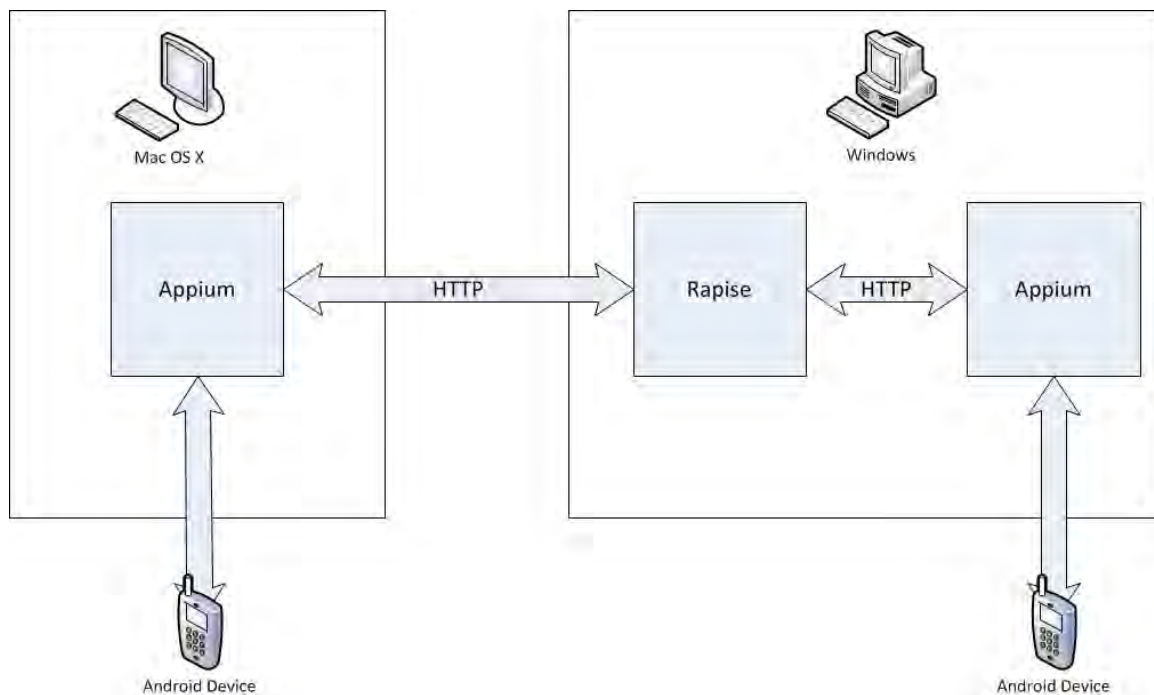
This section assumes that you have already installed and configured all of the necessary components.

For details on this, please refer to the [Technologies - Mobile Testing](#) section that describes the necessary steps for both physical and simulated devices.

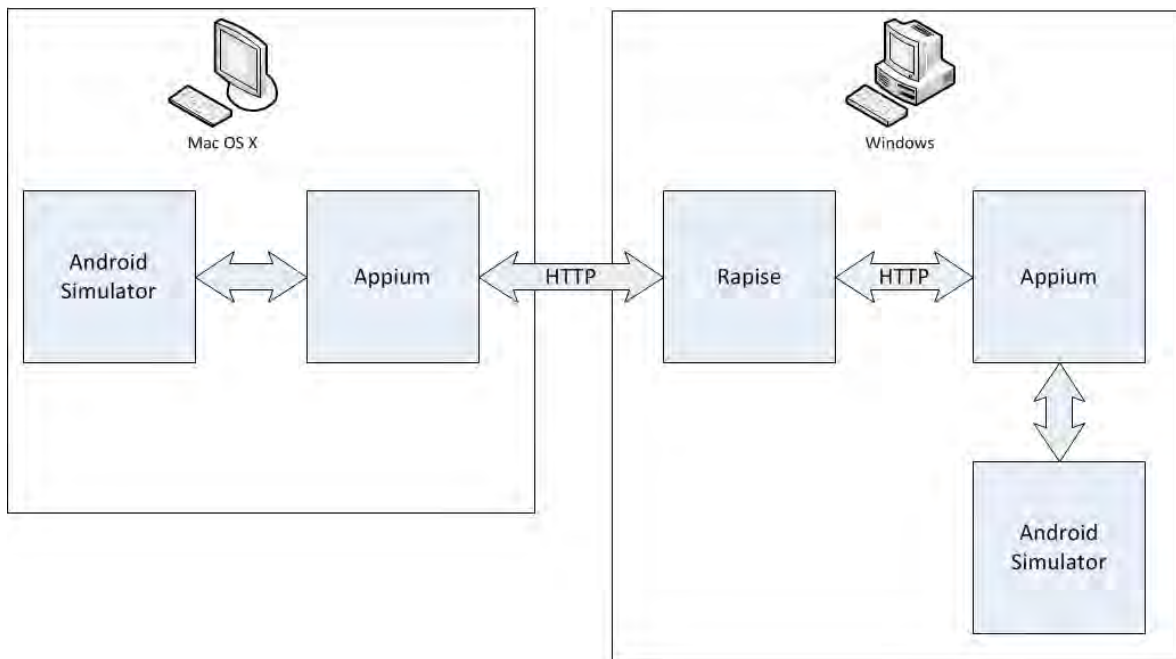
Rapise runs on Windows computers (PC) and Android devices (both real and simulated) can be tested on either an Apple Macintosh (Mac) computer or a PC:

- **If using a Mac**, it is necessary that you install **Appium** and **Android Studio** onto the Mac and connect to Appium over the network from Rapise running on your PC.
- **If using a PC**, you can either install Appium and Android Studio onto a separate PC or you can simply use the same PC that is running Rapise. The only difference will be whether the URL used to connect to Appium is a localhost URL or one pointing to the other PC.

For Physical Android devices the architecture looks like:

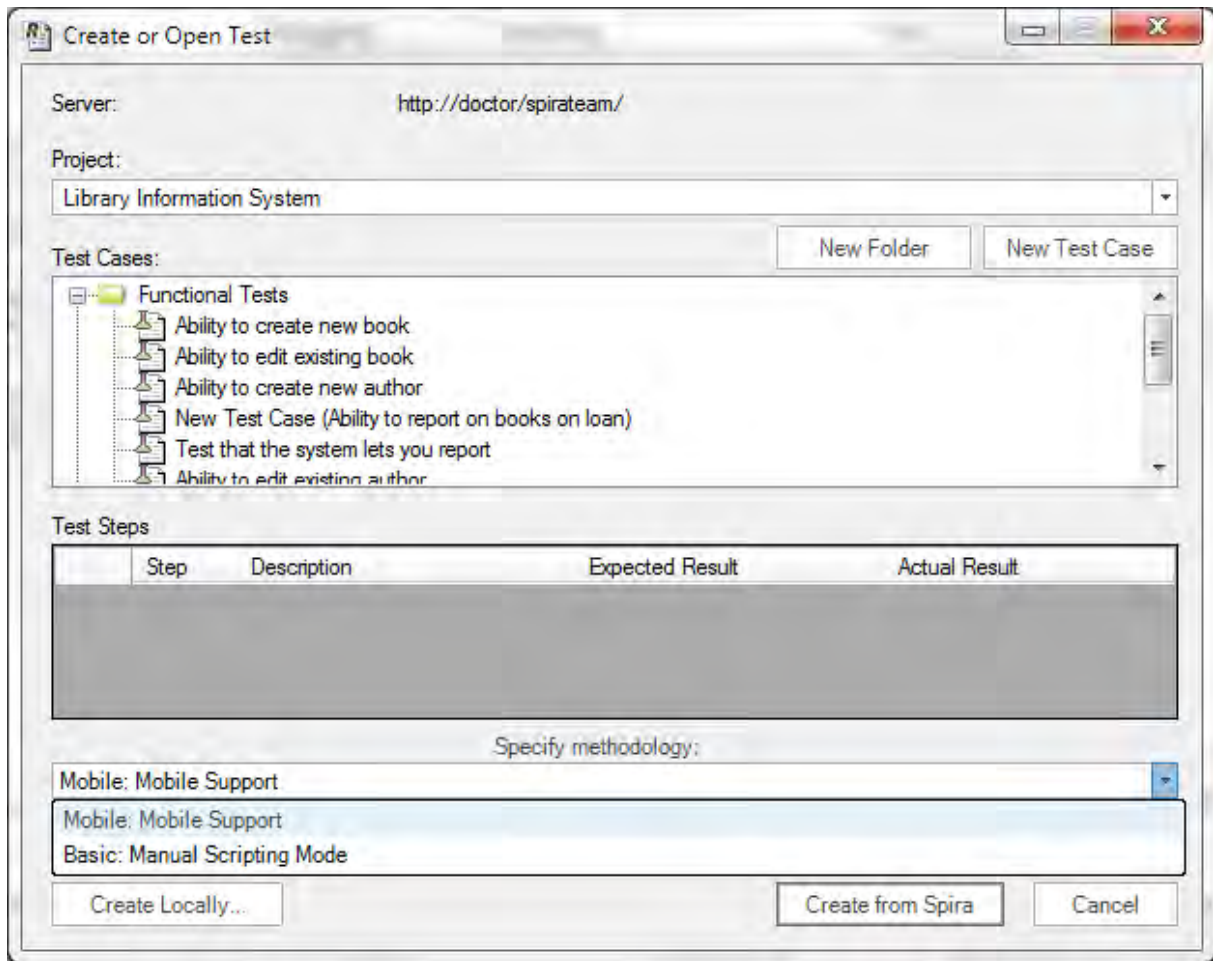


For simulated Android devices (using the Android Virtual Device Manager) the architecture looks like:

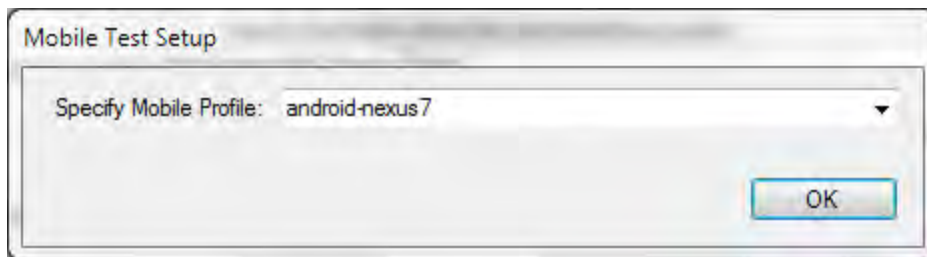


1) Configure the Mobile Profile

To begin mobile testing, when you [create the new test](#), make sure you choose the mobile methodology option "Mobile: Mobile Support":

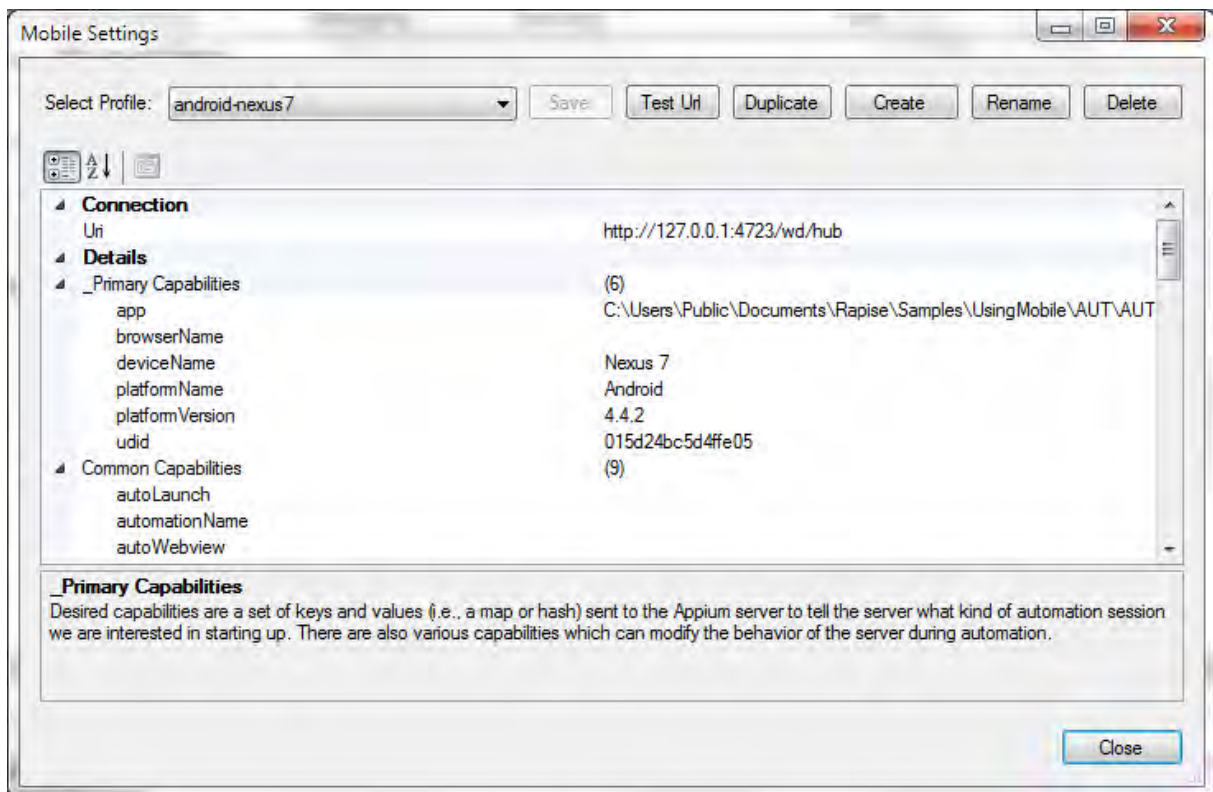


Once you have entered the name for the new test (with the mobile methodology selected) you will be asked to choose the mobile profile. Rapise ships with several default profiles, for now select the one that is closed to the device you want to test (you can always change it later):



When you click the **[OK]** button, Rapise will create a new mobile test with this profile selected.

Now you need to modify the profile so that it correctly matches the type of device you are testing and also so that it correctly points to the [Appium](#) server that you are using to host the mobile devices. Click on Options > Tools > Mobile Settings to bring up the [Mobile Settings](#) dialog box:



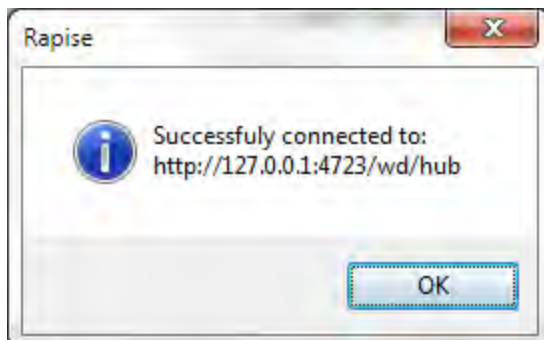
The example screenshot above is for an Android Nexus7 physical device running Android 4.4.2. For any Android device (real or simulated) you will need to provide the following:

- **Uri** - this is the URL to your Appium server. We shall discuss this shortly
- **app** - this needs to be the path (on the Mac/PC running Appium) to the Application being tested on the device (e.g. C:\Users\Public\Documents\Rapise\Samples\UsingMobile\AUT\AUTAndroid\bin\AUTAndroid.apk). If running on the same PC as Rapise, then this path should be already correct.
- **deviceName** - this needs to match the name of the device being connected
- **platformName** - this needs to be set to 'Android'
- **platformVersion** - this needs to be set to the correct version of Android that the device is running

In addition, for physical devices only, you need to specify:

- **udid** - The unique device identifier of the connected physical device (leave blank for simulated devices)

Once you have entered in the information and saved the profile, make sure that Appium is running on the Mac/PC (see the [Technologies - Mobile Testing topic](#) for details) and then click the **[Test URL]** button to verify the connection with Appium:

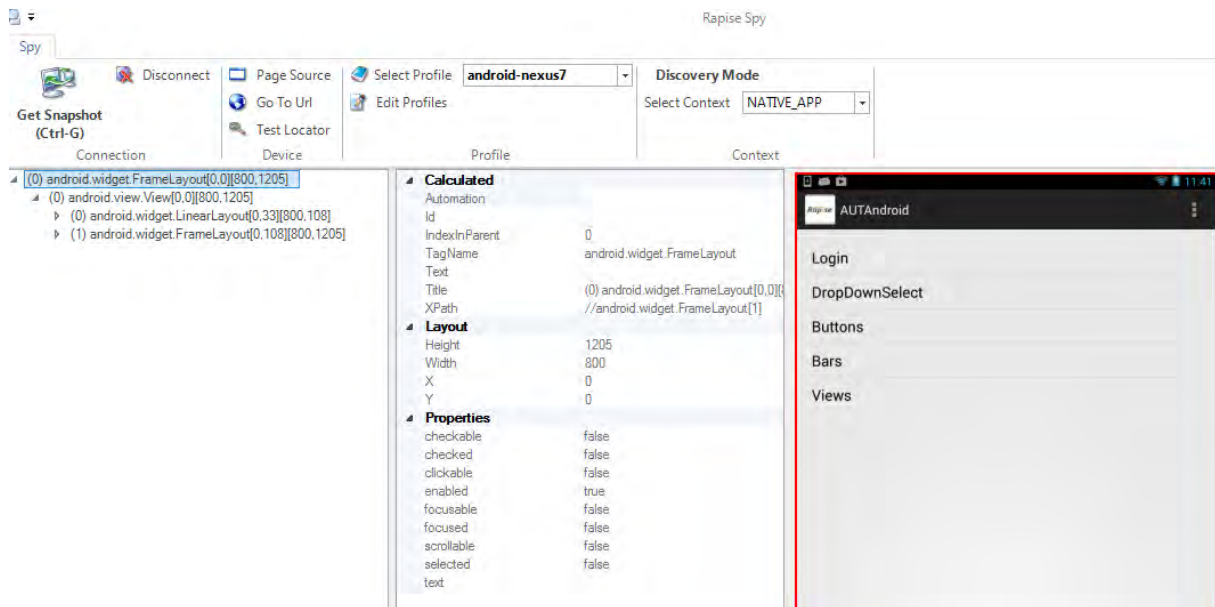


Now you can start testing your mobile Android application.

2) Using the Mobile Spy

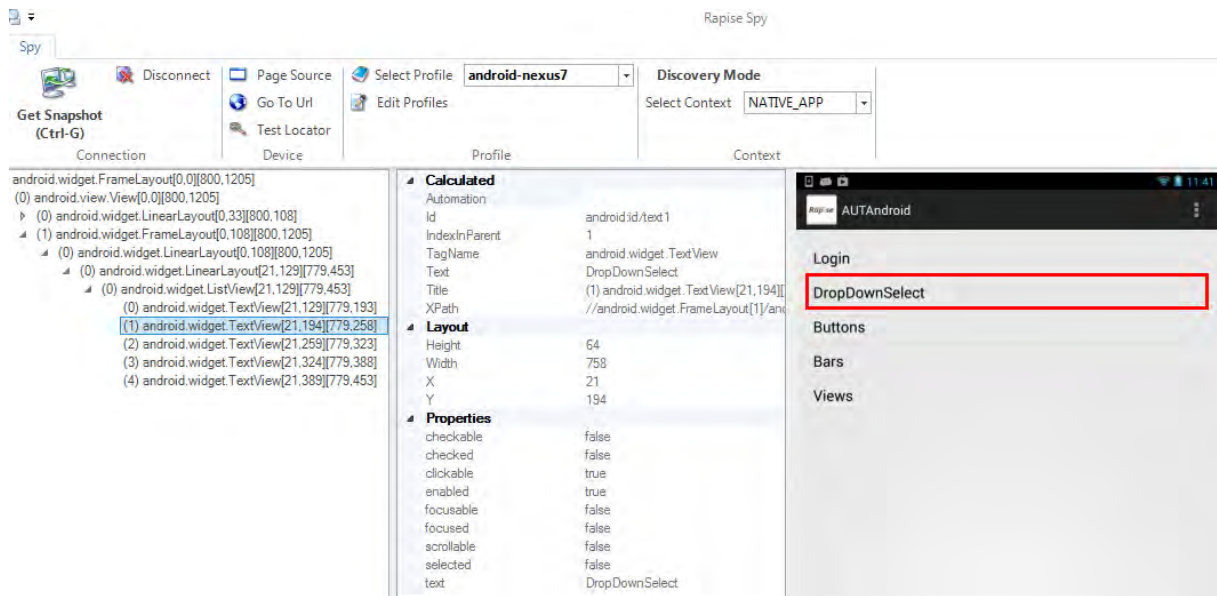
The Mobile Spy will let you view an application running on the mobile device, take a snapshot of its screen and then interactively inspect the objects in the application being tested. This is a useful first step to make sure that Rapise recognizes the application and has access to the objects in the user interface.

To start the Mobile Spy, open the Spy icon on the main [Test ribbon](#) and select the Mobile option and the Mobile Spy will be displayed in **Discovery Mode**. Now click the **[Get Snapshot]** button to display the application specified in the [mobile profile](#) on the screen:



In the example above, we are displaying the sample Android application that comes with Rapise (AUTAndroid).

If you click on one objects in the user interface, it will be highlighted in Red and the tree hierarchy on the left will expand to show the properties of that object:

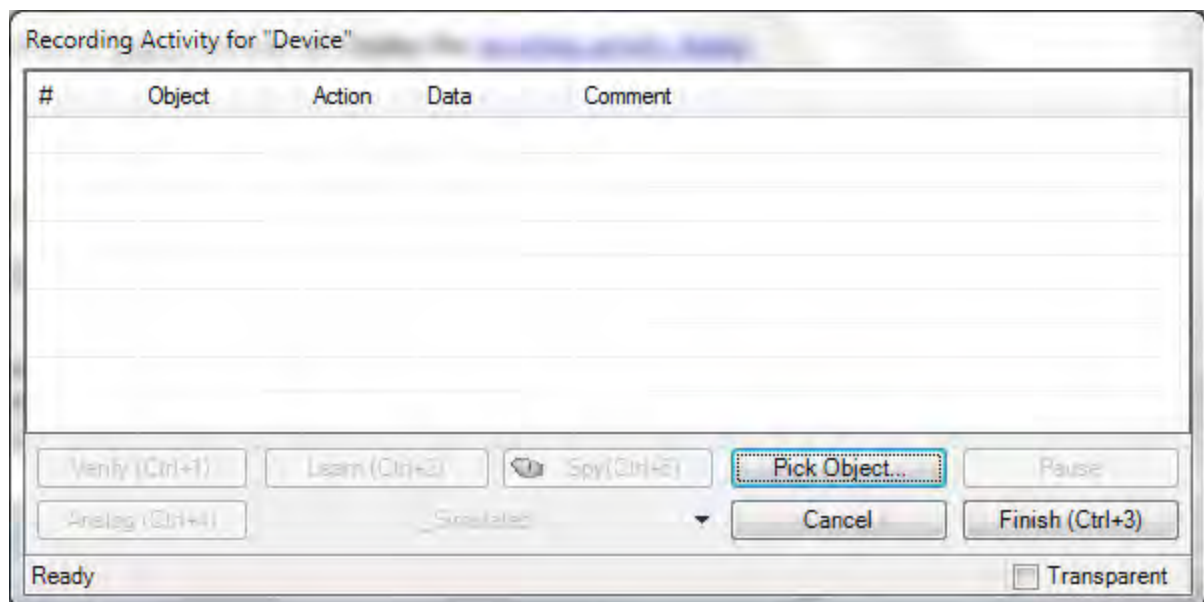


If you want to view the contents of the Spy as a text file, just click the 'Page Source' button and you will see the contents of the Spy properties window as a text file.

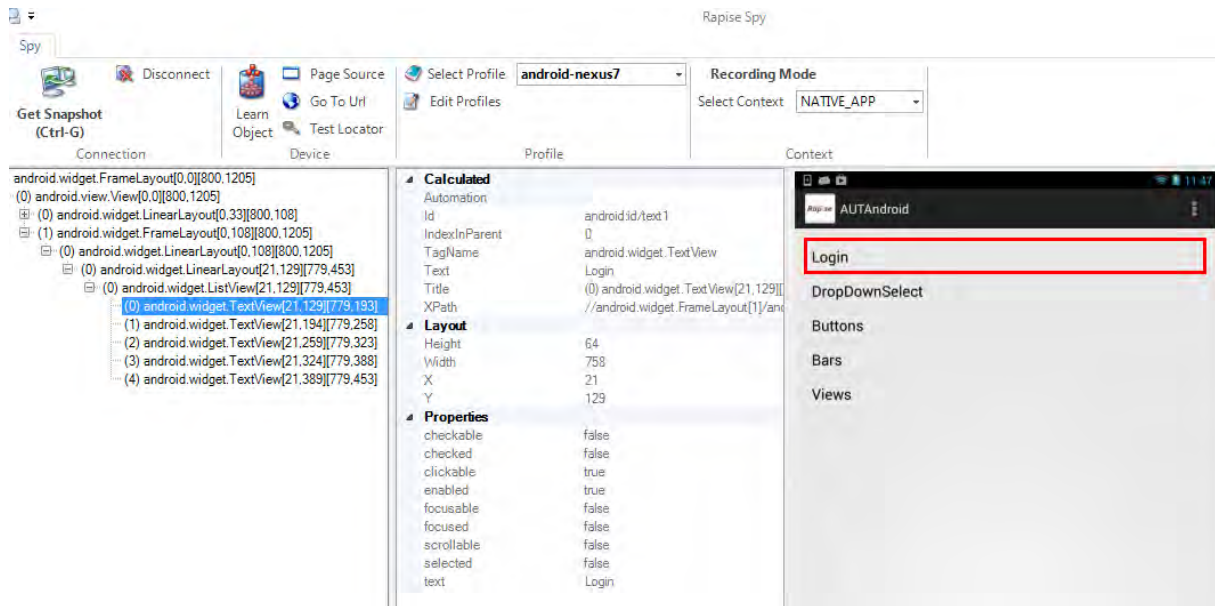
Assuming that you can see your application in the Spy and that the objects can be inspected (similar to that shown above) you can now begin the process of testing your mobile application. Click on **Disconnect** to end your Spy session and close the Rapise Spy dialog. You will now will be returned back to your test script.

3) Recording and Playing a Test

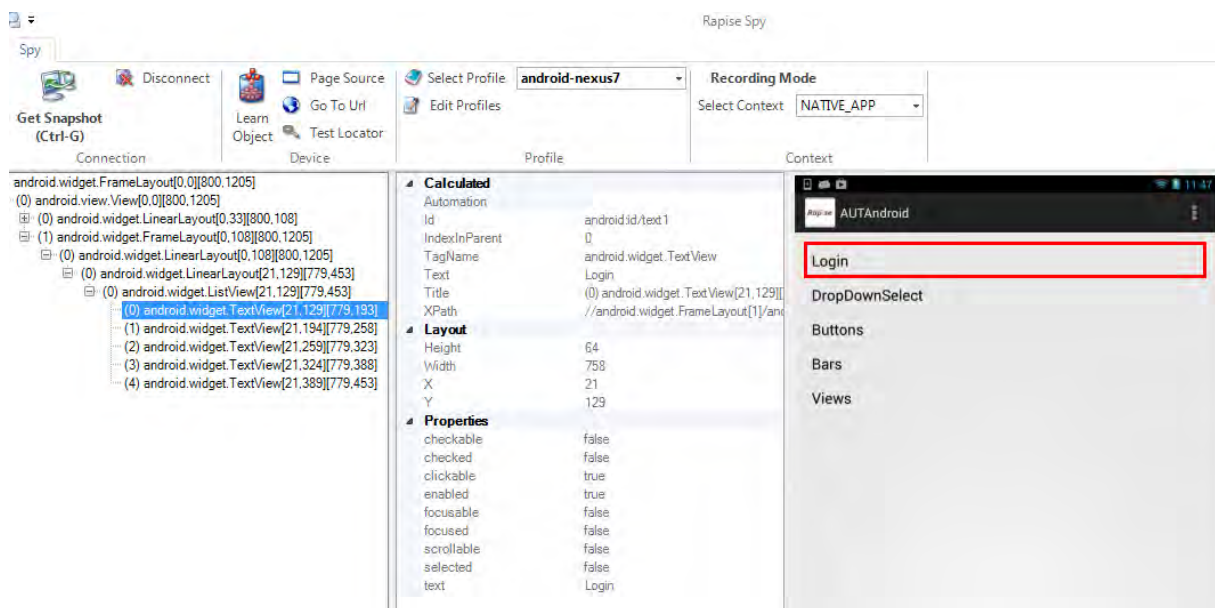
With the new Rapise mobile test script open, click on the **Record/Learn** button in Rapise and that will display the [recording activity dialog](#):



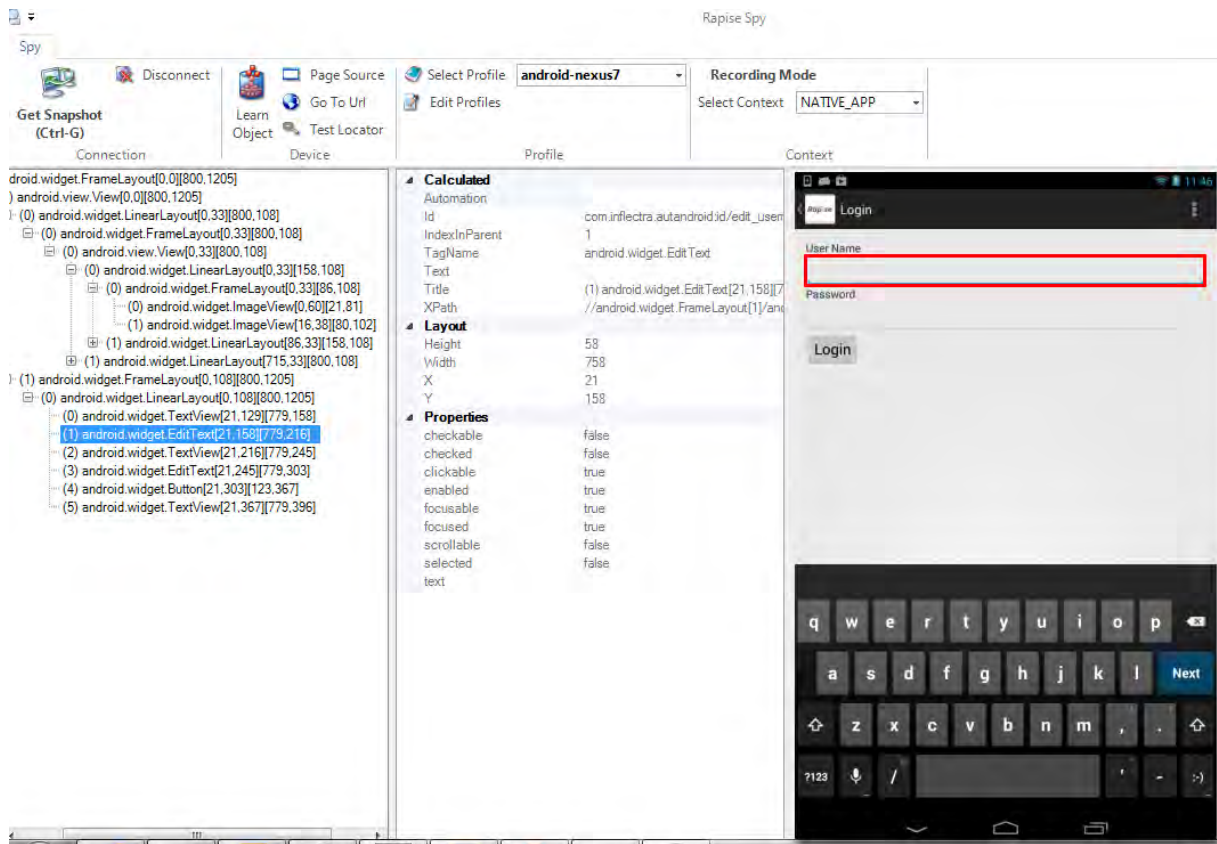
Now click on the **[Pick Object]** button and the Rapise Spy will be displayed in **Recording Mode**:



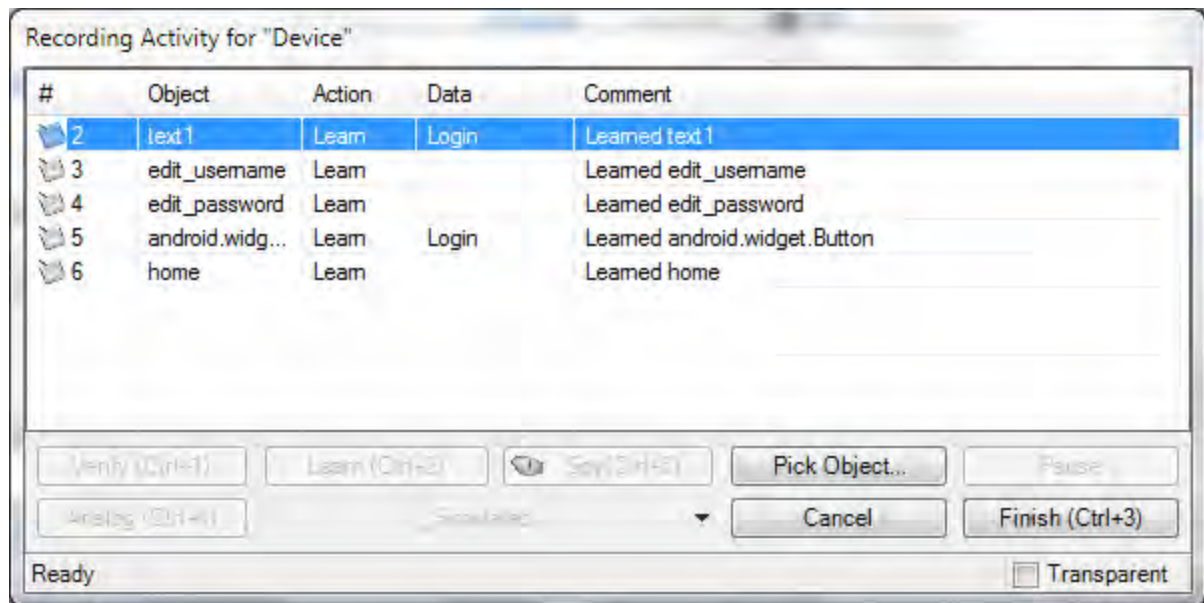
We now want to record a click on one of the menu options, simply highlight one of the menu entries (e.g. "Login"):



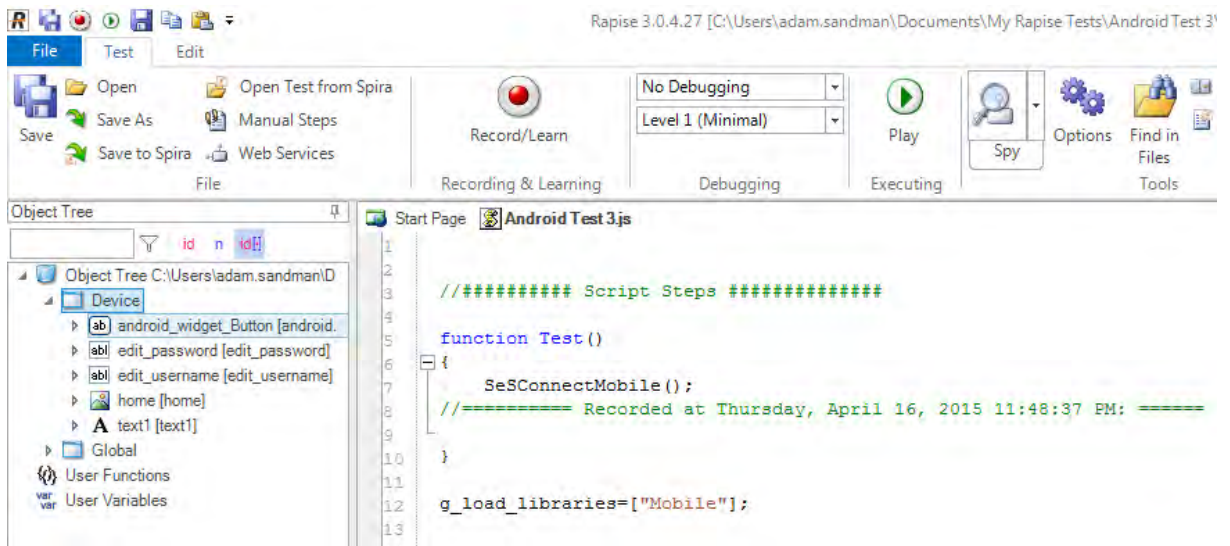
Now click the **[Learn Object]** button and the object will be added to the Rapise [object tree](#). Now on the **device itself** click on the menu entry to go to the next screen, then in Rapise click **Get Snapshot** to get the updated screen:



Now click on some of the objects and choose **Learn** to add them to the [object tree](#). Once you are finished, click on the **Disconnect** button. You will see the events in the recording activity dialog:



Now click on the **Finish** button and you will be taken back to the test script with the Android objects listed:



Now that we have the objects, we can drag them into the test script editor and write the following script:

```
//##### Script Steps #####

function Test()
{
    SeSConnectMobile();

    SeS('text1').DoClick();
    SeS('edit_username').DoSetText('test user');
    SeS('edit_password').DoSetText('test pwd');
    SeS('android_widget_Button').DoClick();
    SeS('home').DoAction();
}

g_load_libraries=["Mobile"];
```

This will click on the first menu entry, then enter a username and password and then finally return back to the main menu.

Now to playback the test simply click **Play** in the Rapise test ribbon and the test will play back in the mobile device:

#	Type	Start	Name	Status	Comment	Iteration
	Message	23:50:41.088	Starting scenario: Test	Info		
	Assert	23:50:56.250	text1.DoClick([])	Pass	Returned Value: true	0
	Assert	23:51:05.477	edit_username.DoSetText(["test user"])	Pass	Returned Value: true	0
	Assert	23:51:14.211	edit_password.DoSetText(["test pwd"])	Pass	Returned Value: true	0
	Assert	23:51:18.253	android.widget.Button.DoClick([])	Pass	Returned Value: true	0
	Assert	23:51:19.129	home.DoAction([])	Pass	Returned Value: true	0
	Test	23:51:19.131	Android Test 3	Pass	Passed:5 Failed:0	

Test Pass
Total:7 Pass:6 Fail:0 Info:1

This is the report of the test being executed.

Example

You can find the Android sample tests and sample Application (called AUTAndroid) in your Rapise installation at the following locations:

Sample Android Tests:

- C:\Users\Public\Documents\Rapise\Samples\UsingMobile\AppAndroid (testing a native App)
- C:\Users\Public\Documents\Rapise\Samples\UsingMobile\WebAndroid (testing a web app)

Sample Application (AUTAndroid)

- C:\Users\Public\Documents\Rapise\Samples\UsingMobile\AUT\AUTAndroid

(we supply the sample application as both a compiled .apk binary and an Android Studio Java project with source code)

See Also

- [Technologies - Mobile Testing](#), for instructions on preparing your environment for mobile testing, including instructions for installing the necessary prerequisites and configuring the various third-party components that Rapise uses to connect to the device.

2.4.9 Manual Testing

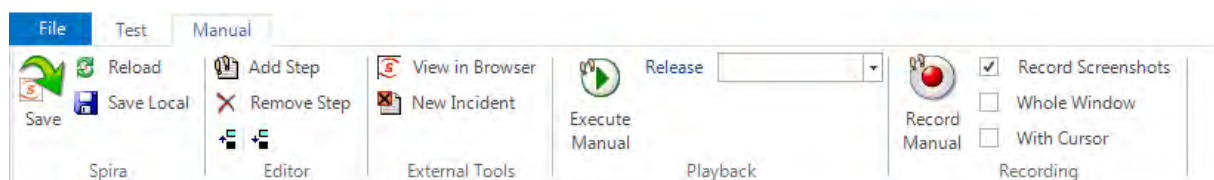
Purpose

Manual testing is used for situations where automated testing does not make sense. This may be due to technical reasons (the application being tested does not have an API that lets tools such as Rapise interact with them) or economic (this part of the application is rarely used and the user interface is changing in each release).

However Rapise can help **accelerate and optimize** your manual testing as well. Rapise lets you rapidly create manual tests 5x faster than creating them by hand. It integrates with Spira for test management, so you still have a central repository of version-controlled test cases, but Rapise allows you to [edit them offline](#) when you have no connection to Spira and also to [execute them from within Rapise](#).

Usage

To start manual testing, simply create your test as normal using the [New Test](#) dialog box. Then once the test has been created, click on the "Manual Steps" icon in the Test ribbon and then you will be taken to the [Manual Editor](#) with the [Manual Test Ribbon](#) Visible:



From here you can start creating your new manual test using the [Manual Recorder](#), then edit the created

test steps in the [Manual Editor](#). Finally you can [save the test to Spira](#) and then play it back using the [Manual Playback](#) and [Incident Logging](#) screens.

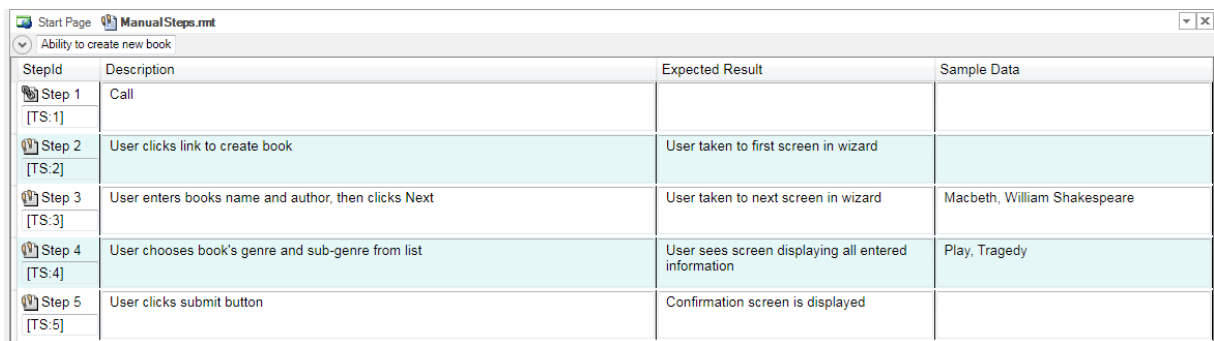
In addition to being used for manual testing, the test step editor lets you view the test steps that define the test scenario so that when you automate the test case, you can easily tie back specific [verification points](#) with test steps in [Spira](#).

Finally you can also have the best of manual and automated testing in the same test script, using [semi-manual](#) testing. That allows you to automate some of the repetitive tasks in a primarily manual test case.

Example

For a full tutorial using the manual playback, refer to the [Exploratory Testing](#) tutorial.

In addition, a working sample of manual testing is available from [Spira](#), simply connect to the sample "Library Information System" project and open the 'Ability to Create New Book (TC2)' test case in the "Functional Tests" folder of the project. That will then display the sample manual test within Rapise:



StepId	Description	Expected Result	Sample Data
Step 1 [TS:1]	Call		
Step 2 [TS:2]	User clicks link to create book	User taken to first screen in wizard	
Step 3 [TS:3]	User enters books name and author, then clicks Next	User taken to next screen in wizard	Macbeth, William Shakespeare
Step 4 [TS:4]	User chooses book's genre and sub-genre from list	User sees screen displaying all entered information	Play, Tragedy
Step 5 [TS:5]	User clicks submit button	Confirmation screen is displayed	

See Also

- [Manual Recording](#)
- [Manual Playback](#)
- [Exploratory Testing Tutorial](#)
- Dialogs, Views and Menus
 - [Manual Ribbon](#)
 - [Manual Test Editor](#)
 - [Manual Playback](#)
 - [Incident Logging](#)

2.4.9.1 Manual Recording

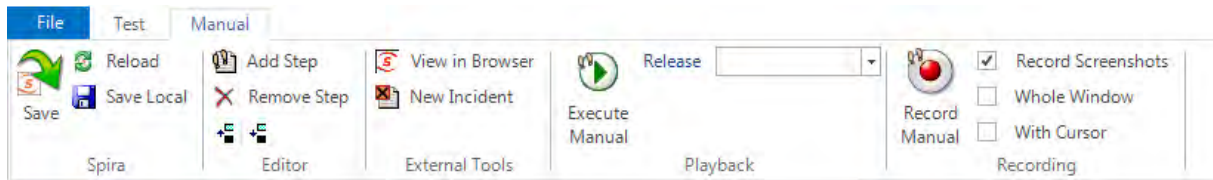
Purpose

As described in the main [Manual Testing](#) topic, sometimes it is not possible to automate the testing of a specific application, however Rapise is also a powerful manual test generation system that can help you **create test cases 5x faster** than simply creating test cases by hand step by step.

This section describes how you can record a set of steps automatically by **simply using the application being tested**. Unlike an automated test however, Rapise will store a human-readable description of what was performed along with a [screenshot](#), rather than actual computer code that can be played back by a computer.

Step 1 - Creating a New Test

To start manual testing, simply create your test as normal using the [New Test](#) dialog box. Then once the test has been created, click on the "Manual Steps" icon in the Test ribbon and then you will be taken to the [Manual Editor](#) with the [Manual Test Ribbon](#) Visible:



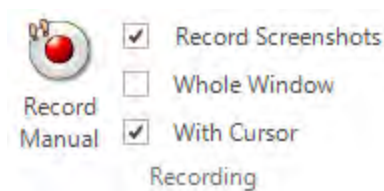
The test step list will initially be empty:

StepId	Description	Expected Result	Sample Data
--------	-------------	-----------------	-------------

Step 2 - Recording Some Steps

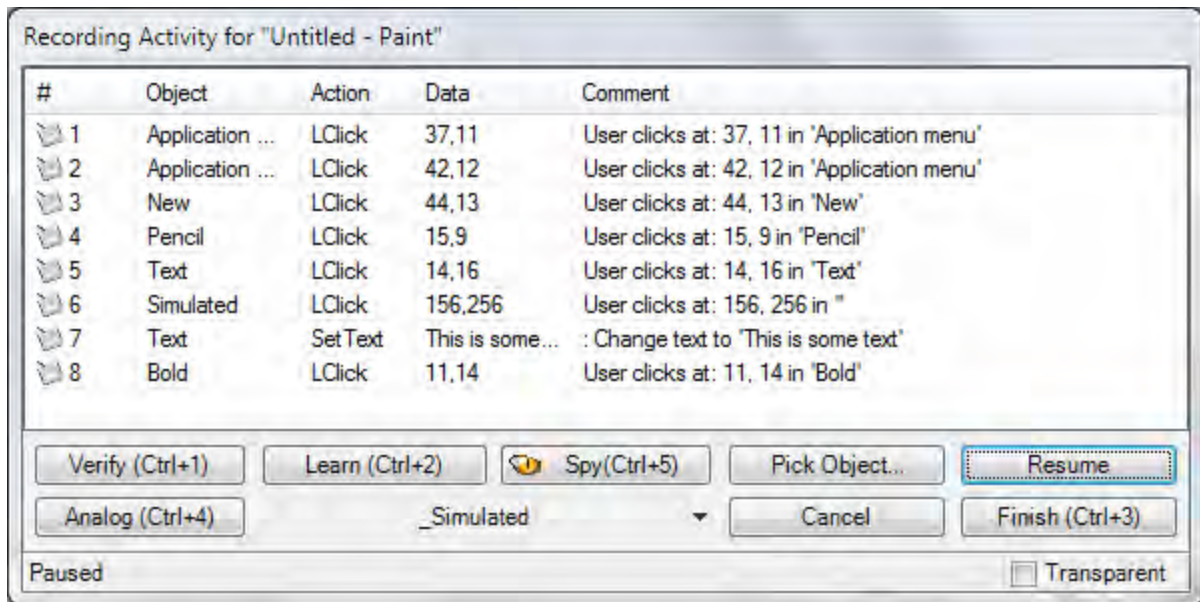
Now you should open up the application you want to record from. In this example we shall be testing the built-in **Microsoft Paint** application. This is a good candidate for manual testing as a lot of the functionality is hard to test automatically since there is a simple drawing canvas rather than discrete buttons and data elements to test.

To make sure that we have screenshots recorded, whilst keeping the size of the screenshots reasonable, use the following recording options:

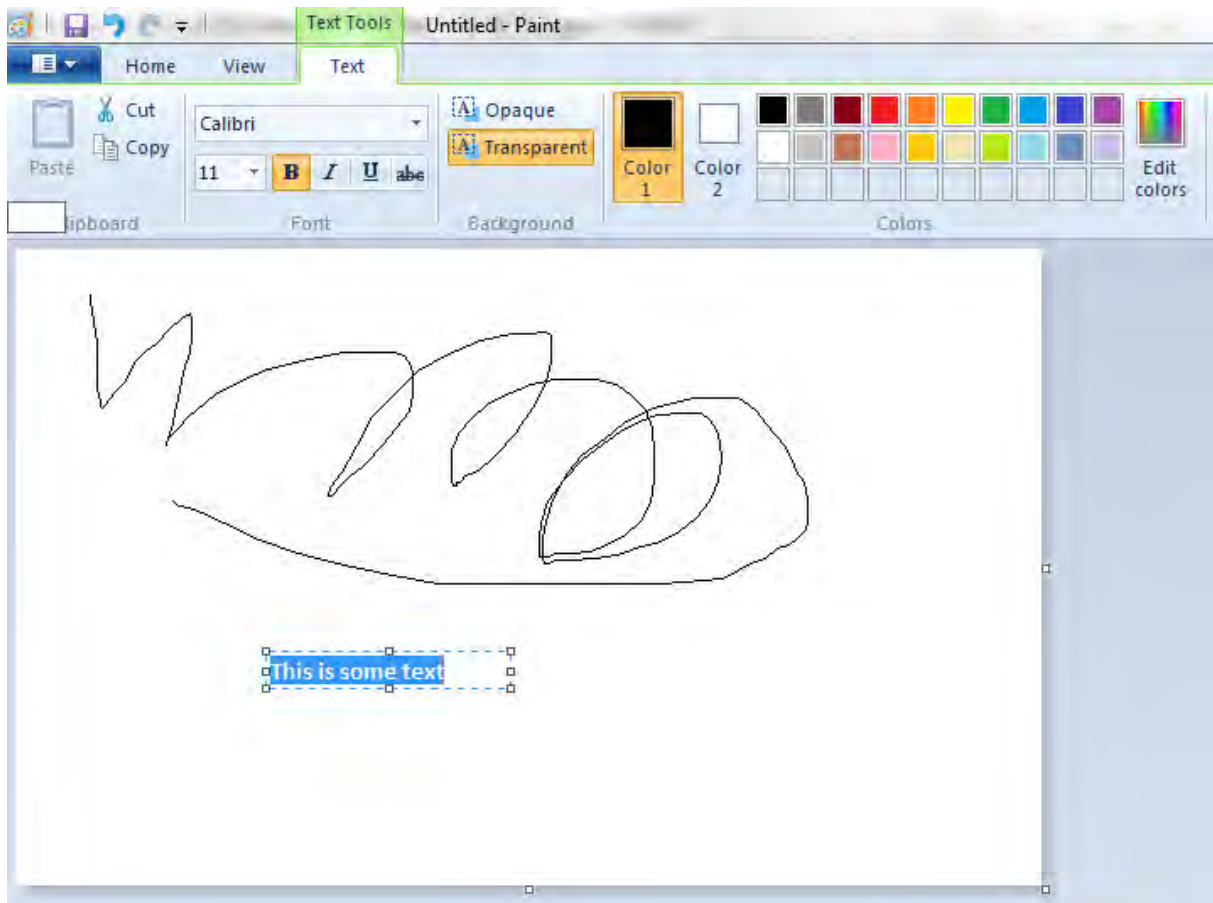


Now click the **Record Manual** button and choose MS-Paint from the list of running applications in [Select Application to Record](#) dialog and then click **Select** to start recording.

As you click through the application, the recording will display the list of steps and actions being captured:



In this example, we created a new canvas, chose the Pencil tool, created a drawing using the pencil, entered some text and then made it bold:



When you click **Finish** to complete the recording, Rapise will now display the list of populated manual

test steps with the embedded screen captures:

StepId	Description	Expected Result	Sample Data
Step 1	User clicks at: 37, 11 in 'Application menu'		SeS('Application_menu').DoLClick(37, 11);
Step 2	User clicks at: 42, 12 in 'Application menu'		SeS('Application_menu').DoLClick(42, 12);
Step 3	User clicks at: 44, 13 in 'New'		SeS('New').DoLClick(44, 13);
Step 4	User clicks at: 15, 9 in 'Pencil'		SeS('Pencil').DoLClick(15, 9);
Step 5	User clicks at: 14, 16 in 'Text'		SeS('Text').DoLClick(14, 16);
Step 6	User clicks at: 156, 256 in "		SeS('Simulated').DoLClick(156, 256);

You will notice that the description of each test step will use the form "User [action] at [coordinates] in '[object name]'" and the expected result will include the screenshot of what the user was doing. In addition, the sample data will contains the equivalent Rapise automation code for reference. This can be useful later if you decide to automate this test.

Step 3 - Editing the Steps

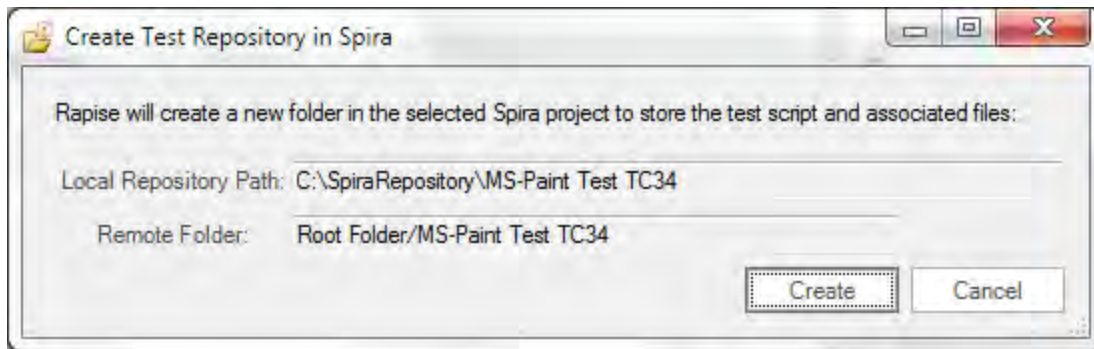
Typically you may want to **add some additional steps** (e.g. we added a line to describe the process of starting up MS Paint), **delete any duplicate/unnecessary steps** and **reword them** so that they make the most sense to the tester. In our example we used the [manual editing](#) screen to update the steps as follows:

StepId	Description	Expected Result	Sample Data
Step 1	User starts up the MS-Paint Application	The application loads with a blank canvas	
Step 2	User clicks the main 'Application menu'		SeS('Application_menu').DoLClick(42, 12);
Step 3	User clicks the 'New' entry		SeS('New').DoLClick(44, 13);
Step 4	User clicks on 'Pencil'		SeS('Pencil').DoLClick(15, 9);
Step 5	User clicks the 'Text' tool		SeS('Text').DoLClick(14, 16);
Step 6	User clicks at: 156, 256 in the canvas		SeS('Simulated').DoLClick(156, 256);

Click **Save** to make sure the updates are all saved locally. Now before you can [execute these tests](#), you will need to Save them to [Spira](#) (our web-based test management system).

Step 4 - Saving to Spira

Click on the option to **Save to Spira**, you will be asked to confirm the creation of the document folder in Spira that will hold the test files:



Click on **'Create'** and then the manual test will be saved to Spira. You will see that this process adds the unique Spira test step IDs to each step. They are displayed using the format `[TS:xxx]`. This special token `[TS:xxx]` can be used in `Tester.Assert` commands to relate specific [verification points](#) with test steps during automated testing.

StepId	Description	Expected Result	Sample Data
[TS:47]			
[TS:48]	User clicks on 'Pencil'		SeS('Pencil').DoLClick(15, 9);
[TS:49]	User clicks the 'Text' tool		SeS('Text').DoLClick(14, 16);
[TS:50]	User clicks at: 156, 256 in the canvas		SeS('Simulated').DoLClick(156, 256);
[TS:51]	Enters text 'This is some text'	This is some text	SeS('Text1').DoSetText("This is some text");
	User clicks on the 'Bold' button		SeS('Bold').DoLClick(11, 14);

Now that the test has been saved in Spira, you can click on the **'View in Browser'** option to see how the test steps look inside Spira.

▼ Test Steps

> Insert Step | Insert Link | Delete | Copy | Refresh | -- Show/Hide columns -- | Edit Parameters

<input type="checkbox"/>	Step #	Description	Expected Result	Sample Data	Execution Status	ID	Edit
<input type="checkbox"/>	Step 1	User starts up the MS-Paint Application	The application loads with a blank canvas		Not Run	TS000045	Edit
<input type="checkbox"/>	Step 2	User clicks the main 'Application menu'		SeS('Application_menu').DoLClick(42, 12);	Not Run	TS000046	Edit
<input type="checkbox"/>	Step 3	User clicks the 'New' entry		SeS('New').DoLClick(44, 13);	Not Run	TS000047	Edit
<input type="checkbox"/>	Step 4	User clicks on 'Pencil'		SeS('Pencil').DoLClick(15, 9);	Not Run	TS000048	Edit
<input type="checkbox"/>	Step 5	User clicks the 'Text' tool		SeS('Text').DoLClick(14, 16);	Not Run	TS000049	Edit
<input type="checkbox"/>	Step 6	User clicks at: 156, 256 in the canvas		SeS('Simulated').DoLClick(156, 256);	Not Run	TS000050	Edit
<input type="checkbox"/>	Step 7	Enters text 'This is some text'	This is some text	SeS('Text1').DoSetText("This is some text");	Not Run	TS000051	Edit
<input type="checkbox"/>	Step 8	User clicks on the 'Bold' button		SeS('Bold').DoLClick(11, 14);	Not Run	TS000052	Edit

Show 15 rows per page | Displaying page 1 of 1

Now this test case is ready for [manual playback](#).

See Also

- [Manual Testing](#)
- [Manual Playback](#)

2.4.9.2 Manual Playback

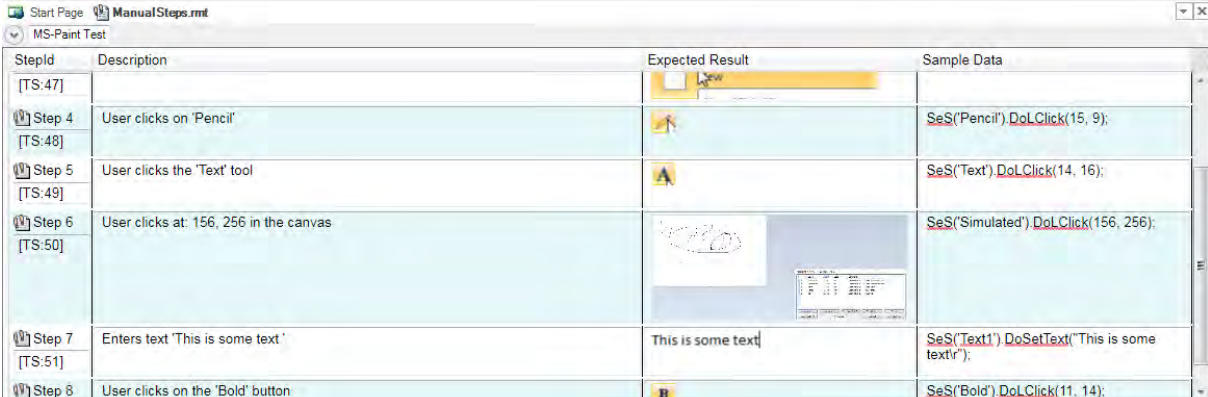
Purpose


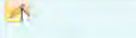
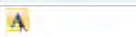


As described in the main [Manual Testing](#) topic, sometimes it is not possible to automate the testing of a specific application, however Rapise is also a powerful manual testing tool that lets you execute manual test cases stored in [SpiraTest](#).

The advantage of using Rapise to execute the manual tests (instead of just using SpiraTest itself) is that Rapise can display the [execution window](#) as a small minimizable dialog box that gets rid of the need to have two screens (one to display the test and one to test the application). Also Rapise provides superior [image manipulation tools](#) over those available in a web application.

Step 1 - Open the Manual Test

Using the MS-Paint example manual test that [we created previously](#), open up the test in Rapise. Click on the 'Manual Steps' icon in the [Test ribbon](#) and you should see the list of test steps:

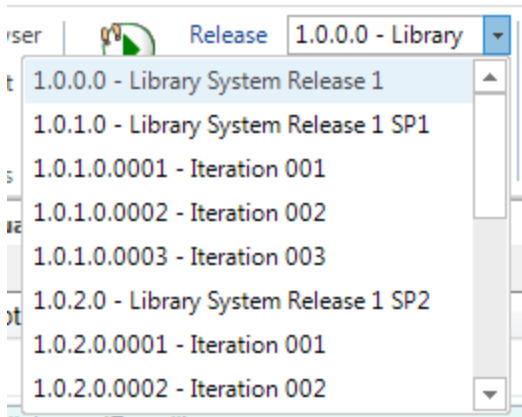


StepId	Description	Expected Result	Sample Data
[TS:47]			
Step 4 [TS:48]	User clicks on 'Pencil'		SeS('Pencil').DoLClick(15, 9);
Step 5 [TS:49]	User clicks the 'Text' tool		SeS('Text').DoLClick(14, 16);
Step 6 [TS:50]	User clicks at: 156, 256 in the canvas		SeS('Simulated').DoLClick(156, 256);
Step 7 [TS:51]	Enters text 'This is some text.'	This is some text	SeS('Text1').DoSetText('This is some text\r');
Step 8	User clicks on the 'Bold' button		SeS('Bold').DoLClick(11, 14);

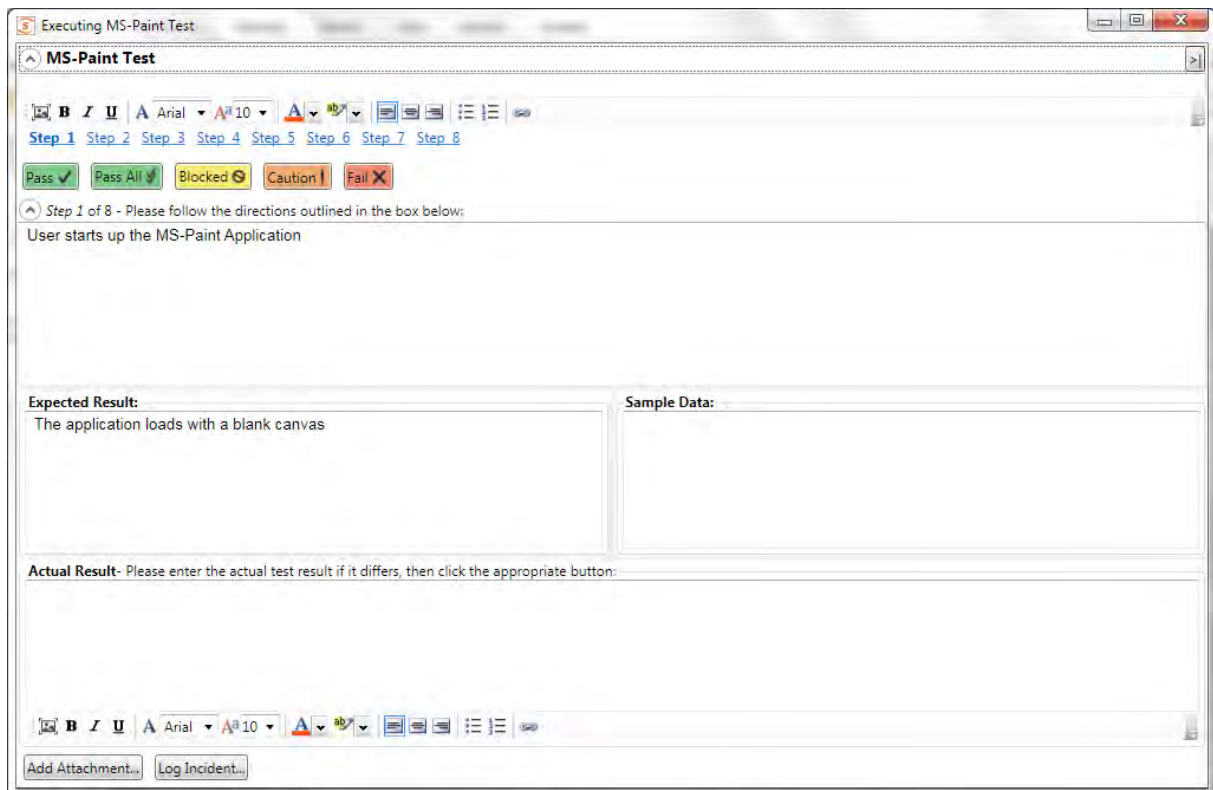
Now that we have the test opened, we can start the playback

Step 2 - Executing the Manual Test

Choose the Release from the list of those available in the project:

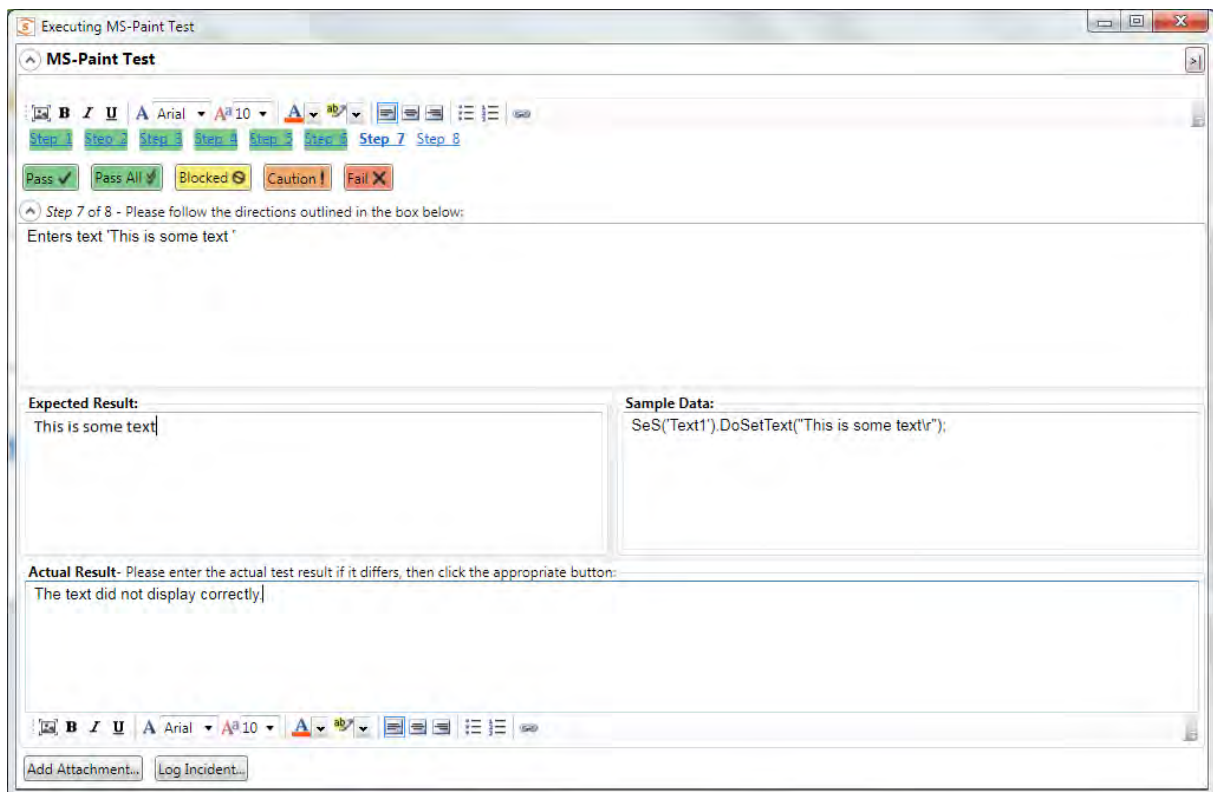


Then click on the '**Execute**' icon to start manual test execution. That will bring up the [manual playback](#) screen:



On this screen, we shall follow through the steps listed in the test case. This involves opening up MS Paint, creating a new canvas, adding some lines using the pencil and then adding some text using the text tool. As you perform these steps, click on the **Pass** button to indicate that each step has passed. You can also minimize the manual playback screen by clicking the > | button.

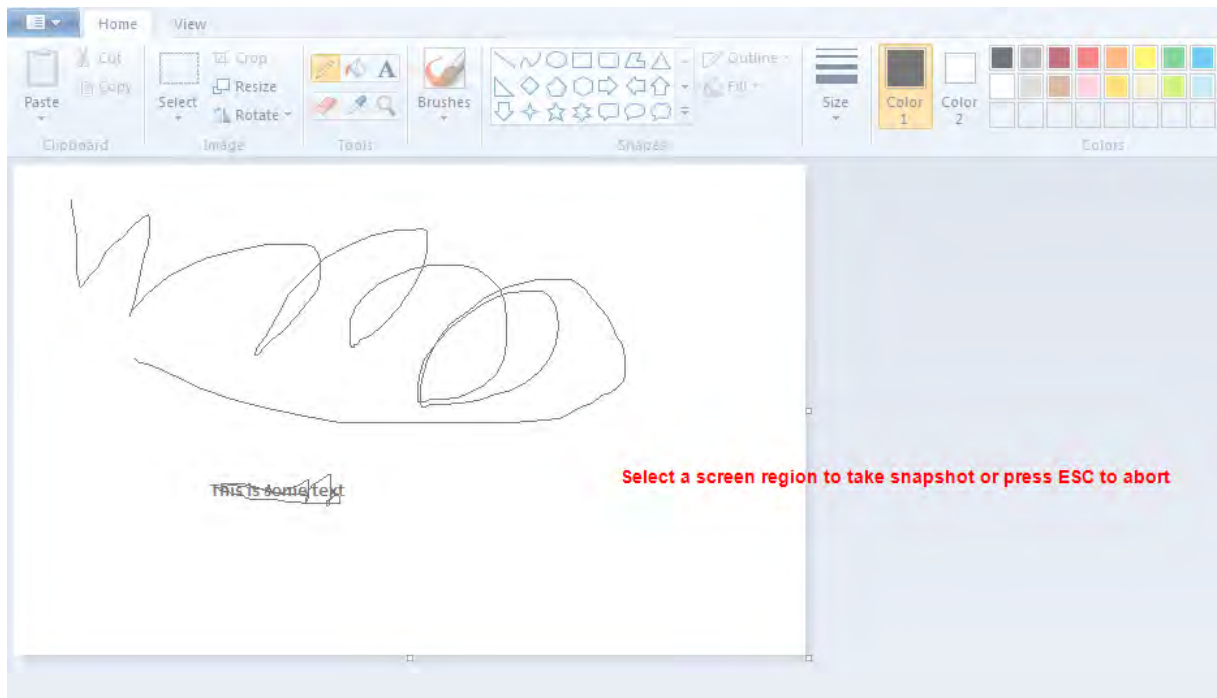
Once you get to Step 7, we shall pretend that MS Paint failed to display the text correctly. Enter in the Actual Result a message to that effect:



Next we shall attach a screenshot of what actually happened and log a test failure and associated incident / defect.

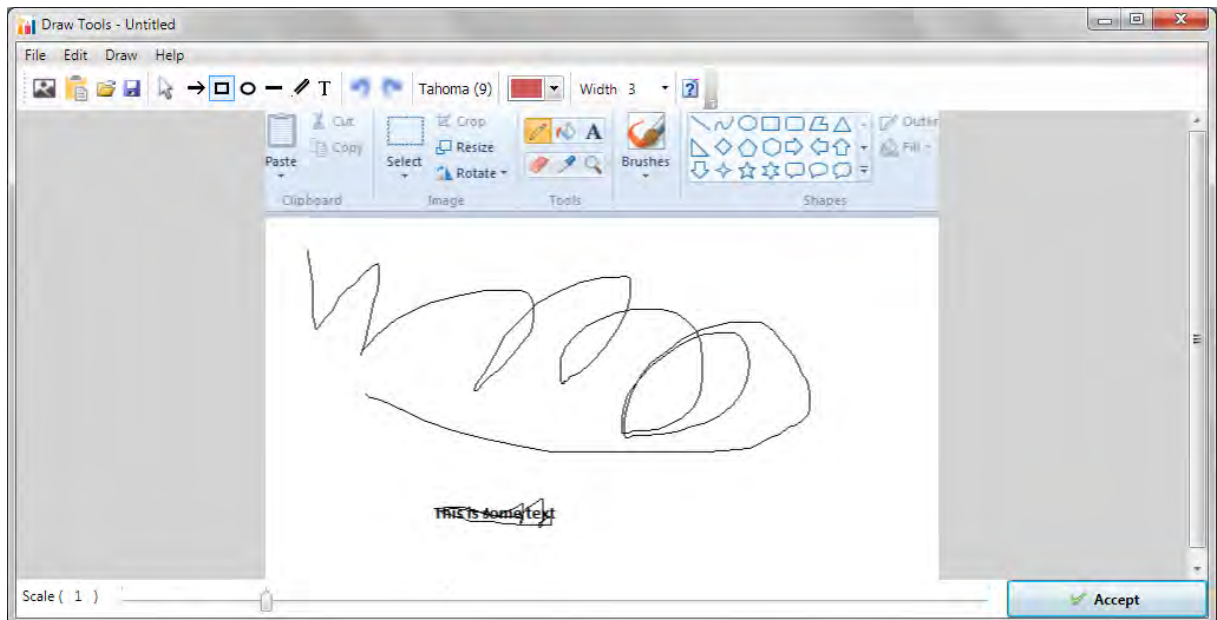
Step 3 - Capturing and Annotating a Screenshot

Click on the **Image icon** in the rich text editor associated with the **Actual Result** text box. That will bring up the [Drawing Tools](#) screen that asks you to draw a rectangle to select a portion of the current screen to capture:

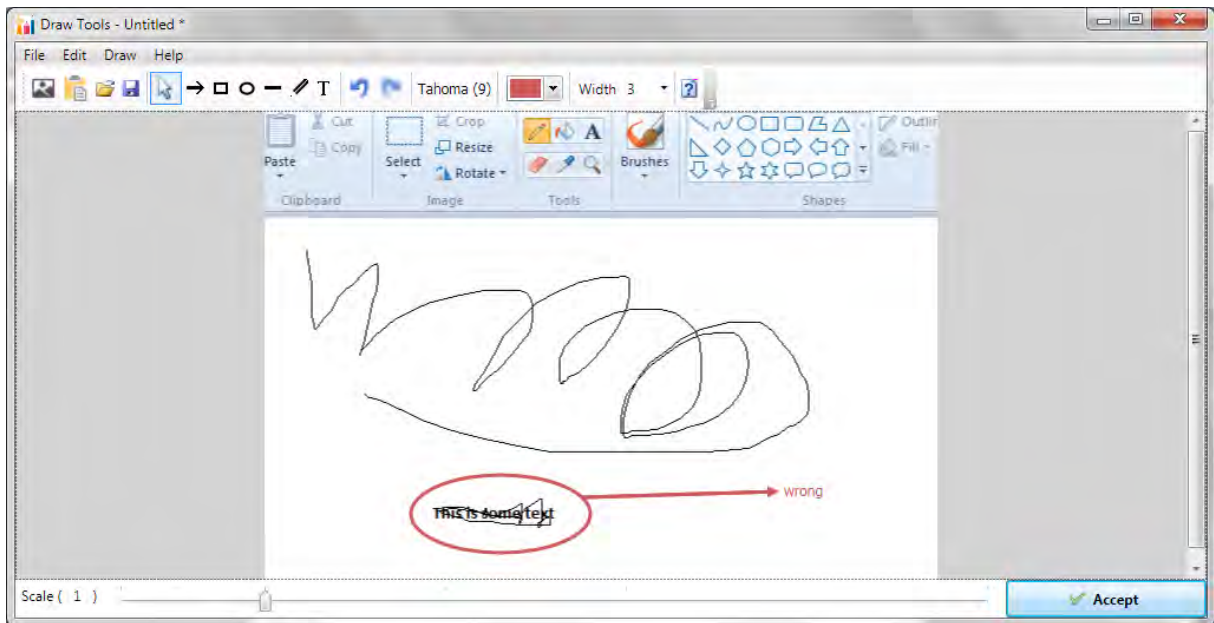


If the MS Paint application is not in the foreground, just click ESC on your keyboard to abort, rearrange your windows and then try again.

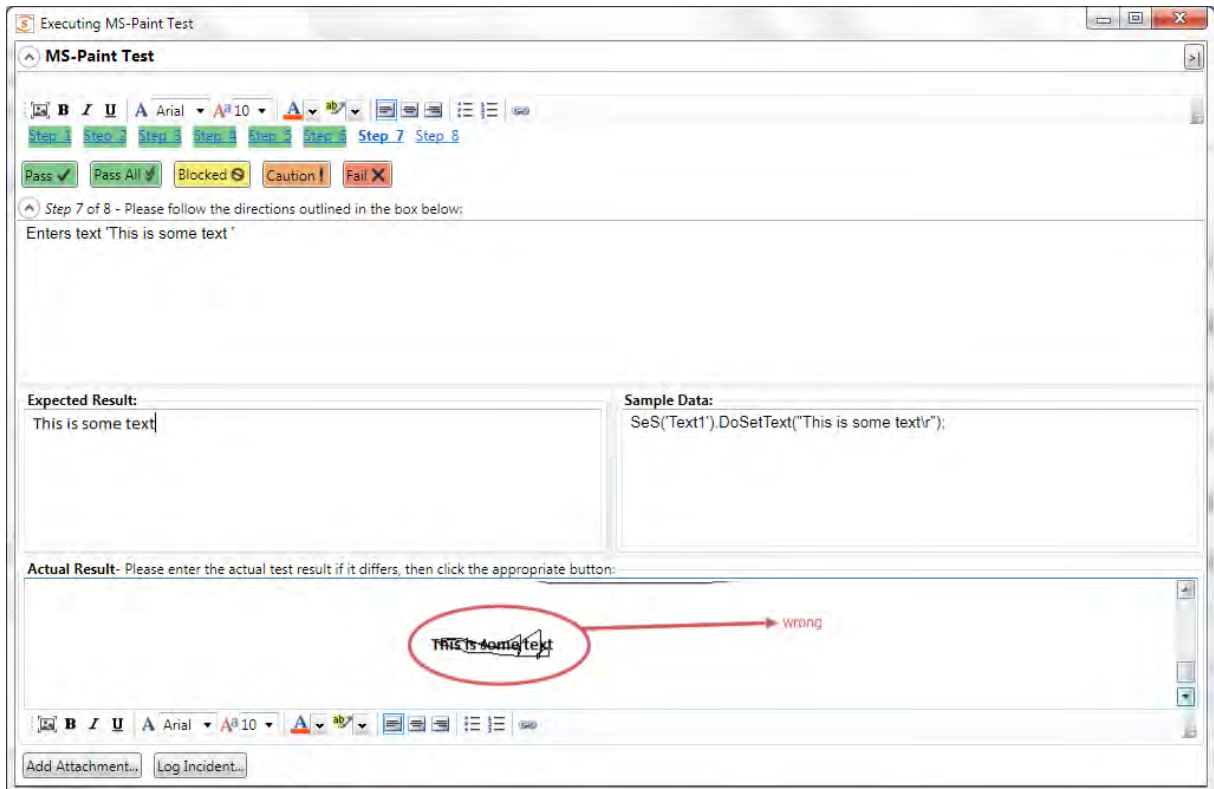
Once you have selected the rectangle, the drawing tools will display your selected image in the image editor:



You can now use the annotation tools to add labels, text and other items to explain the issue that you found:



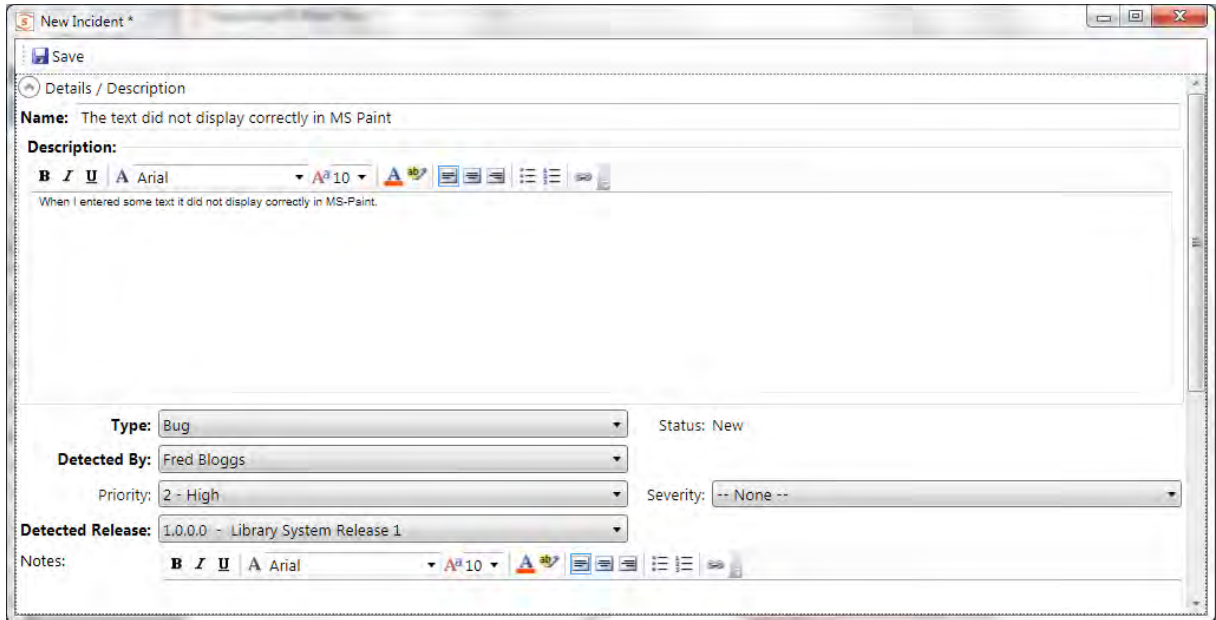
In the example above, we added a red ellipse, arrow and text to mark the issue that was seen in MS-Paint. Once you are happy with your image, click **Accept** and the image will be included in the test Actual Result:



Now we can [log an incident](#) that is associated with this test failure.

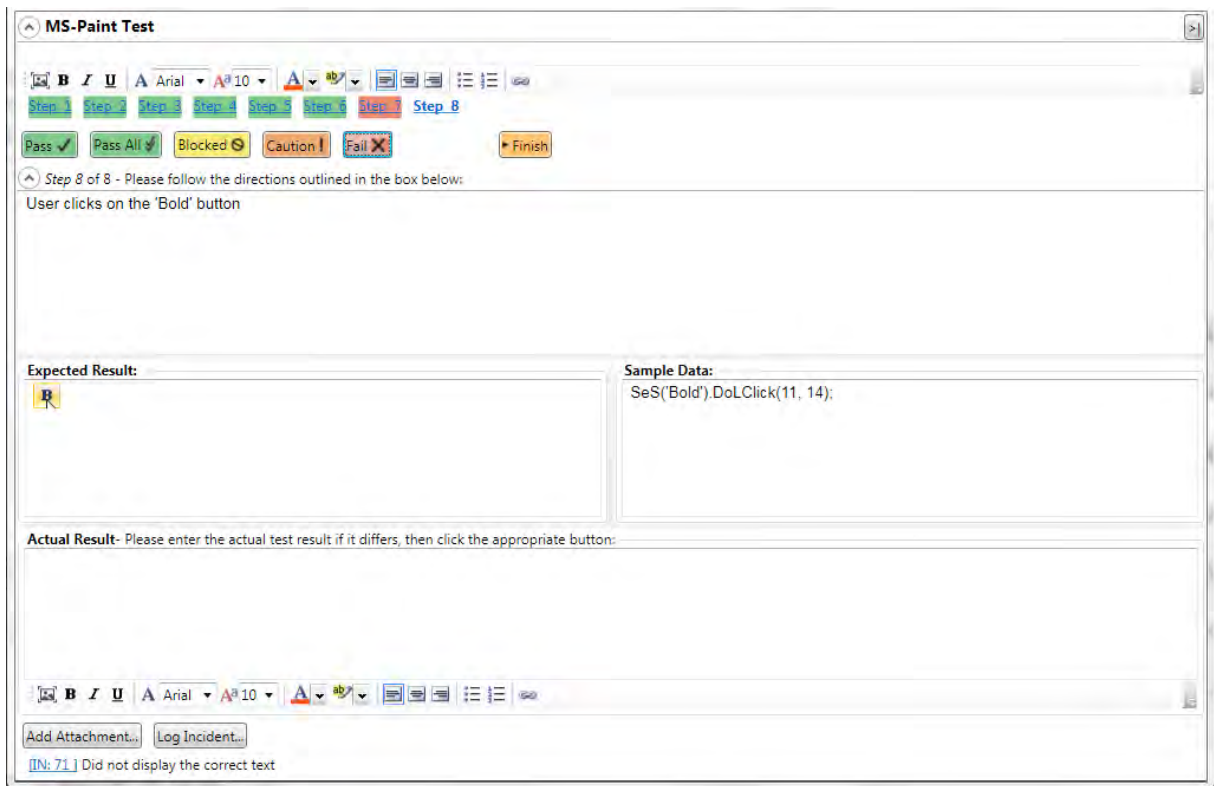
Step 4 - Logging the Incident / Defect

Click on the 'Log Incident' button to display the new incident entry screen:



Choose the **type** of incident, enter the **name**, **description**, **priority**, **detected release** and any other required fields as defined by the workflow in the project that you are connected to. Once you have entered in the various fields, click the '**Save**' icon in the top left.

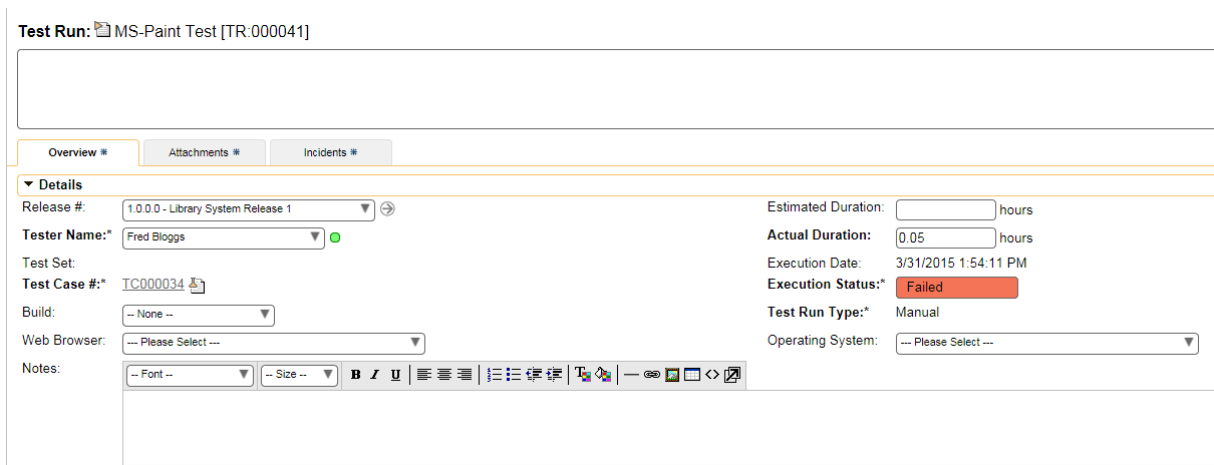
This will return you to the [manual execution](#) screen with the **Incident ID** [IN : xxx] and **name** displayed at the bottom. Now click on the '**Fail**' button and the test case will be marked as failed:



Finally, click on the **Finish** button and the results will be posted to [Spira](#).

Step 5 - Viewing the Results

Now to view the results in Spira, click on the [Spira Dashboard](#) item in the main Rapise [Test ribbon](#). Then under the 'My Created' test cases, click on the link for the test case you execute. That will bring up the test case in Spira. Now click on the 'Failed' hyperlink in Spira and the new test run will be displayed:



If you scroll down, you can see the individual test steps that were executed, with the associated actual result (including the captured screenshot):

ID	Test Step Description	Expected Result	Sample Data	Test # / Step #	Actual Result	Execution Status
RS000084	User starts up the MS-Paint Application	The application loads with a blank canvas		TC000034 / TS000045		Passed
RS000085	User clicks the main 'Application menu'		SeS('Application_menu').DoClick(42, 12);	TC000034 / TS000046		Passed
RS000086	User clicks the 'New' entry		SeS('New').DoClick(44, 13);	TC000034 / TS000047		Passed
RS000087	User clicks on 'Pencil'		SeS('Pencil').DoClick(15, 9);	TC000034 / TS000048		Passed
RS000088	User clicks the 'Text' tool		SeS('Text').DoClick(14, 16);	TC000034 / TS000049		Passed
RS000089	User clicks at 150, 250 in the canvas		SeS('Simulated').DoClick(150, 250);	TC000034 / TS000050		Passed
RS000090	Enters text 'This is some text'	This is some text	SeS('Text1').DoSetText('This is some text');	TC000034 / TS000051	Failed with the text being illegible. 	Failed
RS000091	User clicks on the 'Bold' button		SeS('Bold').DoClick(11, 14);	TC000034 / TS000052	> View Incidents	Not Run

If you click on the **Incidents** tab, you can also see the new incident that was logged, linked to this test run:

Overview #	Attachments #	Incidents #								
Display List of Incidents: > Refresh Apply Filter Clear Filter -- Showhide columns --										
Displaying 1 - 1 out of 1 incident(s) linked to this test run. Filtering results by Test Run #. (Clear Filters)										
✓	Name ▲▼	Type ▲▼	Status ▲▼	Priority ▲▼	Detected By ▲▼	Creation Date ▲▼	Owner ▲▼	Progress	ID ▲▼	Edit
<input type="checkbox"/>	Did not display the correct text	Incident	New	2 - High	Fred Bloggs	31-Mar-2015			IN.000071	Edit
Show 15 rows per page										
Displaying page 1 of 1										

Congratulations! You have now successfully executed a manual test using Rapise.

See Also

- [Manual Testing](#)
- [Manual Recording](#)

2.4.9.3 Semi-Manual Testing

Purpose

This is a useful technique when you want to have a predominantly manual test (executed by a tester) that has some steps that are automated by Rapise. These could be some of the initial setup tasks (e.g. logging in, starting the application) or just tasks that are well suited to automation.

Usage

Create your manual test either using the [recorder](#) or the [manual test editor](#). You can also just open up a test already created in [Spira](#).

Next, inside Rapise, create a [test scenario](#) (function) that contains the necessary login. In this example we shall simply automate the launching of MS-Paint.

Create a function in the `MyTest.user.js` file with the following code:

```
function LaunchMsPaint()
```


```
{
    Global.DoLaunch( 'C:\\Windows\\system32\\mspaint.exe' );
}
```

Now go to the **Manual Steps** section of Rapise by clicking on the **Manual Steps** icon in the test ribbon:

Inside the first test step (for example), change the **Description** to the following:

```
@LaunchMsPaint();
//User starts up the MS-Paint Application
```

This will be contained within the actual test step itself:

StepId	Description	Expected Result
Step 1 [TS:45]	@LaunchMsPaint(); //User starts up the MS-Paint Application	The application loads with a blank canvas
Step 2 [TS:46]	User clicks the main 'Application menu'	

Now, when you execute the test (using the normal **Execute** button on the main [Test ribbon](#) (**not** the Execute Manual icon on the [Manual Steps ribbon](#)) what happens is that Rapise will execute the main `Test()` function that contains:

```
//##### Script Steps #####

function Test()
{
    Global.DoPlayManual();
}

g_load_libraries=["Generic"];
```

this instructs Rapise to use the [manual playback](#) system. However when it gets to the first step, it will see the ampersand symbol (@) that denotes that this is actually an automated scenario and then call the following code:

```
//User starts up the MS-Paint Application
LaunchMsPaint();
```

Once the scenario has completed, Rapise will then return back to the manual test playback.

See Also

- [Manual Playback](#)
- [Test Scenarios](#)

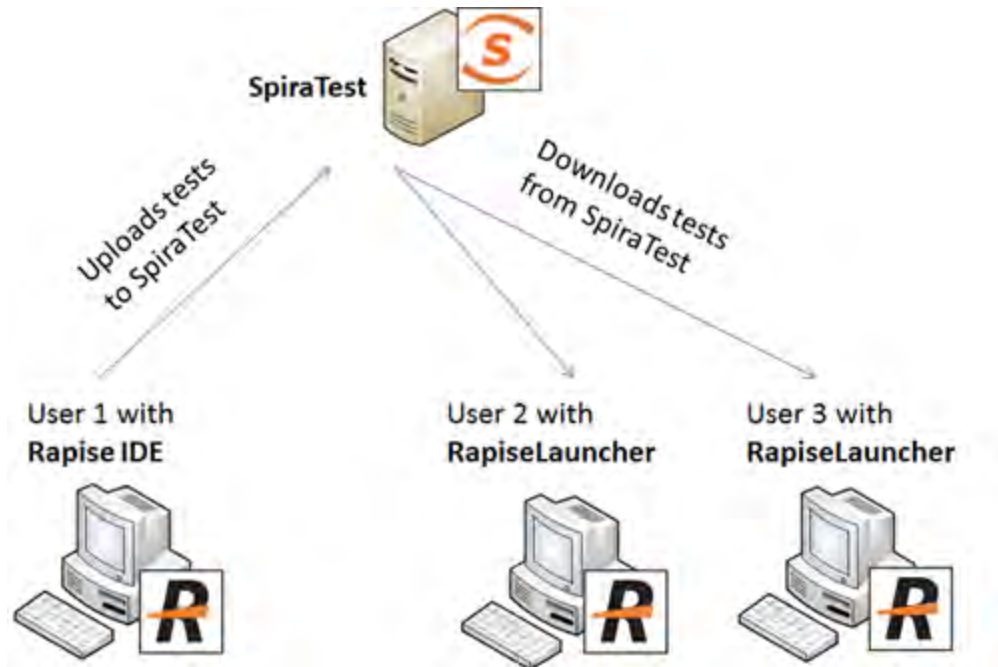
2.4.10 SpiraTest Integration

For more details on using SpiraTest with Rapise, please refer to the separate "[Using SpiraTest with Rapise](#)" guide.

Overview

SpiraTest is a web-based quality assurance and **test management system** with integrated release scheduling and defect tracking. SpiraTest includes the ability to execute manual tests, record the results and log any associated defects. *Note: **SpiraTeam** is an integrated **ALM Suite** that includes SpiraTest as part of its functionality, so wherever you see references to SpiraTest in this section, it applies equally to SpiraTeam.*

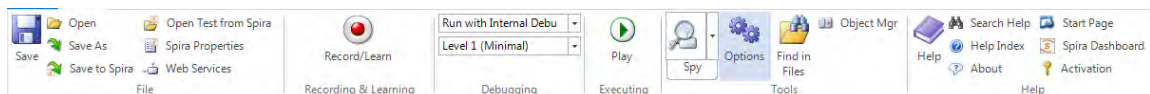
When you use SpiraTest with Rapise you get the ability to store your Rapise automated tests inside the central SpiraTest repository with full version control and test scheduling capabilities:



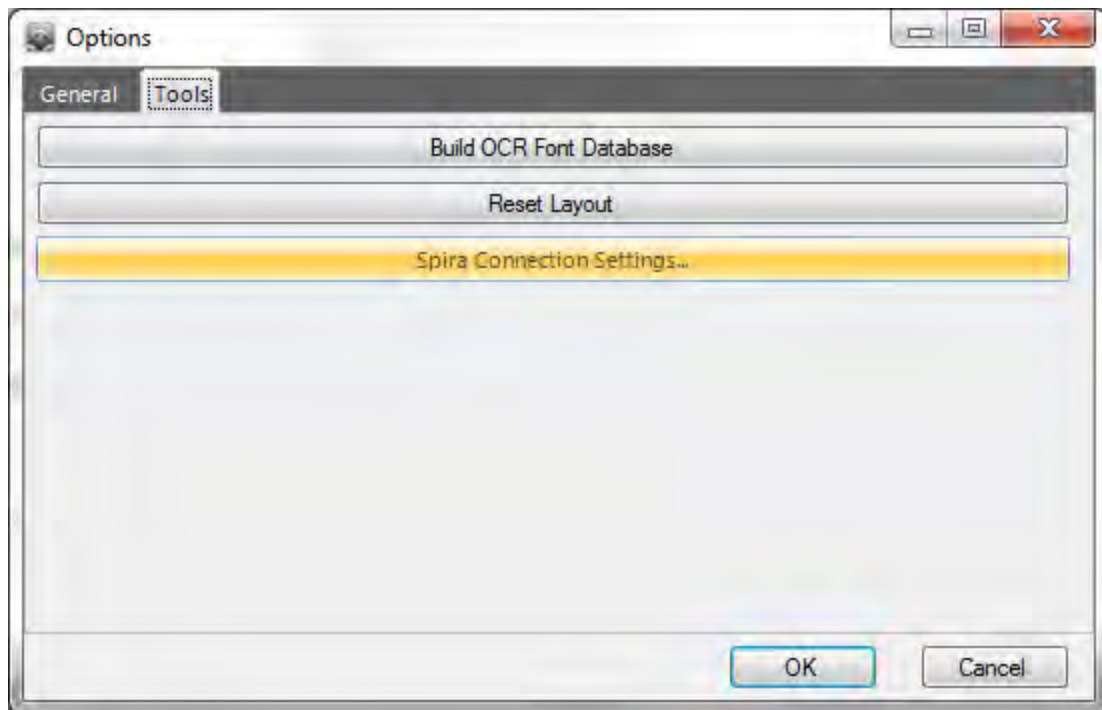
You can record and create your test cases using Rapise, upload them to SpiraTest and then schedule the tests to be executed on multiple remote computers to execute the tests immediately or according to a predefined schedule. The results are then reported back to SpiraTest where they are archived as part of the project. Also the test results can be used to update requirements' **test coverage** and other key metrics in real-time.

Connecting to SpiraTest

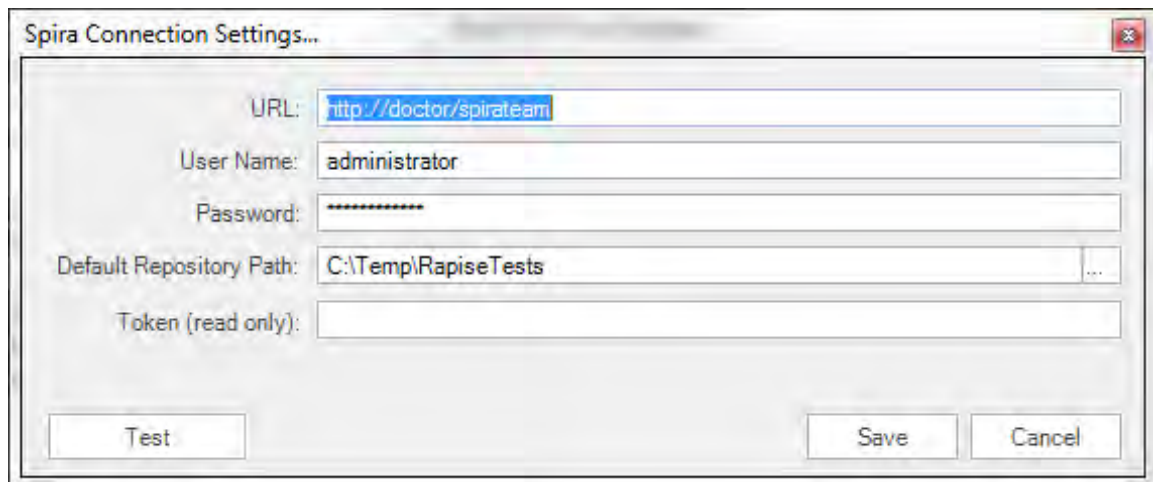
The first thing you need to do is to configure the connection to SpiraTest. To do this, click on the Options button in the Tools section of the Rapise Test ribbon:



This will bring up the Options dialog box. Click on the Tools tab to bring up the settings related to the various Tools:



Click on the "Spira Connection Settings" button to bring up the dialog box that lets you configure the connection to SpiraTest:



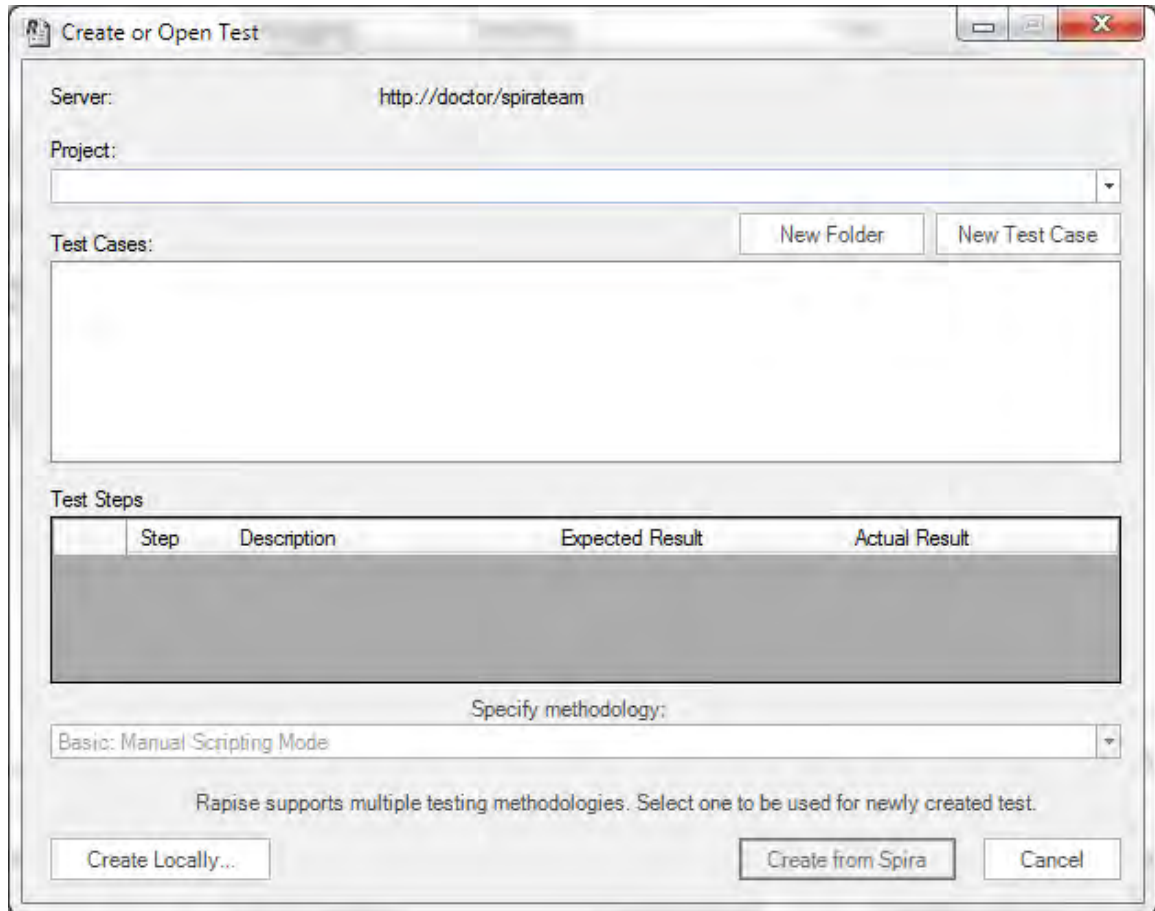
Enter the URL, login and password that you use to connect to SpiraTest and then click the "Test" button to verify that the connection information is correct.

- The "**Default Repository Path**" is a folder that used to store local copies of the non-absolute repositories.
- The **Token** is the identifier of the current machine that Rapise is installed on. It needs to match the 'Token' name of the corresponding 'Automation Host' in SpiraTest.

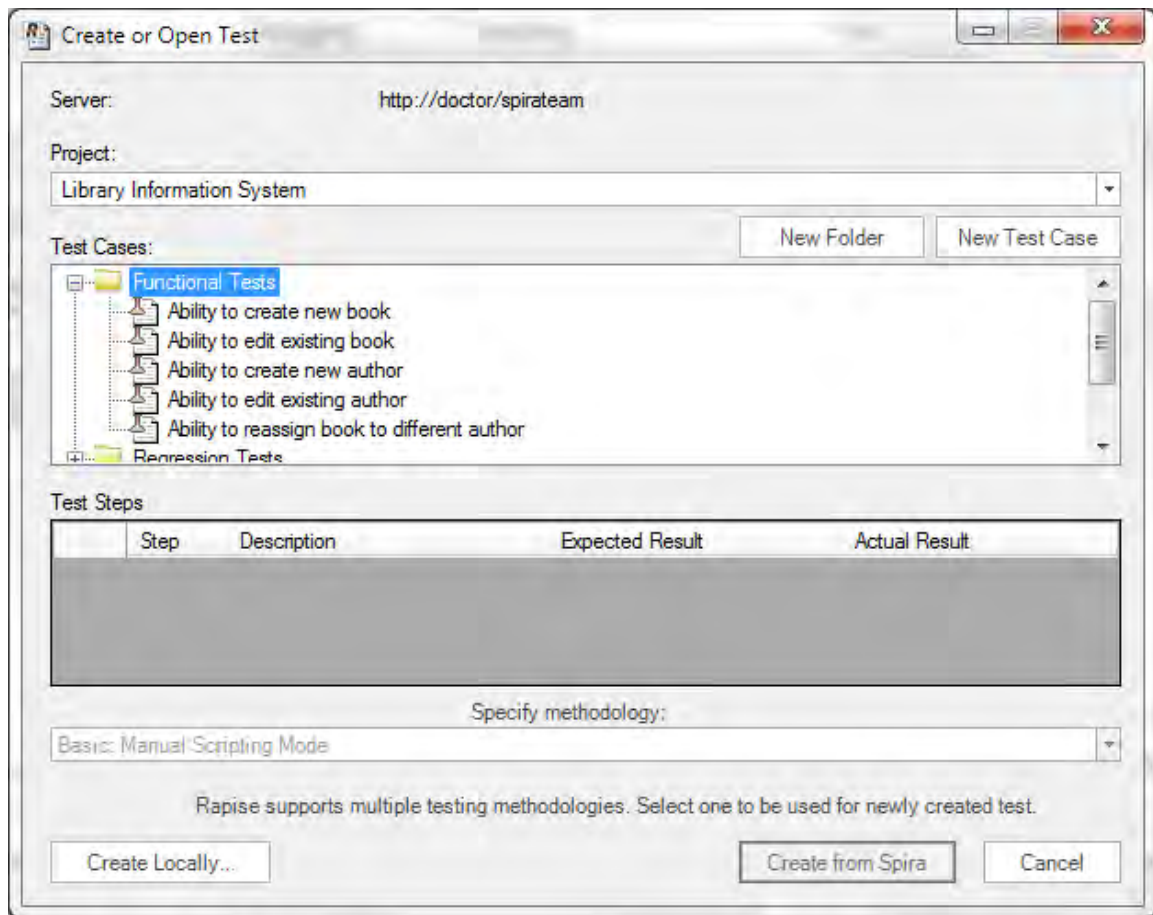
You need to be running SpiraTest / SpiraTeam v4.0 or later to use the integration with Rapise.

Creating a Rapise test from a SpiraTest test case

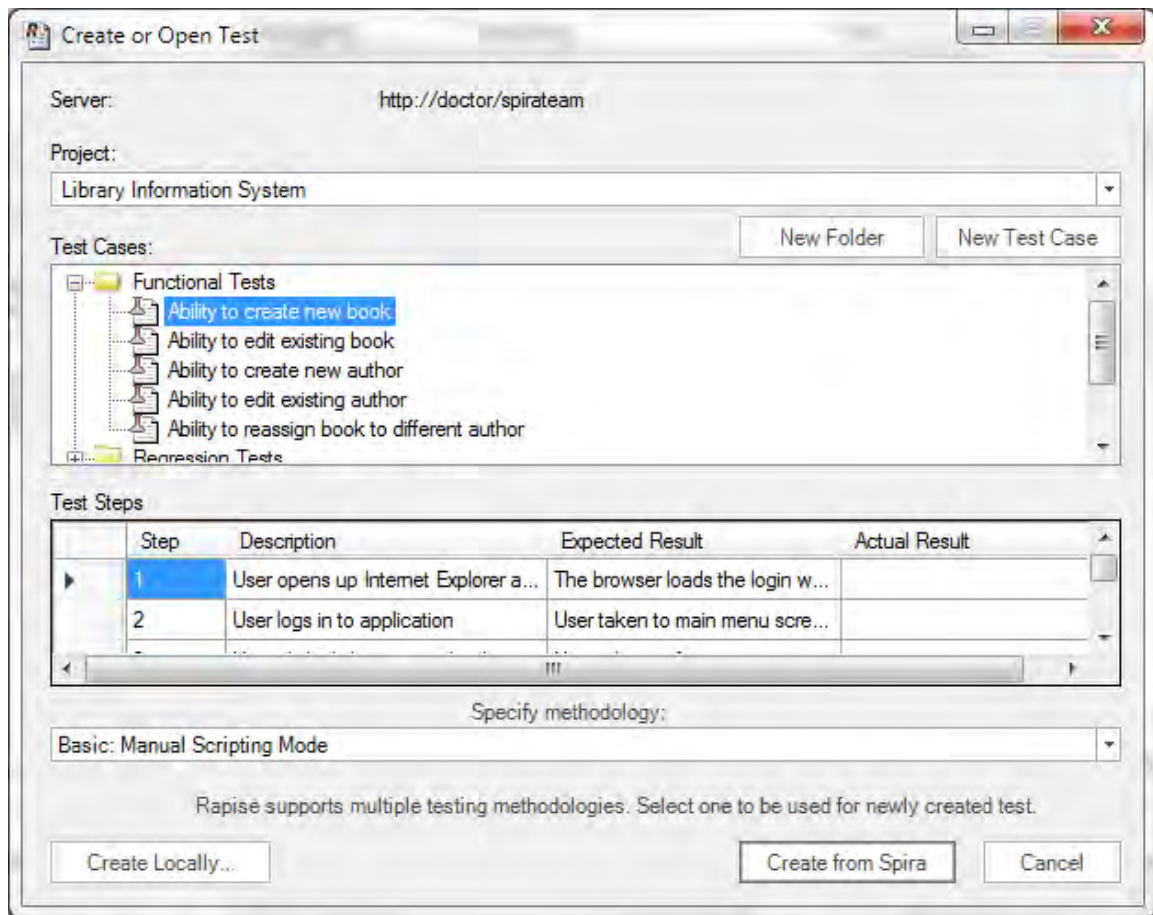
To create a new Rapise test based on the manual test steps already defined in a SpiraTest test case, click on the **File** tab in the top left of the application and from the File menu, choose the option **New Test - Create a New Test**. This will bring up the following dialog box:



1. Select the project that has our new test case. The list of test case folders will be displayed.
2. You can create a new folder by clicking the **New Folder** button
3. Expand the folders until you can see the desired test case:



Now either create a new test case by using the **New Test Case** button or simply click on a test case that you previously created in Spira. In either case you will see its test steps displayed underneath (if there are any):



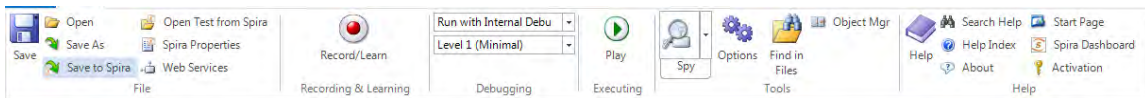
Once you are satisfied that this is the correct test case, choose the desired methodology (Mobile or Standard Manual Scripting) and then click the **Create from Spira** button. Rapise will now create a local test folder and files based on this Spira test case.

Saving a Test to SpiraTest

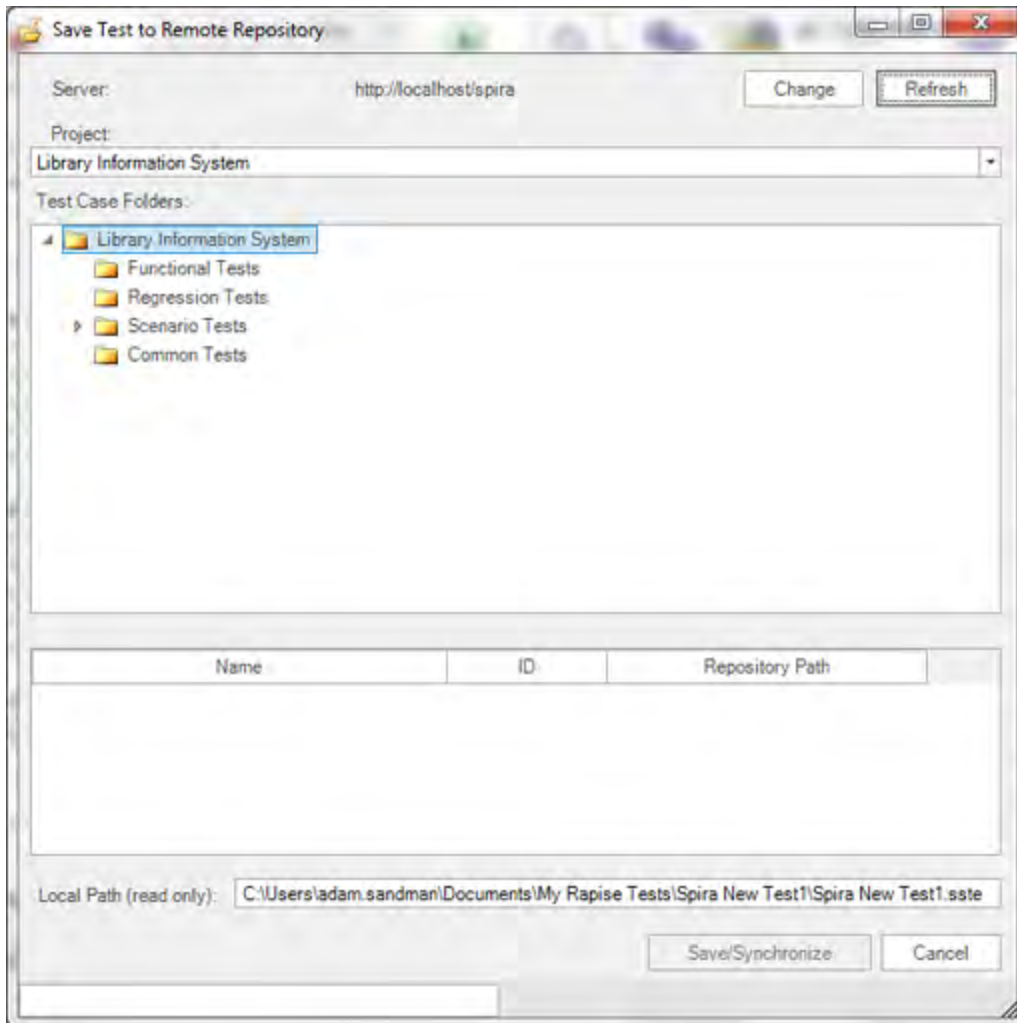
To save the a Rapise test into SpiraTest you need to make sure that the following has been setup first:

1. You have a project created in SpiraTest to store the Rapise tests in. The Rapise tests will be stored in a repository located inside the **Planning > Documents** section of the project.
2. The user you will be connecting to SpiraTest with has the permissions to **create new document folders**.
3. You have created the Test Case in SpiraTest that the Rapise test will be associated with. This is important because without being associated to a SpiraTest Test Case, you will not be able to schedule and execute the tests using SpiraTest and RapiseLauncher.
4. You have created an AutomationEngine in SpiraTest that has the token name "Rapise". This will be used to identify Rapise automation scripts inside SpiraTest.

Once you have setup SpiraTest accordingly, click on the **Save to Spira** icon in the File section of the Rapise Test ribbon:

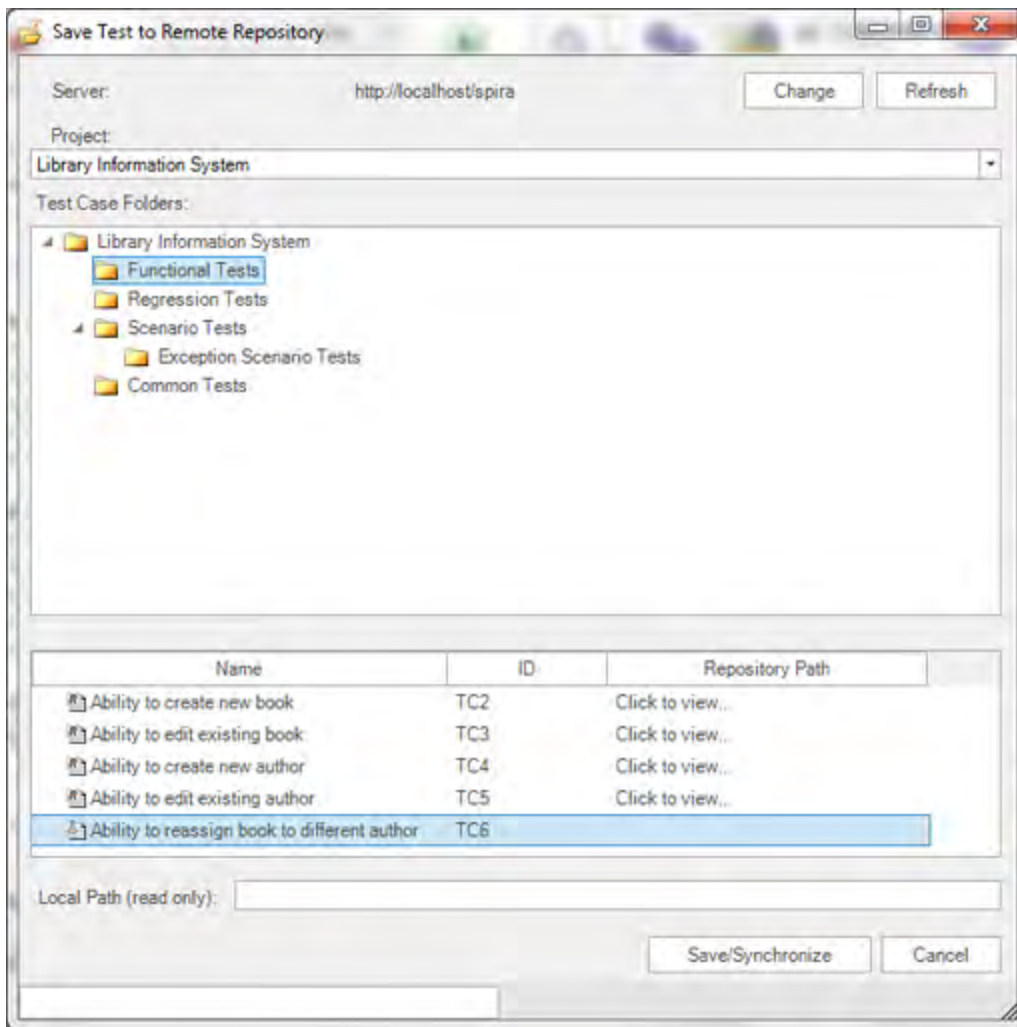


That will bring up the Save to SpiraTest dialog box:






The first thing you will need to do is choose the SpiraTest project from the dropdown list. This will then update the list of test case folders displayed in the top pane of the dialog box.

Once you have chosen the desired project, you need to expand the test case folders in SpiraTest and choose the existing Test Case that you want to attach the Rapise test to:



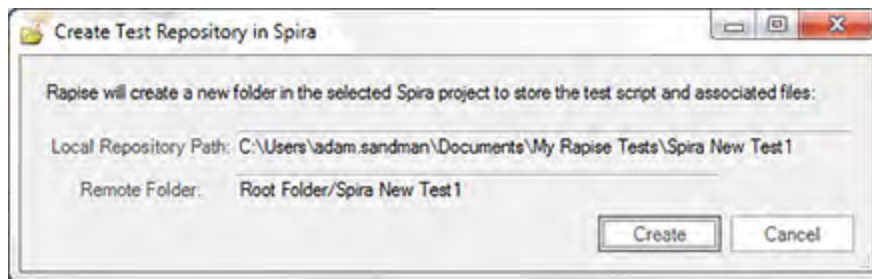
When you expand the folders to display the list of contained test cases, it will display the name and ID of the test case together with an icon that indicates the type of test case:

1.  - Manual test case that has no automation script attached. (Repository Path will also be blank)
2.  - Test case that has an existing Rapise test attached.
3.  - Test case that has a non-Rapise automation script attached.

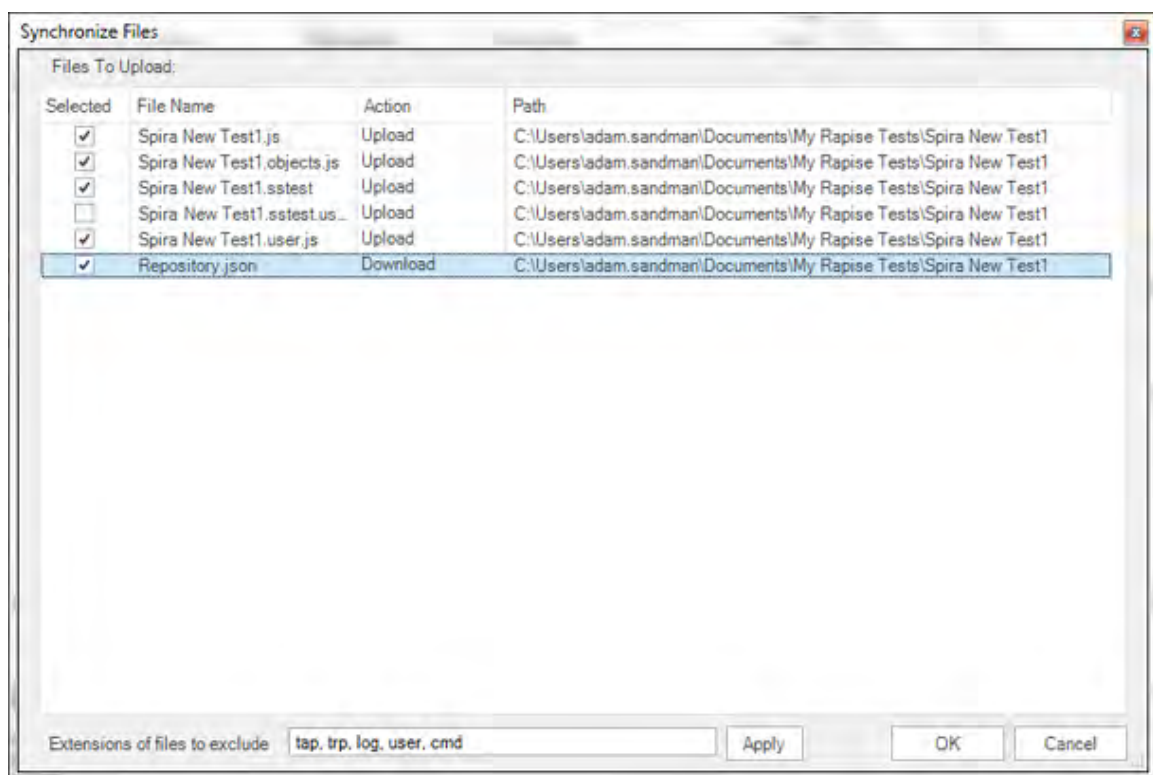
If you are adding a new Rapise test, choose a test case that has icon (1) and doesn't have an associated Repository path. If you are updating an existing test, choose a test case that has icon (2) and the matching Repository path.

Note: test cases with icon type (3) cannot be used with Rapise for adding or updating scripts.

Once you have chosen the appropriate test case, click the [Save/Synchronize] button. That will bring up the **Create New Repository** dialog box:

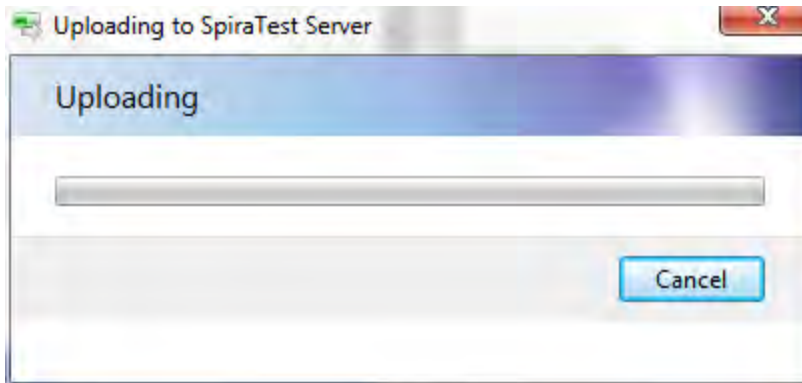


This dialog box will let you know where the Rapise script will be stored in SpiraTest and also the location of the repository local directory used to store the 'working copy' of the Rapise test. Click [Create] to confirm.



A dialog box will be displayed that lists all the files in the local working directory and shows which ones will be checked-in to SpiraTest. The system will filter out result and report files that shouldn't be uploaded. You can change which files are filtered out and also selectively include/exclude files. Once you are happy with the list of files being checked-in, click the [OK] button:

The system will display the message that it's saving the files to the server:



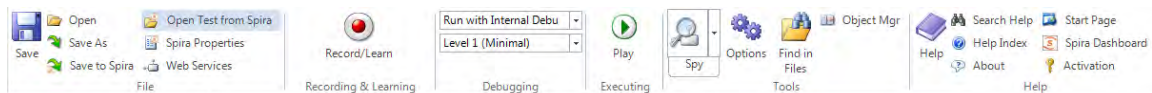
If an error occurs during the save, a message box will be displayed, otherwise the dialog box will simply close.

Opening a Test from SpiraTest

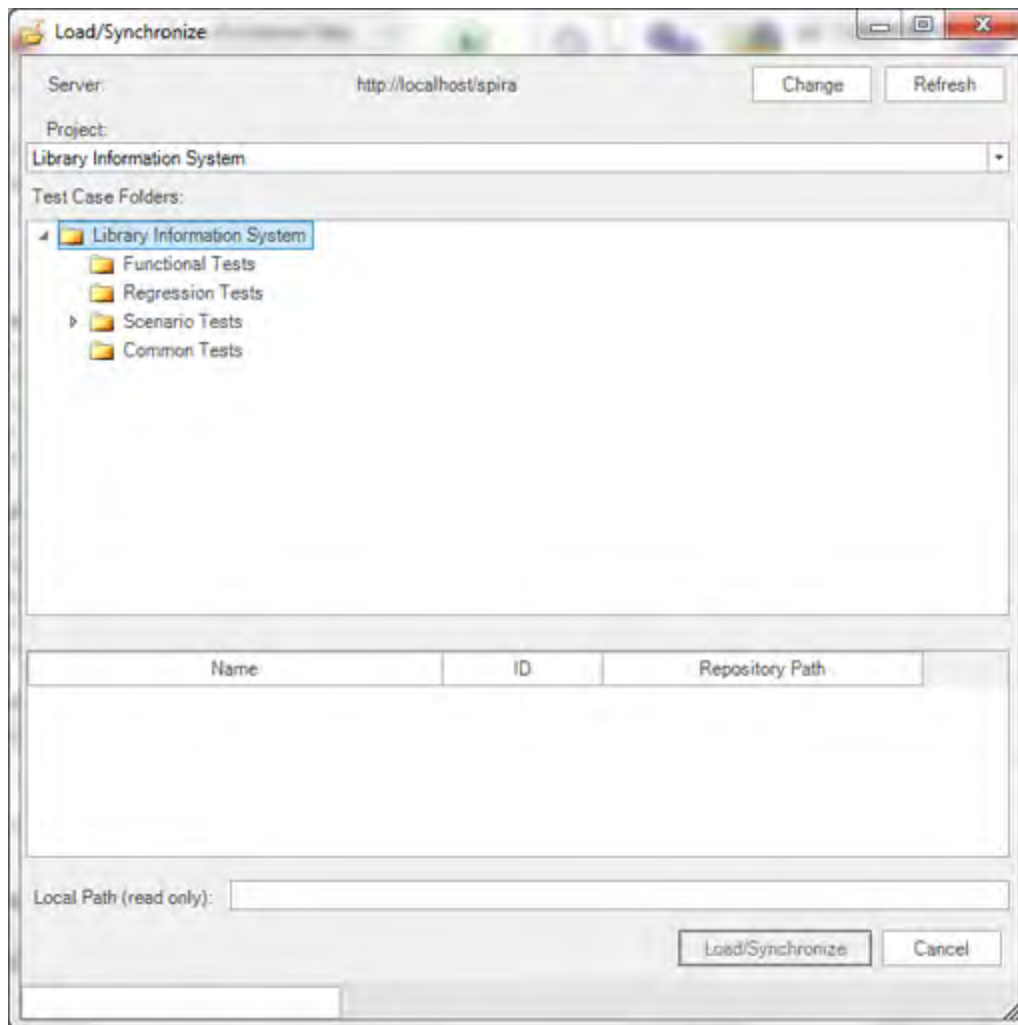
To open a Rapise test from SpiraTest you need to make sure that the following has been setup first:

1. You have already configured the connection to the SpiraTest service (see the instructions at the top of this page).
2. The user you will be connecting to SpiraTest with has the permission to view the project that the tests are being stored in.

Once you have setup SpiraTest accordingly, click on the **Open Test from Spira** icon in the File section of the Rapise Test ribbon:

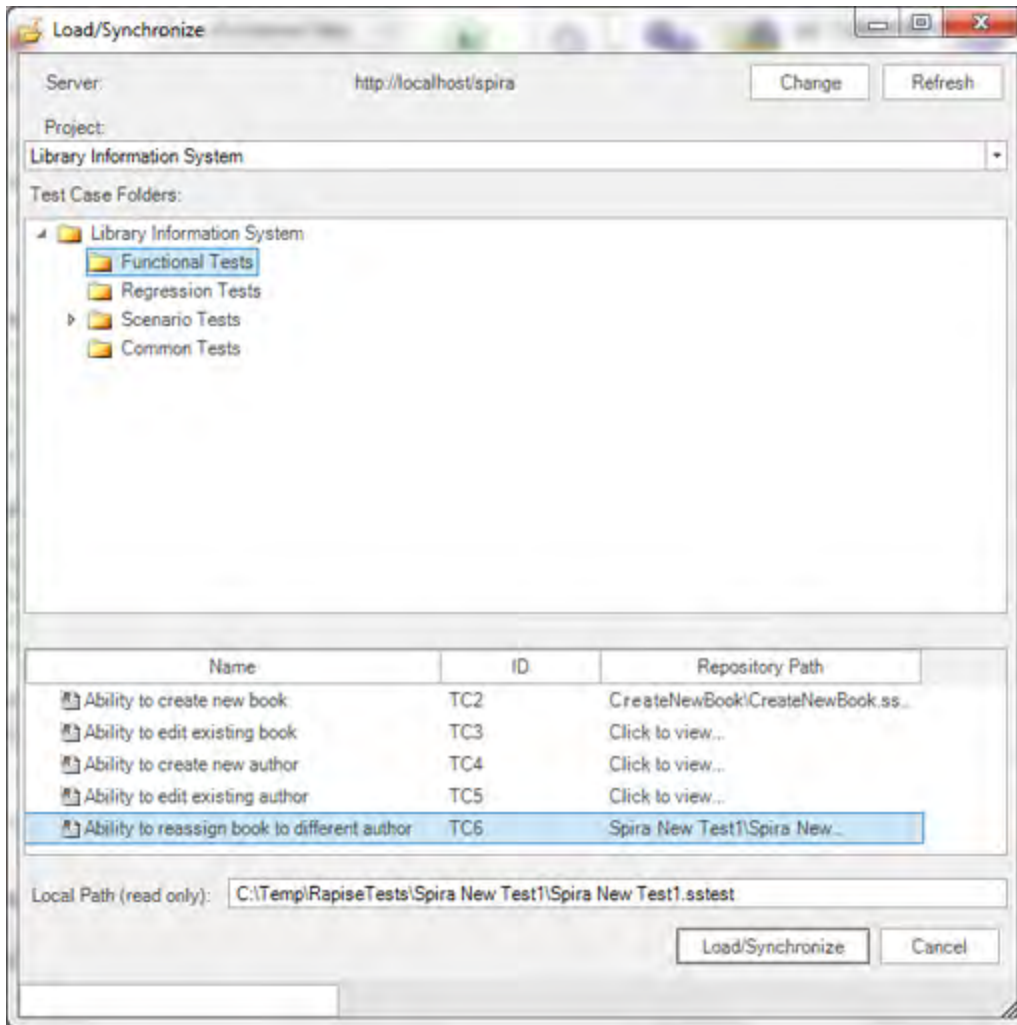


That will bring up the Open Test from SpiraTest dialog box:



The first thing you will need to do is choose the SpiraTest project from the dropdown list. Once you have done that, the system will display the list of test case folders in this project.

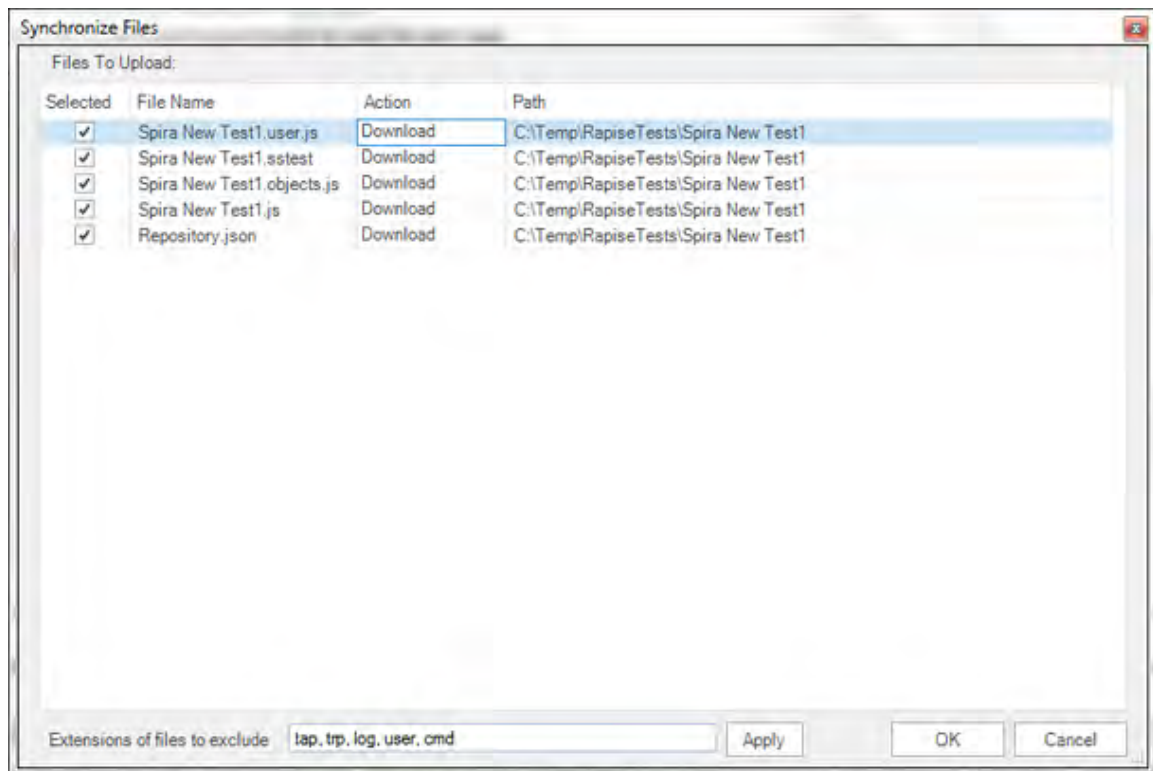
Once you have chosen the project, you need to expand the test case folders in SpiraTest and choose the existing Test Case that you want to open:



When you expand the folders to display the list of contained test cases, it will display the name of the associated Rapise test script associated with it (to the right). Choose a test case that has the matching Rapise test case listed to the right of it (in the Repository Path column).

Note: Only test cases that have an attached Rapise test script will be displayed in this view.

Once you have chosen the appropriate test case, click the [Load/Synchronize] button to load the test case:

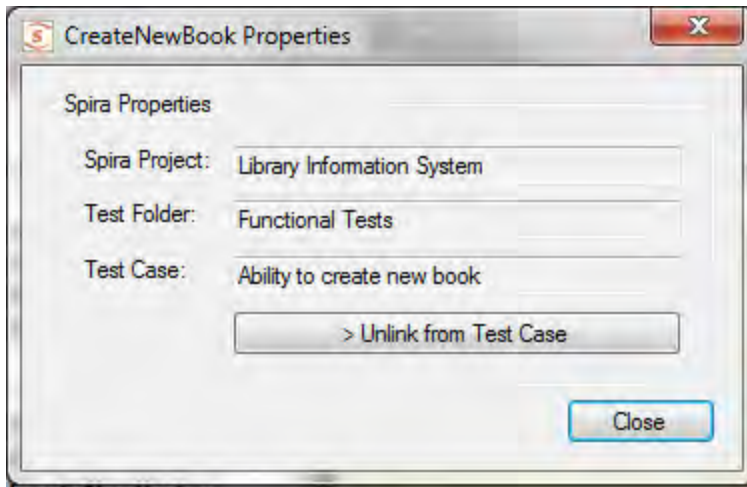


A dialog box will be displayed that lists all the files on the server which will be downloaded from SpiraTest. You can change which files are to be downloaded. Once you are happy with the list of files being checked-out, click the [OK] button:

The system will display the message that it's downloading the files from the server. If an error occurs during the download, a message box will be displayed, otherwise the dialog box will simply close.

Viewing the SpiraTest Properties of a Test

To see which SpiraTest **project** and **test case** the current Rapise test is associated with, click on the **Spira Properties** icon in the Tools section of the Rapise Test ribbon. This will bring up the Spira Properties dialog box:



This will display the name of the current Rapise test together with the name of the SpiraTest project, test folder and test case that this test is associated with.

If you would to save the current Rapise test into a new SpiraTest project or if you want to save it against a new test case in the same project, you must first unlink the test. To do this click on the **Unlink from Test Case** button. This will tell Rapise to remove the stored SpiraTest information from the .sstest file so that it can be associated with a new project and/or test case in SpiraTest.

Warning: This operation cannot be undone so please make sure you really want to unlink the current test.

Using the Spira Dashboard

In addition to using the ribbon options described in this page, you can interact with SpiraTest using the [Spira Dashboard](#) that is available from the [Start Page](#). This provides a convenient way of interacting with SpiraTest, allowing you to quickly create, save and open test cases from SpiraTest.

Using RapiseLauncher

RapiseLauncher is a separate application that installs with Rapise. It allows you to remotely schedule the automated tests in SpiraTest and have RapiseLauncher automatically invoke the tests according to the schedule. Details on using SpiraTest with RapiseLauncher to remotely schedule and execute tests is described in the separate "**Using SpiraTest with Rapise**" guide. This guide can be found in the Rapise program files folder. Click on Start > Programs > Inflectra > Rapise in Windows and you will see the shortcut for the guide.

2.4.11 Checkpoints

Purpose

A **Checkpoint** is defined by two things: (1) a location in the test execution path and (2) a subset of AUT state. Each time the checkpoint executes, the AUT state is compared to a predefined value. Discrepancies are noted, and may show a regression in program behavior.

Usage

A checkpoint can be added in two ways:

- (1) during recording, with the [Verify Object Properties dialog](#), or
- (2) by manually adding an [Assertion](#) to the test script.

See Also

- [Recording](#)

2.4.12 Tests and Sub-Tests

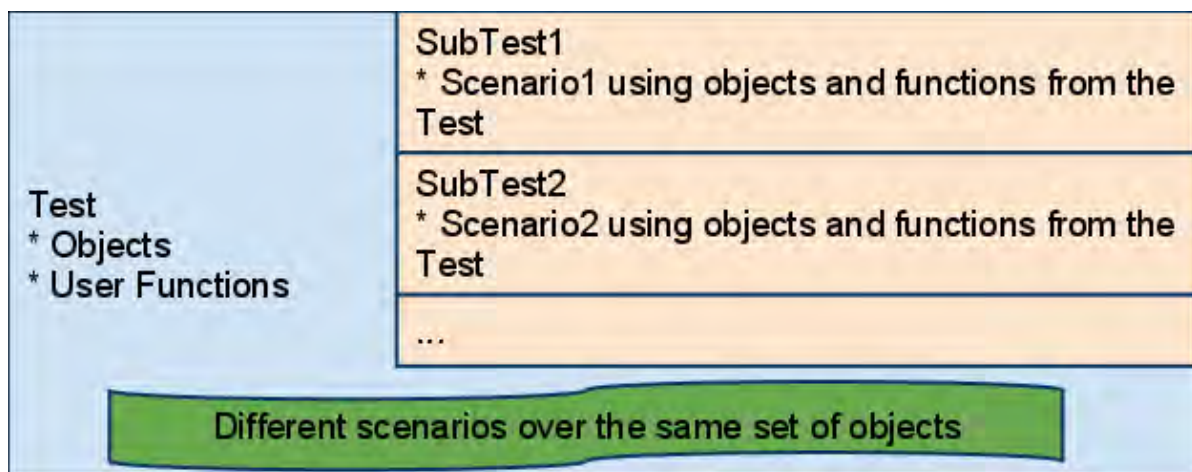
The concept of Sub-Test is an organic way to organize the whole work with Tests in organic way. By having sub-tests one may meet one of the following goals:

1. Create multiple test scenarios working with same set of Objects and Functions.
2. Organize different test scenarios into a single workspace.
3. Use Sub-test to make cross-browser tests

We will consider each of described goals separately. The test containing the sub-test(s) we will call **base** or **parent** test.

Make Multiple Test Scenarios with the Same Set of Objects

In this case 'parent' test contains all learned objects and user-defined functions.



For example, the parent test may have objects "User Name", "Password", "Sign On". And function

```
function Login(username, password)
```

```
{
  ...
}
```

SubTest1 may be used to check login with valid Credentials, **SubTest1.js** looks like:

```
function Test()
{
  Login("validuser", "validpassword");
  // Now check that login is successfull
  Tester.Assert("Login leads to welcome message: ",
Global.DoWaitFor('Welcome_User'));
}
```

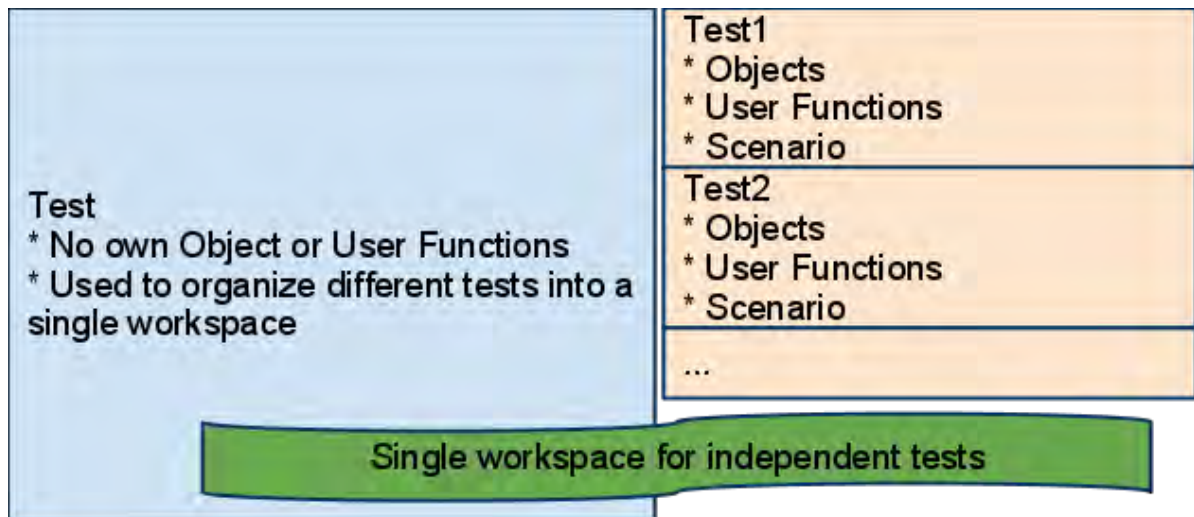
SubTest2 may be used to check login with invalid Credentials (i.e. it is a fail-test). **SubTest2.js** looks like:

```
function Test()
{
  Login("invaliduser", "invvalidpassword");
  // Now check that login is successfull
  Tester.Assert("Login leads to invalid user object: ",
Global.DoWaitFor('Invalid_User'));
}
```

Function `Login` and objects `welcome_User` and `Invalid_User` are defined in `Test`. The subtests are just implementing various scenarios for the same set of objects.

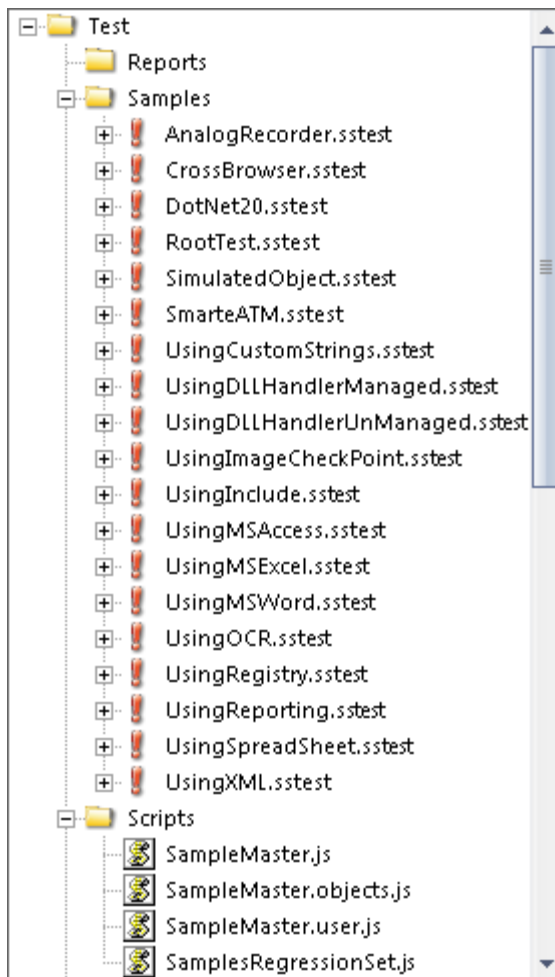
Organize different tests into a single workspace.

Each test has its own objects, functions and scenarios.



The usage of such an approach is well demonstrated by example. We created a test called

'SampleMaster' and put all Rapise samples into it by using **Add File** context menu in the the [Test Tree](#) dialog. Finally the Files tree looks like:



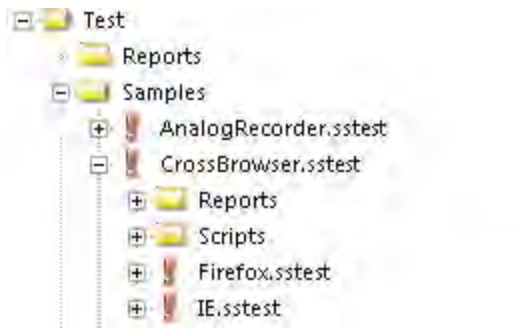
All tests in this tree are independent. We use the Sample Master to manage all the tests from a single environment.

Using Sub-Tests for a Cross-browser testing

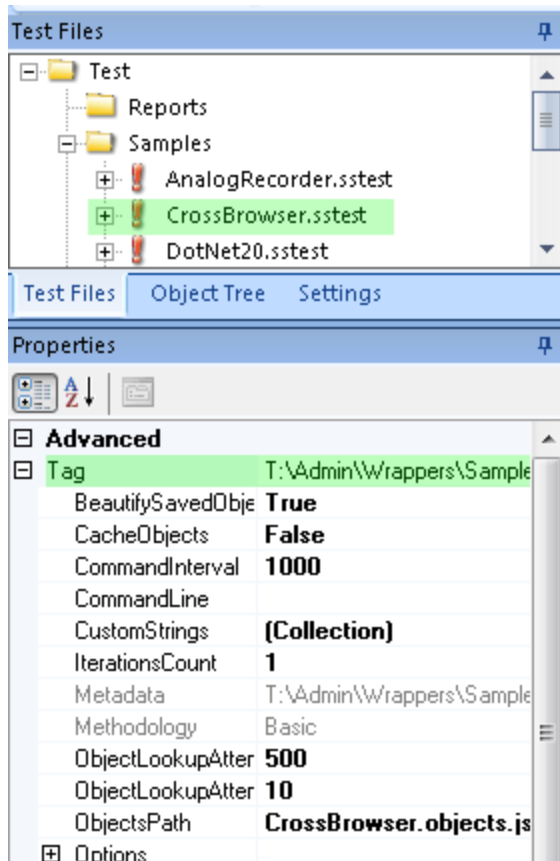
See '[Cross Browser](#)'.

Sub-Test Features

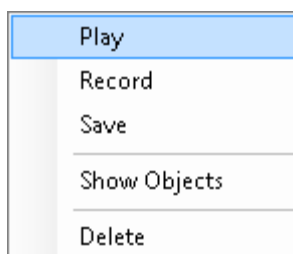
- Sub-test may have its own nested sub-tests. For example, in the parent test contains reference to 'CrossBrowser' subtest having 'IE' and 'Firefox' subtests inside:



- Sub-test options are available from the 'Tag' property in the 'Properties window':



- The following options are available in the context menu fore each of the sub-tests:



- **Play:** Execute selected sub-test
- **Record:** Start recording into selected sub-test
- **Save:** Save options of a sub-test
- **Show Objects:** Show objects form a sub-test in the Object Tree
- **Delete:** Remove reference to a sub-test from its parent test

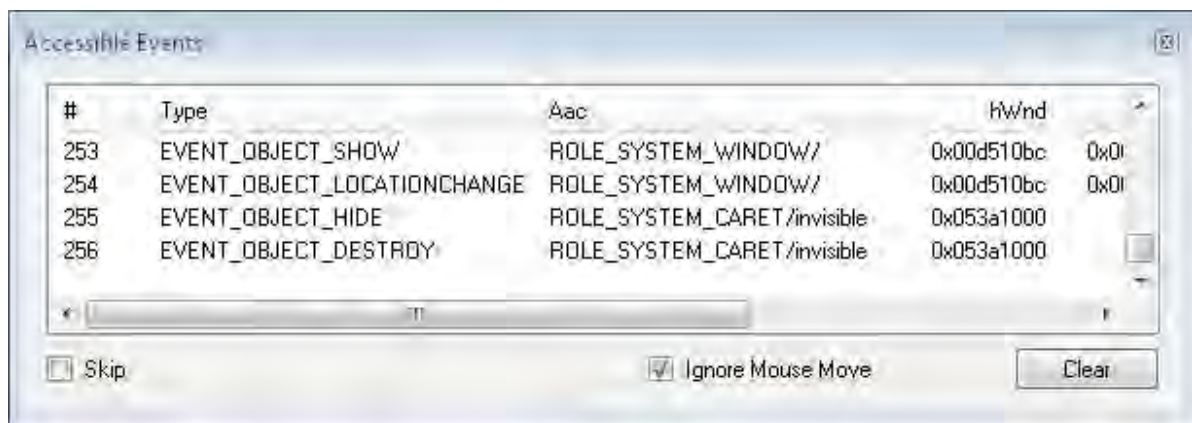
2.5 Dialogs, Views, and Menus

This section details the Rapise GUI. Each subsection describes the function of a particular Dialog, View, or Menu. The purpose and consequences of all buttons, options, lists, and check boxes are listed.

2.5.1 Accessible Events Dialog

This dialog was available in an older version of Rapise and has now been deprecated.

Screenshot



Purpose

To display **Microsoft Active Accessibility** event notifications.

How to Open

Press the **Monitor Events** button in the [SeS Spy Dialog](#).

Widgets

- **Skip:** While the **Skip** option is selected, the Accessible Events Dialog stops printing event

notifications. The number of notifications skipped is printed to the right of the word Skip:

Skip (195)

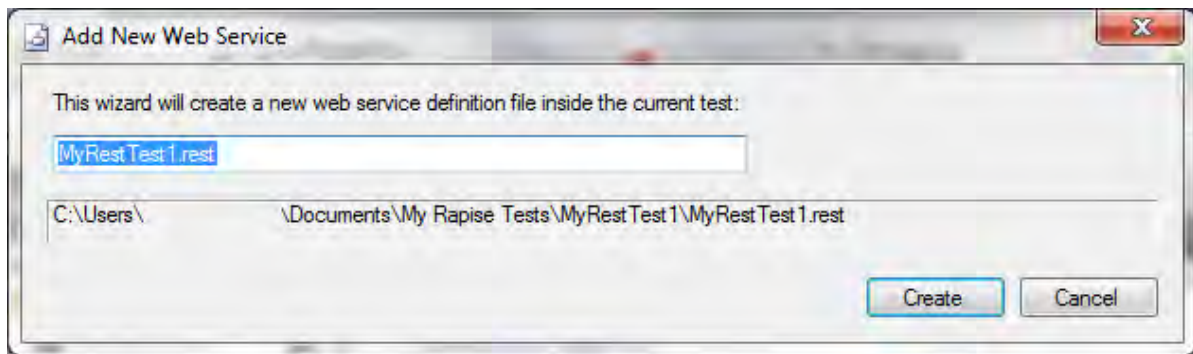
- **Ignore Mouse Move**: Do not print notifications of mouse movement.
- **Clear**: Clear the Accessible Events dialog.

See Also

- Microsoft Active Accessibility is described here <http://msdn.microsoft.com/en-us/magazine/cc301312.aspx>

2.5.2 Add Web Service Dialog

Screenshot



Purpose

Adds a new REST web service to your Rapise test. It adds the web service as a .rest file that is added to the "Services" folder of the "Test Files" section:

How to Open

Click on the "Web Services" icon in the Rapise [Test](#) ribbon tab.

2.5.3 Create New Test Dialog

Purpose

Create a new Rapise test. You have the option of either connecting to [Spira](#) and storing the new test in our central test management system or simply saving the new test locally.

How to Open

Simply click on the File tab of Rapise and click New Test (Create New Test) on the [File menu](#).

(a) Creating in Spira

By default Rapise will ask you to save the new test into the Spira test management system:

Server:

Project:

Test Cases:

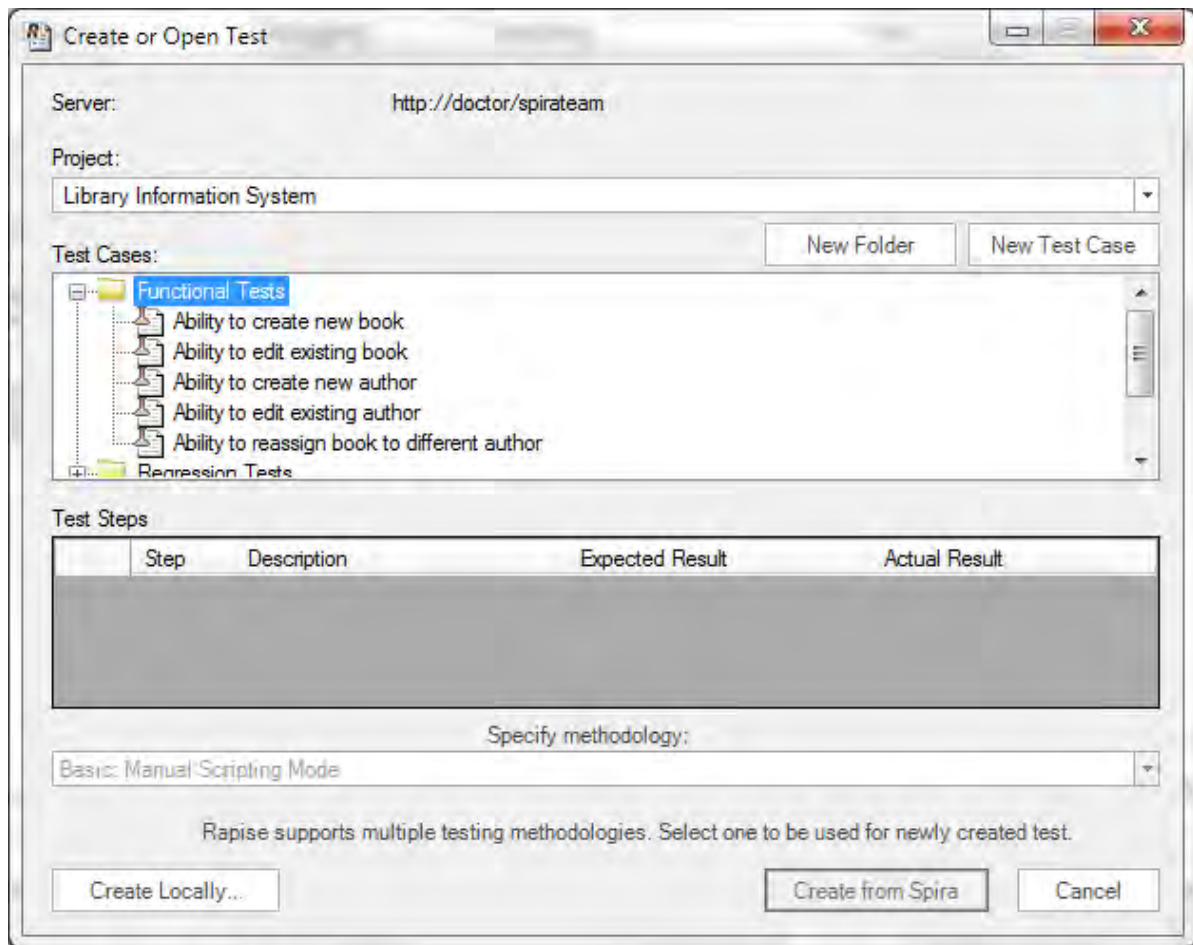
Test Steps

Step	Description	Expected Result	Actual Result

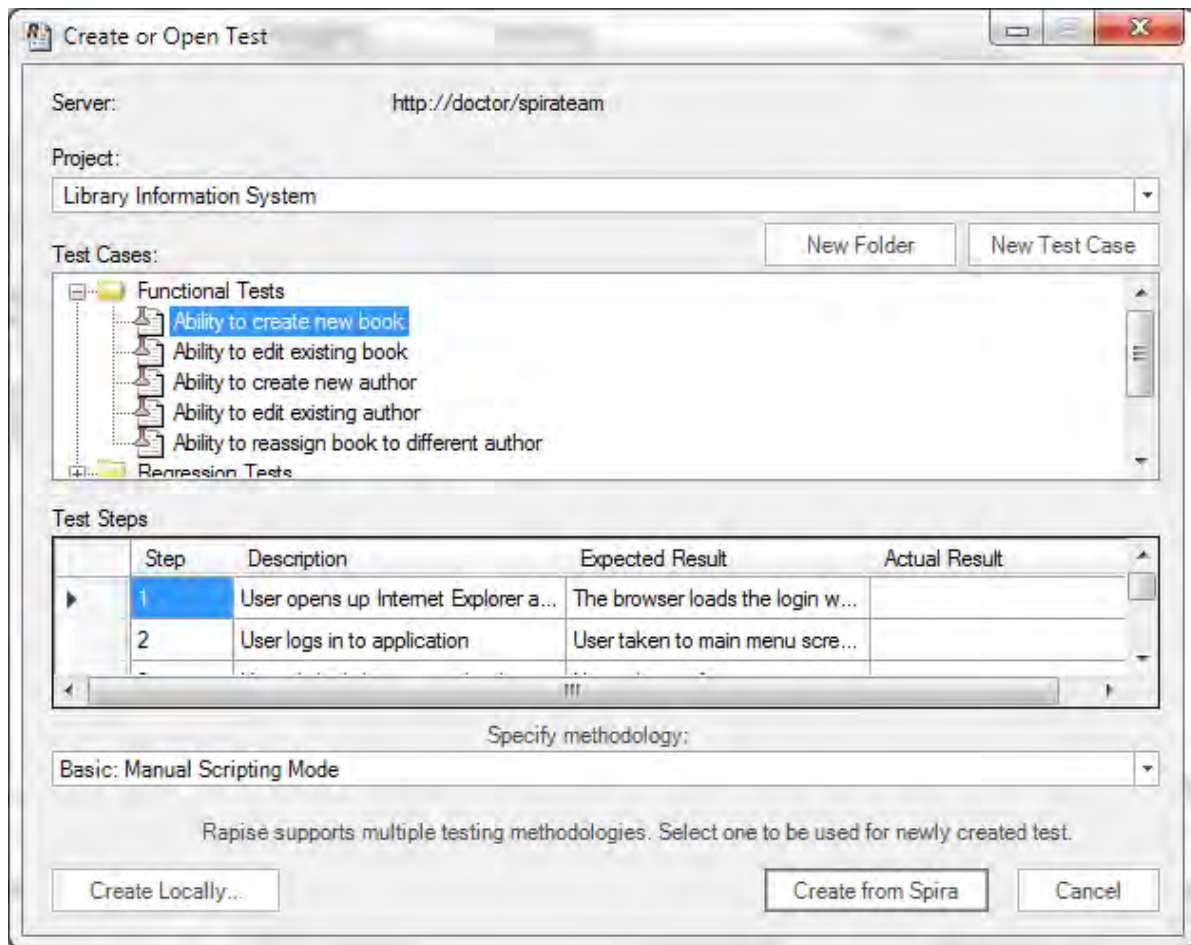
Specify methodology:

Rapise supports multiple testing methodologies. Select one to be used for newly created test.

Assuming that you have already [configured the connection to Spira](#), first you need to select the project in Spira. That will then display the test case folders and test cases in Spira:

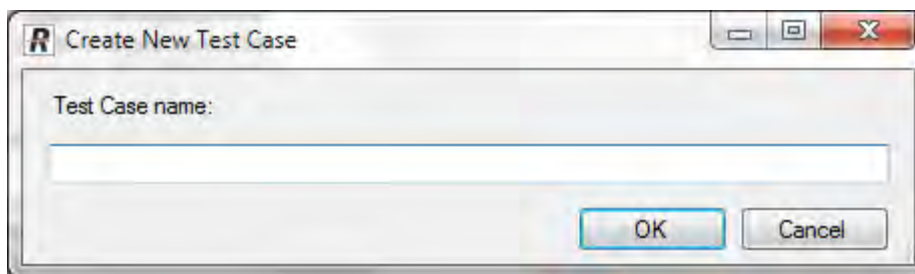


If there is already a test case in Spira that has not already been linked to Rapise then you can simply select that test case, which will display any existing manual test steps that exist:



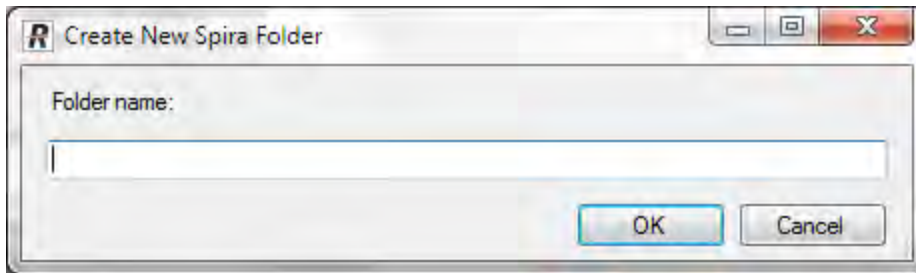
If this is the test case you want to associate the new Rapise test with, then simply click **Create from Spira**.

If you want to create a new test case in Spira to use, simply click **New Test Case**:



Then enter the name of the new test case and click **OK**. Once it has been created you can then select it in the test case list and click **Create from Spira**.

Sometimes there is no existing folder inside Spira that makes sense to use. In which case you can first use the **New Folder** button to create an empty folder that new test cases can be created in:



Regardless of which option you choose, before you click **Create from Spira**, you have the choice of test methodology to use.

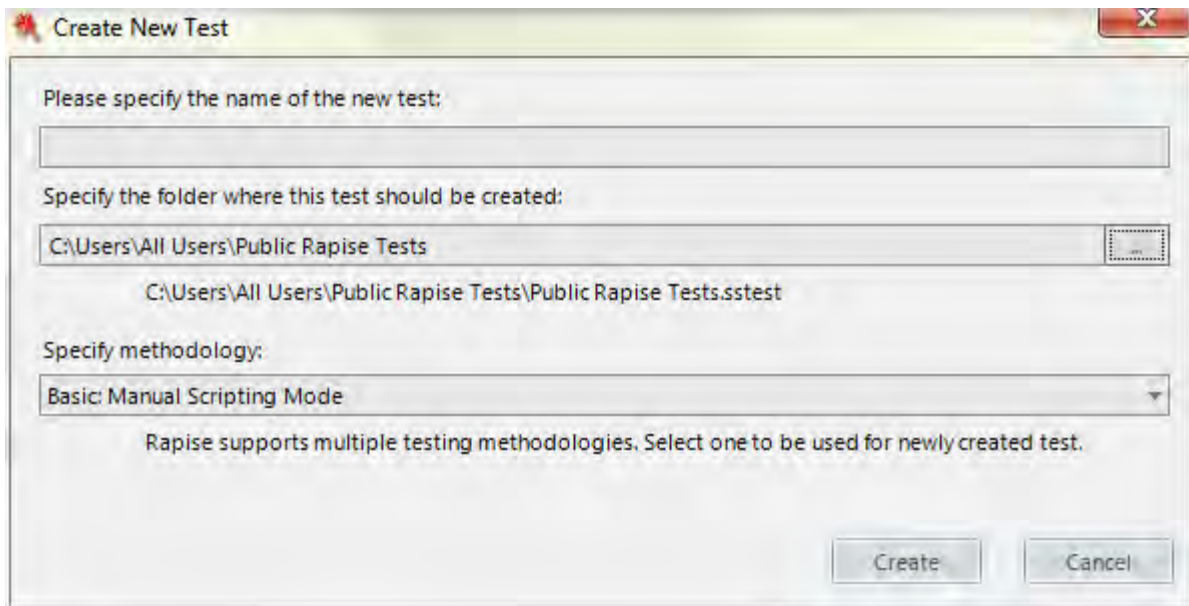
Currently there are two methodologies available in Rapise:

- **Mobile: Mobile Support** - this should only be selected for mobile device testing
- **Basic: Manual Scripting Mode** - this should be used for all non-mobile testing (e.g. Web, Desktop, Web Services)

If you do not plan on using Spira for managing your test scripts (or you are not able to connect when you want to create the test), you can click on the **Create Locally...** to just create the test case locally (see next section). You can always save to Spira later on.

(b) Creating Locally

If you choose the option to **Create Locally** the following dialog box is displayed:



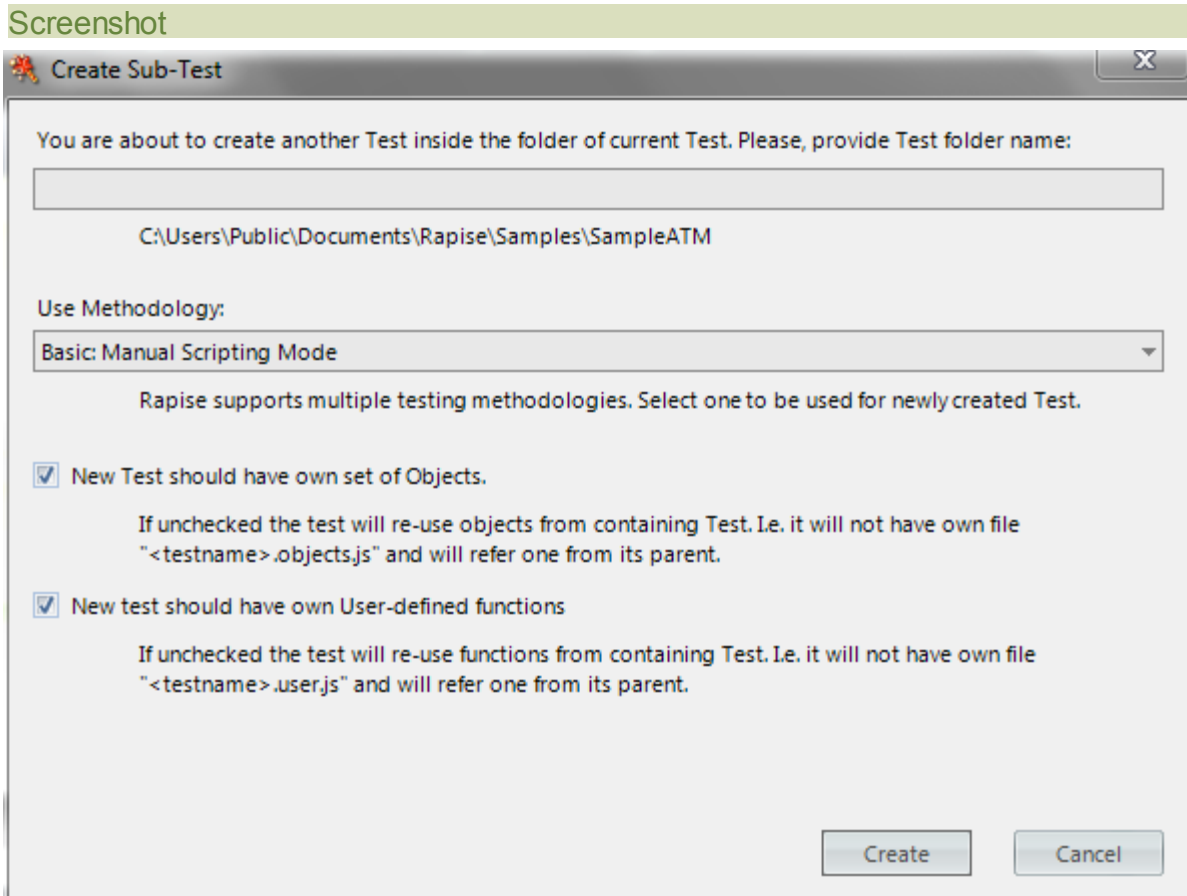
You need to enter the following information and click **Create**:

- **The name of the new test** - please enter the name of the new test that you wish to create.
- **Folder** - please choose the folder on your local computer that you wish to store the Rapise test in.
- **Specify methodology** - there are currently two methodologies available in Rapise:

- **Mobile: Mobile Support** - this should only be selected for mobile device testing
- **Basic: Manual Scripting Mode** - this should be used for all non-mobile testing (e.g. Web, Desktop, Web Services)

Once you click **Create**, the new test will be created and saved locally.

2.5.4 Create Sub-Test Dialog



Purpose

Create a [sub-test](#).

- **New test should have own set of Objects:** Uncheck it if you want to create a scenario re-using objects from parent test.
- **New test should have own User-defined functions:** Uncheck it if you want to create a scenario re-using utility functions from its parent test.

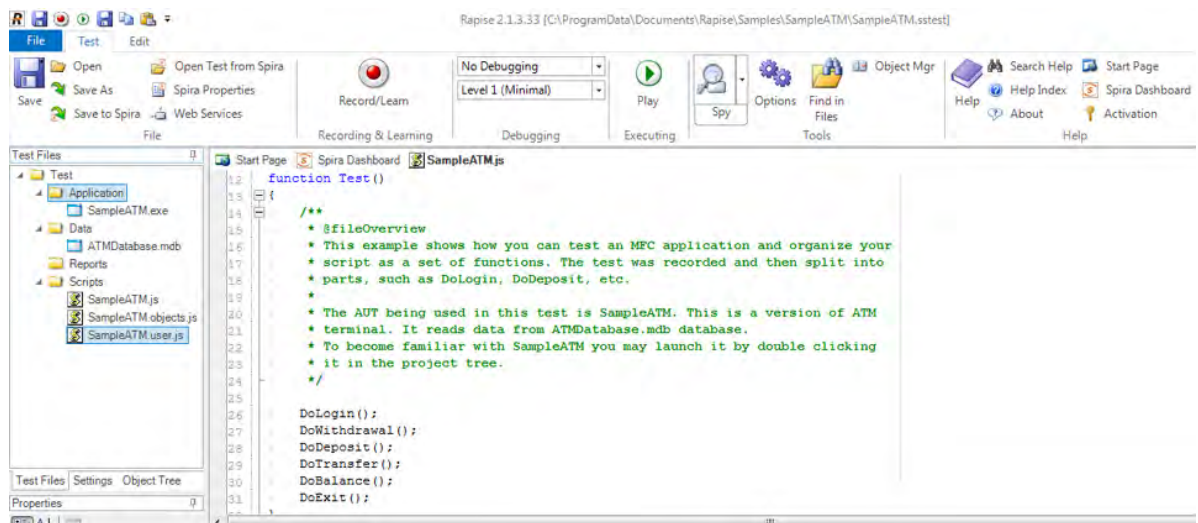
The Sub-Test is always created inside the folder of its parent test. If parent test is saved to a new location then sub-test is also saved as a sub-folder of a new location.

How to Open

Choose **Create Sub-Test...** in the context menu of a folder in [Test Files](#) dialog.

2.5.5 Content View

Screenshot



Purpose

To view and edit files. This includes the following file types:

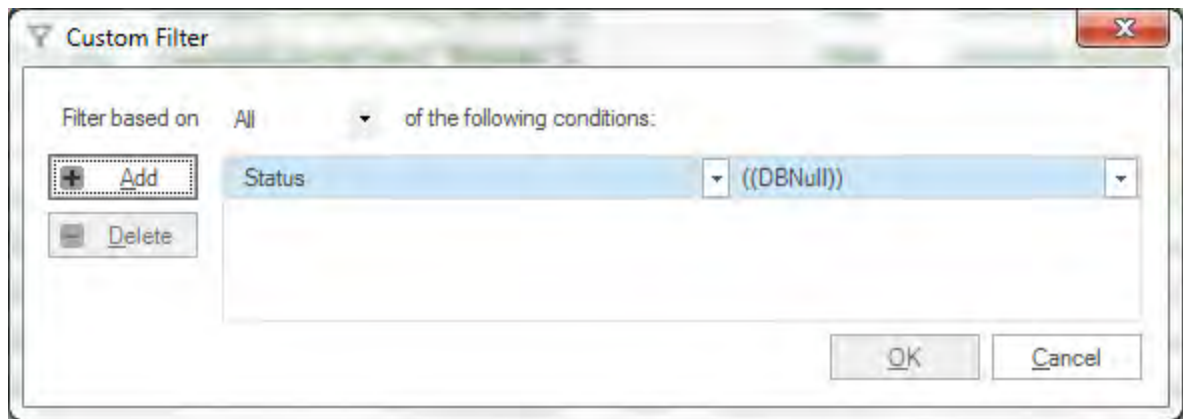
- JavaScript (.js) automated [test script files](#)
- Report (.trp) files that open in the [Report Viewer](#).
- Excel (.xls) files that can be displayed in the [Spreadsheet Editor](#)
- REST (.rest) web service definition files that open in the [REST Editor](#).
- Analog Recording Files (.arf) that contain [analog testing](#) mouse clicks and coordinates.
- Manual test steps (.rmt) that open in the [Manual Test Editor](#).

How to Open

Open a file using the [Test Files Dialog](#). The file will open inside of the **Content View**.

2.5.6 Enter filter criteria for... Dialog

Screenshot

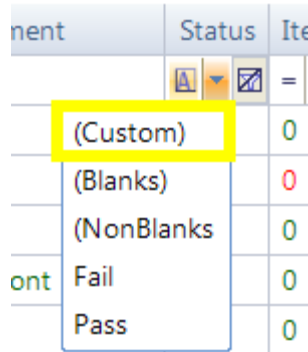


Purpose

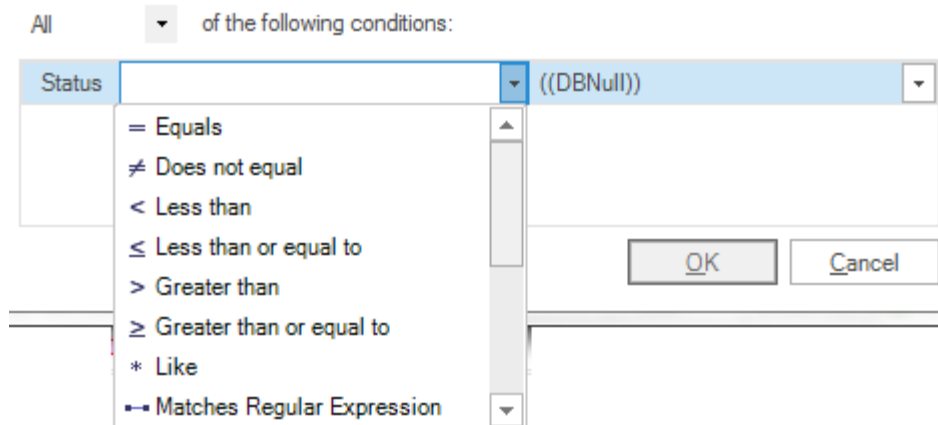
Allow more than one [filter criteria](#) for the same column.

How to Open

In the [Report Viewer](#), open the drop-down menu for one of the [filter cells](#); select the **Custom** option (see below):



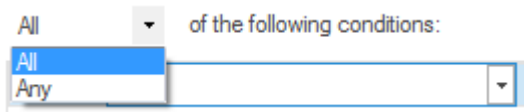
Conditions



You may specify as many conditions as you like. Each condition has two properties, a **Matching Criteria** on the left and a **filter value** on the right. The **filter value** is a string, and the **matching criteria** specifies what constitutes a match. For more details, look [HERE](#).

Filter Aggregation

There are two ways you can aggregate / combine filter conditions:



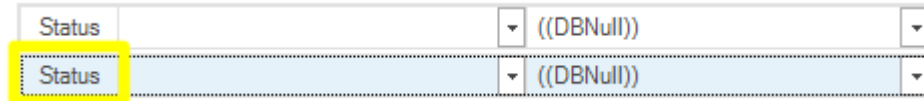
- **All**: All conditions must be true to constitute a match.
- **Any**: At least one condition must be true to constitute a match.

Buttons



- **Add**: Add a extra condition row.
- **Delete**: Delete the selected condition.

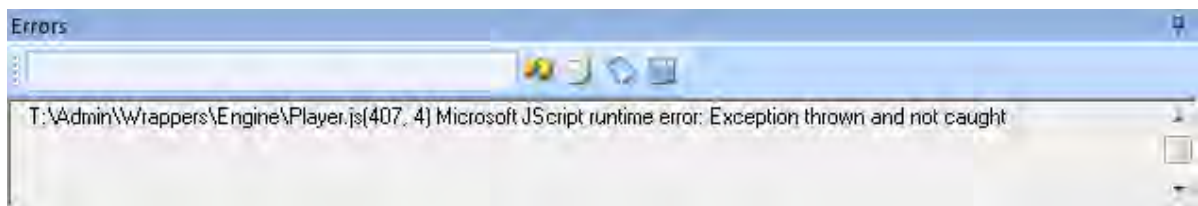
You can select a condition by clicking on the field name to the left of the matching criteria:



- **OK**: Close the dialog and apply the filter.
- **Cancel**: Close the dialog. Do not apply the filter.

2.5.7 Errors View

Screenshot



Purpose

The **Errors View** displays execution error details. Execution errors are those that cause [Recording](#) or [Playback](#) to stop.

How to Open

The **Errors View** is part of the [Default Layout](#).





Error Message

```
T:\Admin\Wrappers\Engine\Player.js(407, 4) Microsoft JScript runtime error: Exception thrown and not caught
```

Double click on an error message to go to the corresponding source line.

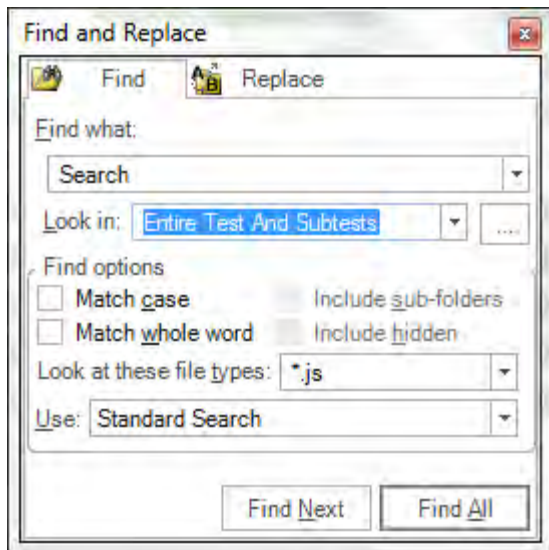
Widgets



- The text box is a search box.
- The icons from left to right are **Find Next Entry** , **Copy Selected** , **Clear All Text** , and **Select All Text** .

2.5.8 Find and Replace Dialog

Screenshot



Purpose

To find and replace text in files displayed in the Rapise [Content View](#).

How to Open

Select the **Find in Files** button on the Ribbon (**Test** tab > **Tools** menu).

Find in Files Tab

- **Find what:** Place the string you would like to search for in the **Find what** text box.
- **Look In:** this option specifies where the search will take place. You can limit the search to: current document, current selection, current test, the entire test and subtests, or a specific folder.

- **Directory path:** Use the Directory Path text-box to specify the directory in which to search. The Directory path text-box cannot be accessed (and is ignored) if the **Test files** checkbox is checked.
- Check the **Include sub-folders** option to search recursively from the directory specified in the **Directory Path** text-box. The Include sub-folders option cannot be accessed if the **Test files** checkbox is checked.
- **Match case option:** If unselected, case is ignored in the search.
- **Match whole word option:** If set to true, parts of words will not count as matches.
- **Look at these file types:** Search only files with the specified file type(s).

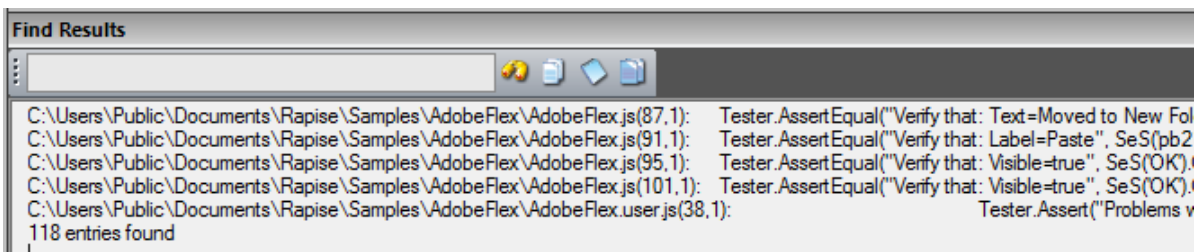
Find and Replace Tab

There is only one significant difference between the **Find in Files** Tab and **Find and Replace** Tab: the **Replace with** text-box.

- **Replace with text-box:** All occurrences of the string in the **Find what** text-box will be replaced with the string in the **Replace with** text-box when you press the **Replace** button.

2.5.9 Find Results View

Screenshot



Purpose

Displays results for the [Find and Replace Dialog](#).

How to Open

The **Find Results** view is part of the [Default Layout](#).





Messages

C:\Users\Public\Documents\Rapise\Samples\AdobeFlex\AdobeFlex.js(101,1): Tester.AssertEqual("Verify that: Visible=true

Double click on a message to go to the corresponding source line.

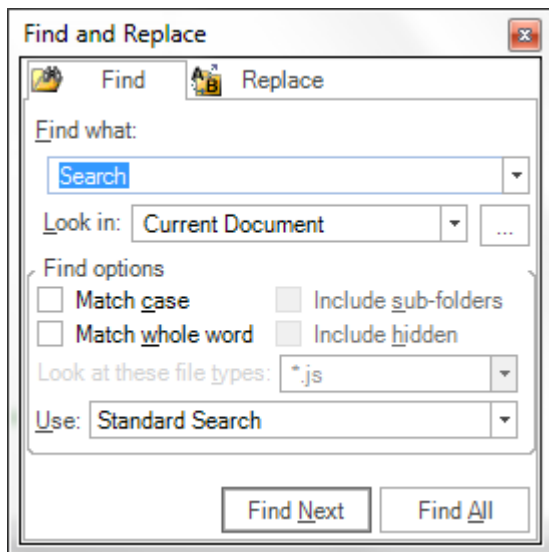
Widgets



- The text box is a search box.
- The icons from left to right are **Find Next Entry** , **Copy Selected** , **Clear All Text** , and **Select All Text** .

2.5.10 Find Text dialog


Screenshot



Purpose

Find occurrences of the **Search Term** text in the currently visible [Source Editor](#).

How to Open

Ribbon > [Edit Tab](#) > **Search** menu > **Find** button 

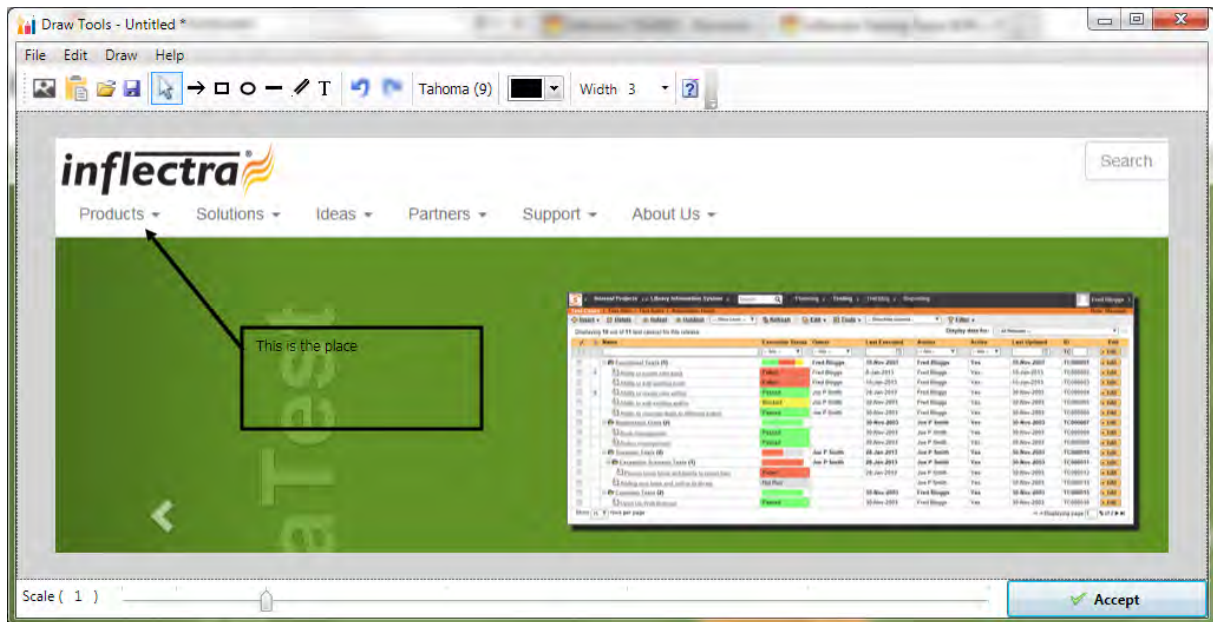
Or type **CTRL+F** on the keyboard when the source editor is option.

Find Tab

- **Find what:** Place the string you would like to search for in the **Find what** text box.
- **Look In:** this option specifies where the search will take place. You can limit the search to: current document, current selection, current test, the entire test and subtests, or a specific folder.
- **Match case option:** If unselected, case is ignored in the search.
- **Match whole word option:** If set to true, parts of words will not count as matches.

2.5.11 Image Capture

Screenshot

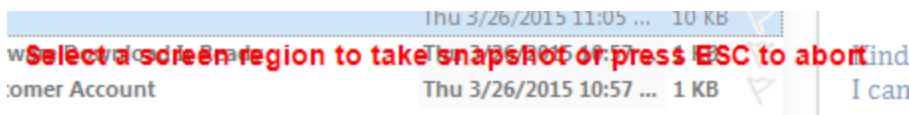


Purpose

The **Drawing Tools** image editor lets you capture a section of the current screen or application under test, add annotations to help document the image and then attach the final result to the [current test case](#), test step, or [manual test result](#).

How to Open

You can open the Drawing Tools dialog box by clicking on the **Image icon** on the various rich text editors in Rapise. When you do that, Rapise will minimize itself and display the following screen:



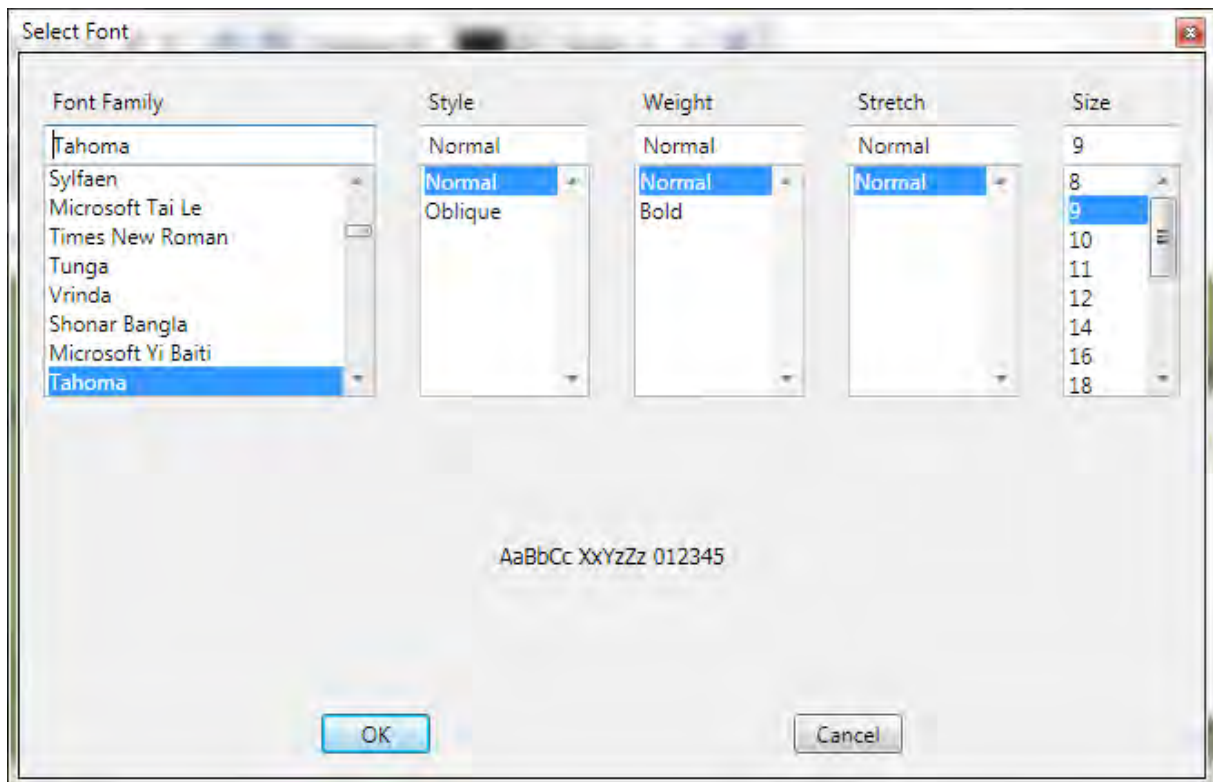
You now need to draw a rectangle on your screen that tells Rapise which part of the screen you want to capture. Once that is done, the image editor will open with that part of the screen selected. If you click ESC on the keyboard, it will just open the editor with no initial image.

Image Editor Toolbar

The image editor provides the following tools:



- **Image Capture** - this lets you discard the current image and capture a new screenshot instead
- **Paste From Clipboard** - this lets you paste in an image from the Windows clipboard
- **Open** - this lets you open an existing image saved on your local computer
- **Save** - this lets you save the current image to your local computer
- **Pointer** - this lets you select an annotation to edit (arrow, rectangle, ellipse, line, text, etc.)
- **Arrow** - this lets you draw an arrow in the current color on top of the current image
- **Rectangle** - this lets you draw square / rectangle in the current color on top of the current image
- **Ellipse** - this lets you draw a circle / ellipse in the current color on top of the current image
- **Line** - this lets you draw a straight line in the current color on top of the current image
- **Pencil** - this lets you draw freehand in the current color on top of the current image
- **Text** - this lets you add text in the current color and current font on top of the current image. You will need to draw a rectangle to mark the size of the text box before entering in the text.
- **Undo** - this will undo the last operation
- **Redo** - this will redo the last operation
- **Font Name** - this will let you change the font family and size:



- **Color** - This lets you change the current color (used in the various annotations):



- **Line Width** - This lets you change the current line width (used in the various annotations)

Image Editor Footer

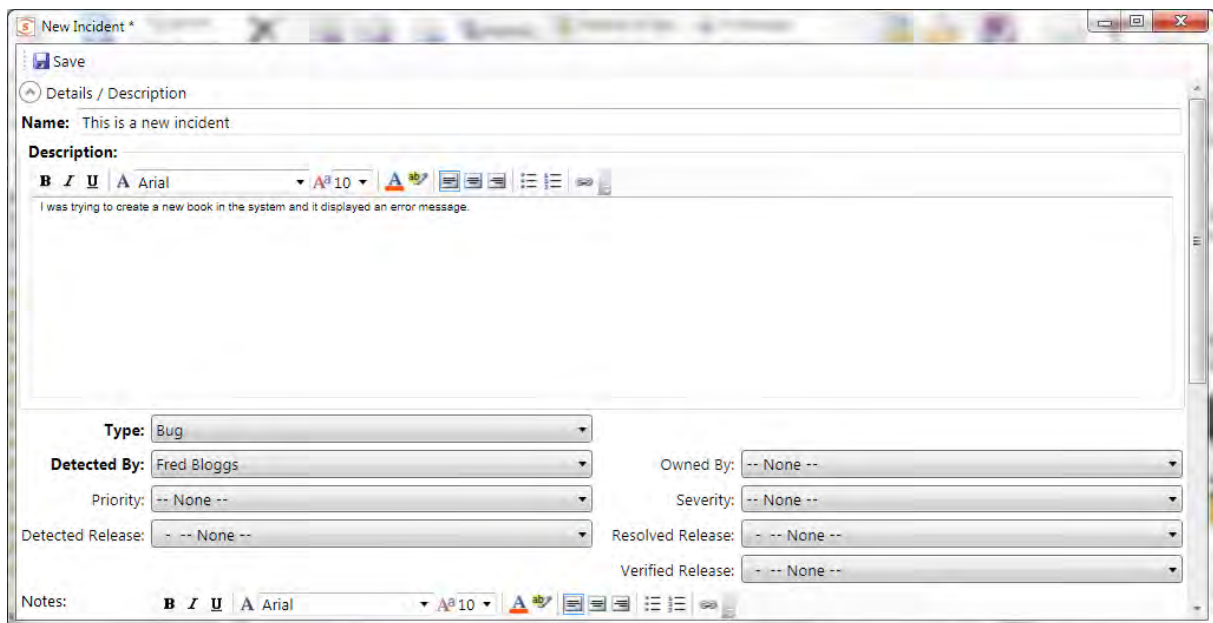
The footer of the Drawing Tools provides the following options:



- **Scale** - this changes the zoom of the current window, allowing you to more easily view small/large images
- **Accept** - this accepts the current image and inserts it into the **test case**, **test step** or **test run** that was being edited.

2.5.12 Incident Logging

Screenshot



The screenshot shows a window titled "New Incident *". At the top left is a "Save" button. Below it is a "Details / Description" section. The "Name" field contains "This is a new incident". The "Description" field has a rich text editor with the text "I was trying to create a new book in the system and it displayed an error message." Below the description are several dropdown menus: "Type" (Bug), "Detected By" (Fred Bloggs), "Priority" (-- None --), "Detected Release" (-- None --), "Owned By" (-- None --), "Severity" (-- None --), "Resolved Release" (-- None --), and "Verified Release" (-- None --). At the bottom is a "Notes" section with another rich text editor.

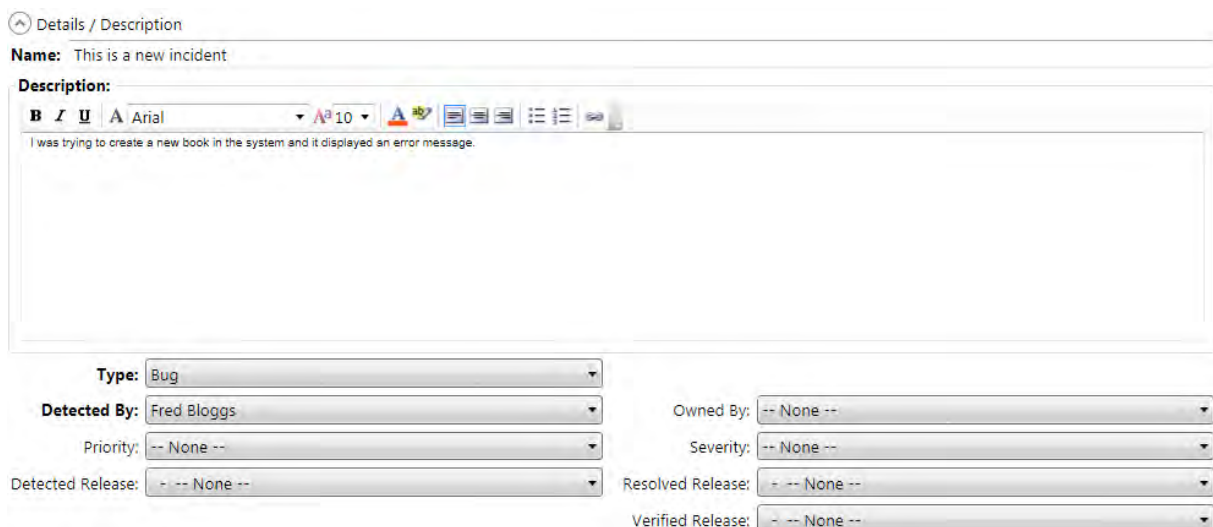
Purpose

The **New Incident** logging dialog box lets you log a new incident (also known as a bug or defect) into a connected [SpiraTest](#) instance. If you logged the new incident during a [manual test execution](#), it will be linked to the current test run.

How to Open

You can open the **New Incident** dialog box by either clicking 'New Incident' in the [Manual Ribbon](#), or by clicking the 'Log Incident' button on the [Manual Playback](#) dialog box.

Details / Description

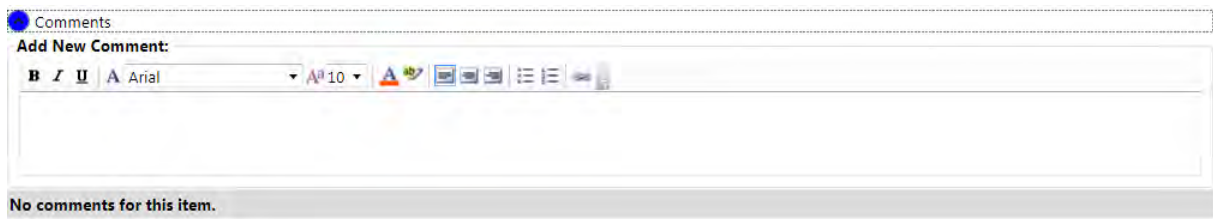


This is a close-up view of the "Details / Description" section. It shows the "Name" field with "This is a new incident" and the "Description" field with the text "I was trying to create a new book in the system and it displayed an error message." Below the description are the same dropdown menus as in the full screenshot: "Type" (Bug), "Detected By" (Fred Bloggs), "Priority" (-- None --), "Detected Release" (-- None --), "Owned By" (-- None --), "Severity" (-- None --), "Resolved Release" (-- None --), and "Verified Release" (-- None --).

The **Details/Description** section lets you enter the short name and long description of the new incident as well as the following fields:

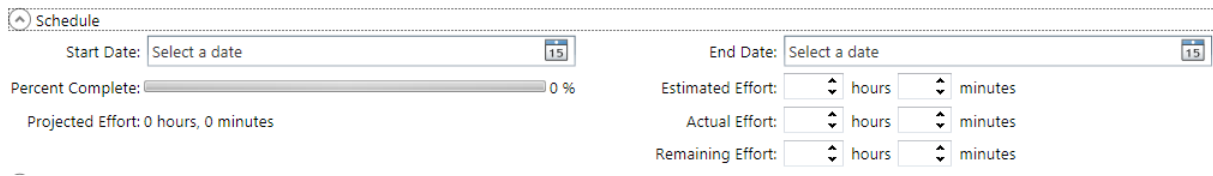
- **Type** - the type of the incident (e.g. bug)
- **Detected By** - who found the bug (typically your user)
- **Priority** - how important the bug is
- **Severity** - how critical the bug is
- **Owned By** - who the bug should be assigned to (or left unassigned)
- **Detected Release** - which version of the system was the bug found in
- **Resolved Release** - which version of the system should the bug be fixed in
- **Verified Release** - which version of the system was the bug retested in
- **Custom Fields** - in addition any custom fields created in your Spira instance will be displayed

Comments



The **Comments** section lets you enter a comment that will be logged with the new incident. The field is a rich text field that can contain formatted text.

Schedule



The Schedule section lets you enter in schedule/effort related information for the new incident:

- **Start Date** - This is the planned start date of the new incident
- **End Date** - This is the planned completion date of the new incident
- **Estimated Effort** - This is the number of hours the incident is expected to take
- **Actual Effort** - This is the number of hours that were actually expended
- **Remaining Effort** - This is the number of hours remaining to fix the incident

In addition, the following calculated fields will be displayed:

- **Percent Complete** - This is the measure of much of the incident has been completed. It is calculated from 100% - (Remaining Effort / Estimated Effort)
- **Projected Effort** - This the current measure of how long the incident is expected to take based on current information. It is calculated from (Actual Effort + Remaining Effort)

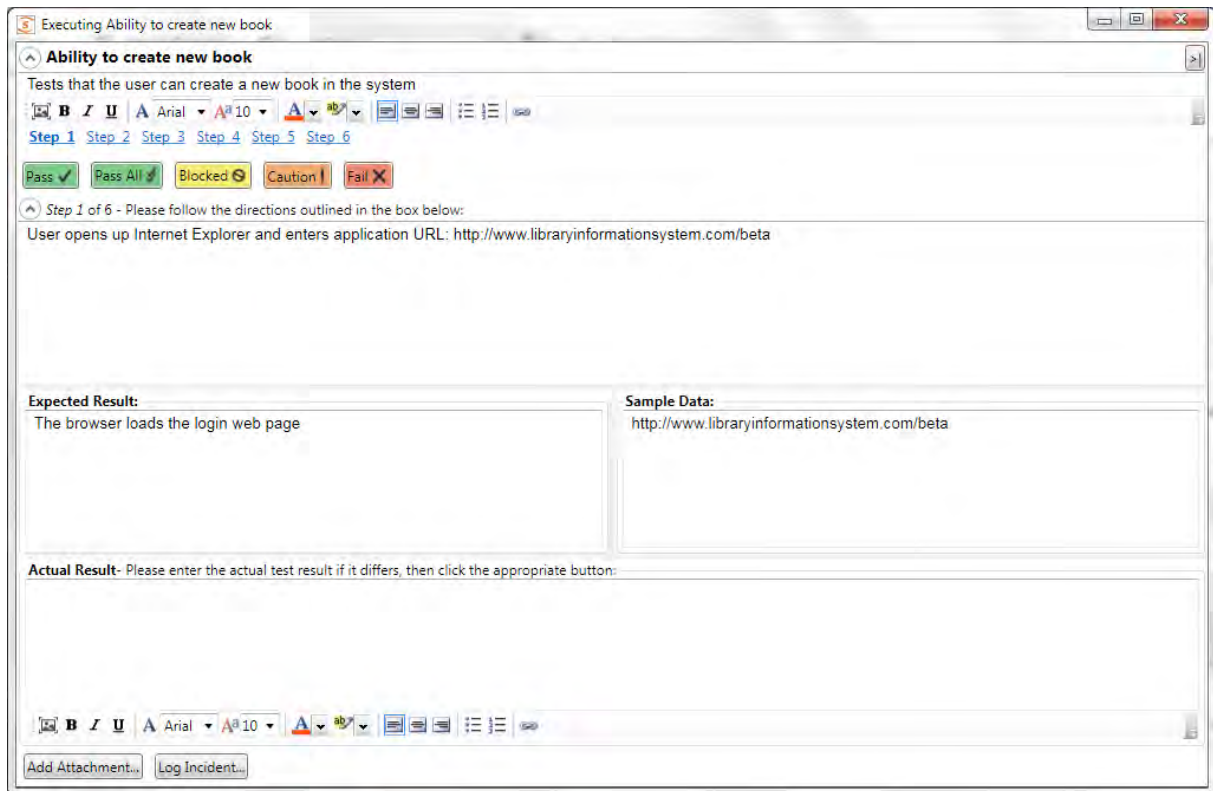
Attachments



This section displays the list of attachments associated with the new incident. Since Rapise already has a [screenshot capture](#) utility built-in, this section is typically not used.

2.5.13 Manual Playback

Screenshot



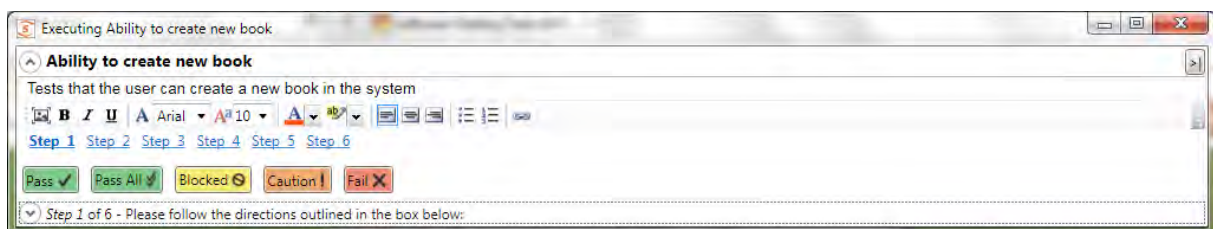
Purpose

The **Manual Playback** dialog box lets you execute a series of manual test cases (including those part of a test set) from within Rapise. The results from the manual test result will be reported back into your connected [Spira](#) instance. During the executing of the manual test, you can attach screenshots, files and log incidents related to the test result

How to Open

You can open the **Manual Playback** dialog box by either clicking 'Execute Manual' icon in the [Manual Ribbon](#).

Test Case Details & Test Step Selector



The top part of the manual playback screen lets you view the name and description of the test case,

navigate between the test steps and click one of the result buttons to indicate how the application being tested behaved:

- **Pass** - The current test step was completed successfully and the expected result was observed
- **Pass All** - All of the steps in the test case could be completed successfully and the expected results were observed in all steps
- **Blocked** - The current test step could not be performed because something else prevented its completion
- **Caution** - The current test step could be performed but the actual result only partially matched the expected result (there were minor differences)
- **Fail** - Either the current test step could not be performed successfully or the observed actual result did not match the expected result

Test Step Expected & Actual Result

Executing Ability to create new book

Ability to create new book

Pass ✓ Pass All ✓ Blocked ⓧ Caution ! Fail ✕

Step 1 of 6 - Please follow the directions outlined in the box below:

User opens up Internet Explorer and enters application URL: http://www.libraryinformationsystem.com/beta

Expected Result:
The browser loads the login web page

Sample Data:
http://www.libraryinformationsystem.com/beta

Actual Result- Please enter the actual test result if it differs, then click the appropriate button:
SSSS

Add Attachment... Log Incident...

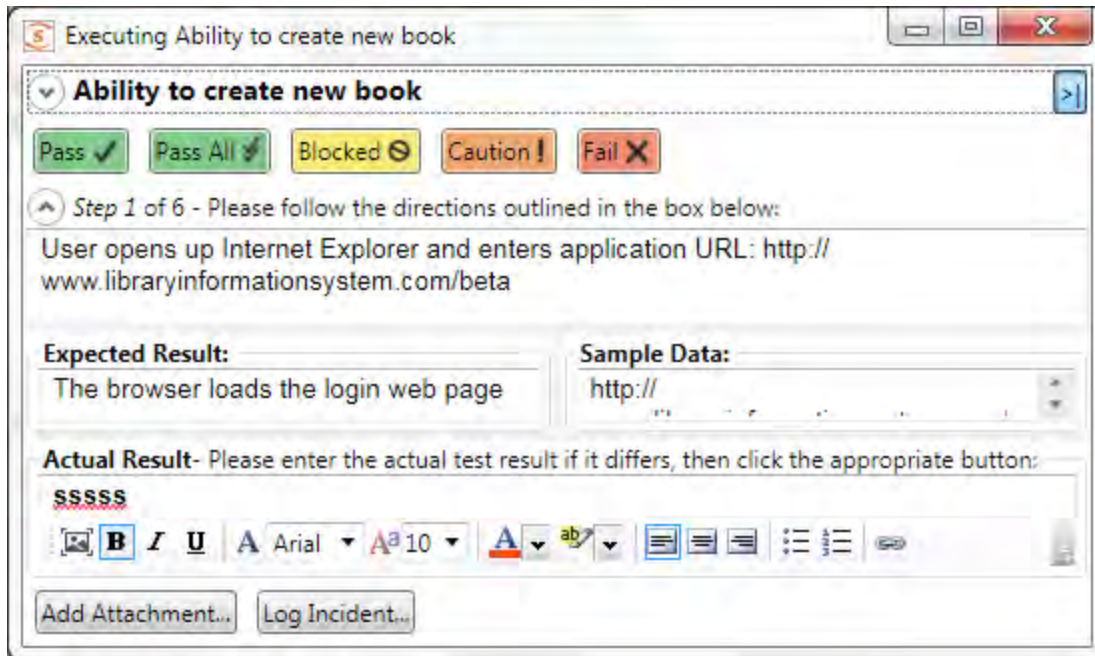
This section displays the details of the current test step and lets you enter in the observed actual result:

- **Description** - This displays the description of the action that the tester should carry out on the application being tested.
- **Expected Result** - This contains a description of the expected result if the application performs as expected
- **Sample Data** - This (optional) field contains any sample data that should be used during testing
- **Actual Result** - This is a formatted text box where the tester should enter in what actually happened during testing. It is required if you Fail, Block or Caution the test step, but is optional for steps that Pass.

In addition, you can click on the picture icon to [add a screenshot](#), or use one of the two buttons underneath:

- **Add Attachment** - this lets you choose a file from your local system and attach to the test result.
- **Log Incident** - this lets you log a bug/incident that is connected to the test step (e.g. if it failed) and will display the [New Incident](#) dialog box.

Minimized Playback Dialog



Sometimes you want to be able to reduce the amount of space taken up by the testing dialog box so that you can view the application and the test steps on the same screen at the same time. To make this easier, if you click on the Minimize (>|) icon in the top-right of the dialog box it will change the manual playback dialog to the mini version show above. You can click on the icon again to switch back to the standard player.

2.5.14 Manual Test Editor

Screenshot

StepId	Description	Expected Result	Sample Data
Step 1 [TS:1]	Call		
Step 2 [TS:2]	User clicks link to create book	User taken to first screen in wizard	
Step 3 [TS:3]	User enters books name and author, then clicks Next	User taken to next screen in wizard	Macbeth, William Shakespeare
Step 4 [TS:4]	User chooses book's genre and sub-genre from list	User sees screen displaying all entered information	Play, Tragedy
Step 5 [TS:5]	User clicks submit button	Confirmation screen is displayed	
Step 4	@MyFunction():		

Purpose

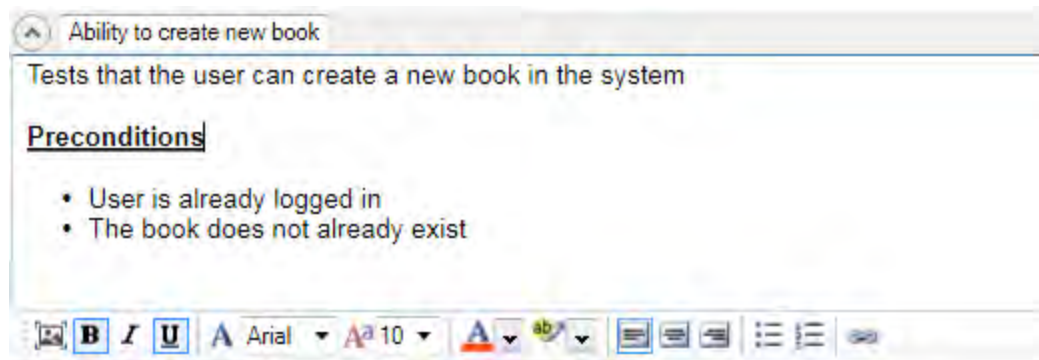
The **Manual Test Editor** lets you create and edit manual test cases that are stored in [Spira](#). These manual test cases contain a high level description of the test case as well a detailed set of steps and associated expected results that make up the manual test script. These manual tests can be [executed manually](#) in Rapise (or in Spira) as well as used as the basis for creating a related automated test script.

Such automated test scripts may be linked to individual test steps by means of the [test scenario](#) approach.

How to Open

You can open the **Manual** ribbon by either clicking on the **Manual Steps** icon on the main [Test ribbon](#) or clicking on the **ManualSteps.rmt** file in the [Test Files](#) tab. The [Manual Ribbon](#) will be displayed whenever you have the Manual Test Editor open.

Test Case Name/Description



This section lets you edit the name and long formatted description of the test case. The rich text editor lets you choose the font name, font size, text color, highlight color, style (bold, underline, italic) as well as provides easy ability to add links, bullets and numbered lists.

In addition there is a button that lets you [add screenshots](#).

Test Step Editor

StepId	Description	Expected Result	Sample Data
Step 1 [TS:1]	Call		
Step 2 [TS:2]	User clicks link to create book	User taken to first screen in wizard	
Step 3 [TS:3]	User enters books name and author, then clicks Next	User taken to next screen in wizard	Macbeth, William Shakespeare
Step 4	User chooses book's genre and sub-genre from list	User sees screen displaying all entered	Plav. Traedv

This section lets you add, edit and delete test steps from the manual test case. Each of the test steps contains four fields:

- **Step ID** - this contains the position number of the test step (e.g. step 1) as well as the ID of the test step as it exists in Spira. If you click on the [TS:xxx] label it will automatically copy this into the Windows clipboard. This allows you to easily paste the ID of the test step into your automated test scripts which allows Rapise to [report back test results to Spira](#) against specific test steps.
- **Description** - this is a description of the test procedure that the tester should perform
- **Expected Result** - This is a description of the expected result that should be observed if the system being tested performs correctly
- **Sample Data** - This is an optional field that contains any sample data that should be used in the test

Each of the fields provides a rich text editor lets you choose the font name, font size, text color, highlight color, style (bold, underline, italic) as well as provides easy ability to add links, bullets and numbered lists. In addition there is a button that lets you [add screenshots](#) to the test step.

For ease of editing, you can navigate between the rows and columns using the **ALT + Arrow keys** on the keyboard.

Automating Test Steps

Sometimes you have a primarily manual test case that you want to automate certain steps of. For example you may want to automate the setup of the test data or login to the application before carrying out manual testing. Such a test is called a [semi-manual test](#).

To do this, you enter the syntax `@FunctionName();` in the Description box of the test step. Then when you run the test, that step will be executed automatically. The `@FunctionName();` refers to a JavaScript [user function](#) called **function FunctionName()** in the **Test.user.js** file.

For example:

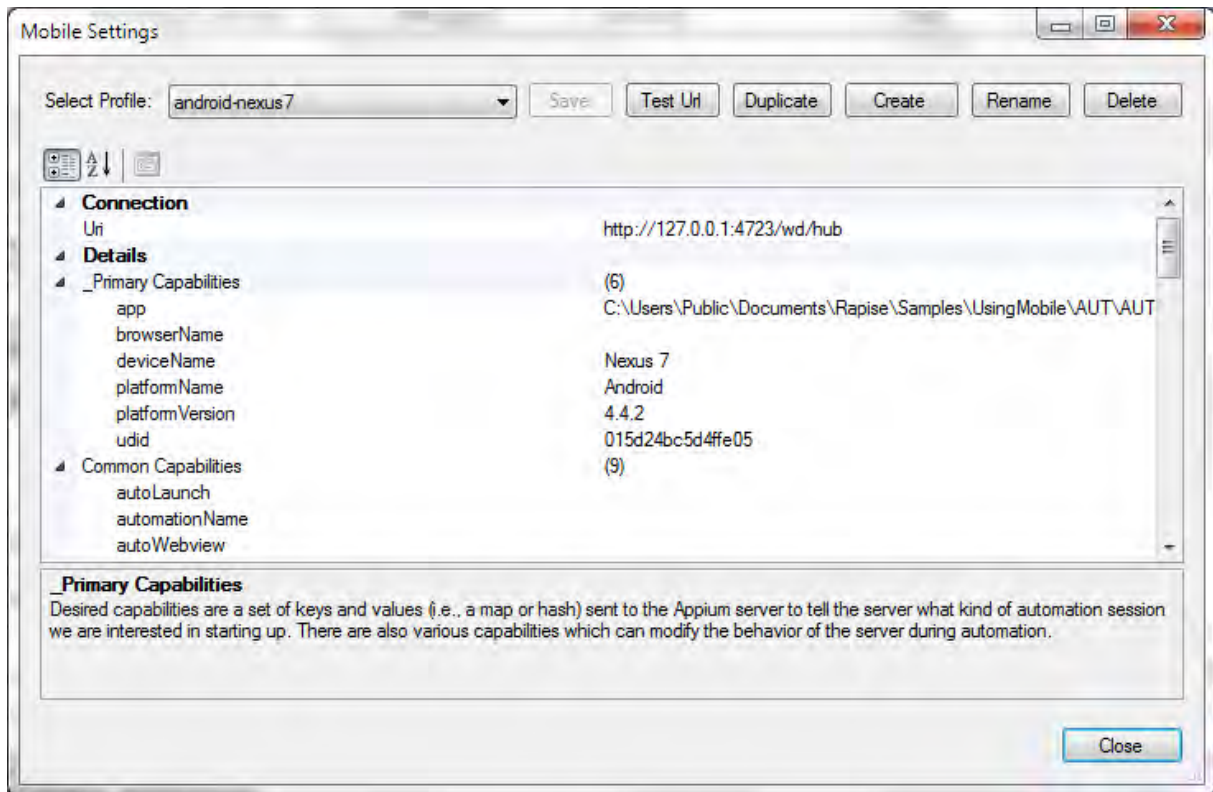


2.5.15 Mobile Settings Dialog

Purpose

This dialog box displays the list of mobile devices that have been configured for use by Rapise and lets you create a new profile, modify a profile or make a new profile based on an existing one.

Screenshot



How to Open

You can open this dialog box from two places:

- From the main Rapise [Options](#) dialog box (when the Tools tab is selected).
- From the [Mobile Spy](#) tool when you click on the 'Mobile Profiles' ribbon menu entry.

Menu Options

This dialog box has the following menu options:

- **Select Profile** - This dropdown list lets you select a different mobile profile to be displayed in the dialog.
- **Save** - This button will save the changes to the current mobile profile.
- **Test URL** - This button will test the Connection (URL) from Rapise to [Appium](#) (which is used to manage the devices) and the connection from Appium to the physical (or simulated) device.
- **Duplicate** - This button will create a new mobile profile based on the currently viewed one.
- **Create** - This button will create a new empty mobile profile that you can edit.
- **Rename** - This button will change the name of the current mobile profile being edited.
- **Delete** - This button will delete the currently displayed mobile profile. There is no undo, so be careful!

Connection

This section lets you enter the URL used to connect to the [Appium](#) server which hosts the mobile devices being tested. It is typically of the form:

- <http://server:4723/wd/hub>

Where the port number used by Appium is 4723 by default and the `/wd/hub` suffix is added.

Details

This section has various settings, some of which are used by all mobile devices, some only by simulated devices, some only by physical devices and some are specific to the type of device (iOS vs. Android):

• Primary Capabilities

- **app** - The absolute local path or remote http URL to an .ipa or .apk file, or a .zip containing one of these. Appium will attempt to install this app binary on the appropriate device first. Note that this capability is not required for Android if you specify appPackage and appActivity capabilities (see below). Incompatible with browserName. - Values: /abs/path/to/my.apk or http://myapp.com/app.ipa
- **browserName** - Name of mobile web browser to automate. Should be an empty string if automating an app instead. - Values: Safari for iOS and Chrome, Chromium, or Browser for Android
- **platformName** - Which mobile OS platform to use - Values: iOS, Android, or FirefoxOS
- **platformVersion** - Mobile OS version - Values: e.g., 7.1, 4.4
- **deviceName** - The kind of mobile device or emulator to use - Values: iPhone Simulator, iPad Simulator, iPhone Retina 4-inch, Android Emulator, Galaxy S4, etc. On iOS, this should be one of the valid devices returned by instruments with instruments -s devices. On Android this capability is currently ignored.
- **udid** - Unique device identifier of the connected physical device - Values: e.g. 1ae203187fc012g

• Common Capabilities

- **automationName** - Which automation engine to use - Values: Appium (default) or Selendroid
- **newCommandTimeout** - How long (in seconds) Appium will wait for a new command from the client before assuming the client quit and ending the session - Values: e.g. 60
- **autoLaunch** - Whether to have Appium install and launch the app automatically. Default true - Values: true, false
- **language** - (Sim/Emu-only) Language to set for the simulator / emulator - Values: e.g. fr
- **locale** - (Sim/Emu-only) Locale to set for the simulator / emulator - Values: e.g. fr_CA
- **orientation** - (Sim/Emu-only) start in a certain orientation - Values: LANDSCAPE or PORTRAIT
- **autoWebview** - Move directly into Webview context. Default false - Values: true, false
- **noReset** - Don't reset app state before this session. Default false - Values: true, false
- **fullReset** - (iOS) Delete the entire simulator folder. (Android) Reset app state by uninstalling app instead of clearing app data. On Android, this will also remove the app after the session is complete. Default false - Values: true, false

• For Android Only

- **appActivity** - Activity name for the Android activity you want to launch from your package. This often needs to be preceded by a . (e.g., .MainActivity instead of MainActivity) - Values: MainActivity, .Settings
- **appPackage** - Java package of the Android app you want to run - Values: com.example.android.myApp, com.android.settings
- **appWaitActivity** - Activity name for the Android activity you want to wait for - Values: SplashActivity
- **appWaitPackage** - Java package of the Android app you want to wait for - Values: com.example.android.myApp, com.android.settings
- **deviceReadyTimeout** - Timeout in seconds while waiting for device to become ready - Values: 5
- **androidCoverage** - Fully qualified instrumentation class. Passed to -w in adb shell am instrument -e coverage true -w - Values: com.my.Pkg/com.my.Pkg.instrumentation.MyInstrumentation
- **enablePerformanceLogging** - (Chrome and webview only) Enable Chromedriver's performance logging (default false) - Values: true, false
- **androidDeviceReadyTimeout** - Timeout in seconds used to wait for a device to become ready after booting - Values: e.g., 30
- **androidDeviceSocket** - Devtools socket name. Needed only when tested app is a Chromium

- embedding browser. The socket is open by the browser and Chromedriver connects to it as a devtools client. - Values: e.g., chrome_devtools_remote
- o **avd** - Name of avd to launch - Values: e.g., api19
 - o **avdLaunchTimeout** - How long to wait in milliseconds for an avd to launch and connect to ADB (default 120000) - Values: 300000
 - o **avdReadyTimeout** - How long to wait in milliseconds for an avd to finish its boot animations (default 120000) - Values: 300000
 - o **avdArgs** - Additional emulator arguments used when launching an avd - Values: e.g., -netfast
 - o **useKeystore** - Use a custom keystore to sign apks, default false - Values: true or false
 - o **keystorePath** - Path to custom keystore, default ~/.android/debug.keystore - Values: e.g., /path/to.keystore
 - o **keystorePassword** - Password for custom keystore - Values: e.g., foo
 - o **keyAlias** - Alias for key - Values: e.g., androiddebugkey
 - o **keyPassword** - Password for key - Values: e.g., foo
 - o **chromedriverExecutable** - The absolute local path to webdriver executable (if Chromium embedder provides its own webdriver, it should be used instead of original chromedriver bundled with Appium) - Values: /abs/path/to/webdriver
 - o **autoWebviewTimeout** - Amount of time to wait for Webview context to become active, in ms. Defaults to 2000 - Values: e.g. 4
 - o **intentAction** - Intent action which will be used to start activity (default android.intent.action.MAIN) - Values: e.g. android.intent.action.MAIN, android.intent.action.VIEW
 - o **intentCategory** - Intent category which will be used to start activity (default android.intent.category.LAUNCHER) - Values: e.g. android.intent.category.LAUNCHER, android.intent.category.APP_CONTACTS
 - o **intentFlags** - Flags that will be used to start activity (default 0x10200000) - Values: e.g. 0x10200000
 - o **optionalIntentArguments** - Additional intent arguments that will be used to start activity. See Intent arguments - Values: e.g. --esn <EXTRA_KEY>, --ez <EXTRA_KEY> <EXTRA_BOOLEAN_VALUE>, etc.
 - o **unicodeKeyboard** - Enable Unicode input, default false - Values: true or false
 - o **resetKeyboard** - Reset keyboard to its original state, after running Unicode tests with unicodeKeyboard capability. Ignored if used alone. Default false - Values: true or false
 - o **noSign** - Skip checking and signing of app with debug keys, will work only with UiAutomator and not with selendroid, default false - Values: true or false
 - o **ignoreUnimportantViews** - Calls the setCompressedLayoutHierarchy() uiautomator function. This capability can speed up test execution, since Accessibility commands will run faster ignoring some elements. The ignored elements will not be findable, which is why this capability has also been implemented as a toggle-able setting as well as a capability. Defaults to false - Values: true or false
- **For iOS Only**
 - o **calendarFormat** - (Sim-only) Calendar format to set for the iOS Simulator - Values: e.g. gregorian
 - o **bundleId** - Bundle ID of the app under test. Useful for starting an app on a real device or for using other caps which require the bundle ID during test startup. To run a test on a real device using the bundle ID, you may omit the "app" capability, but you must provide "udid". - Values: e.g. io.appium.TestApp
 - o **udid** - Unique device identifier of the connected physical device - Values: e.g. 1ae203187fc012g
 - o **launchTimeout** - Amount of time in ms to wait for instruments before assuming it hung and failing the session - Values: e.g. 20000
 - o **locationServicesEnabled** - (Sim-only) Force location services to be either on or off. Default is to keep current sim setting. - Values: true or false
 - o **locationServicesAuthorized** - (Sim-only) Set location services to be authorized or not authorized

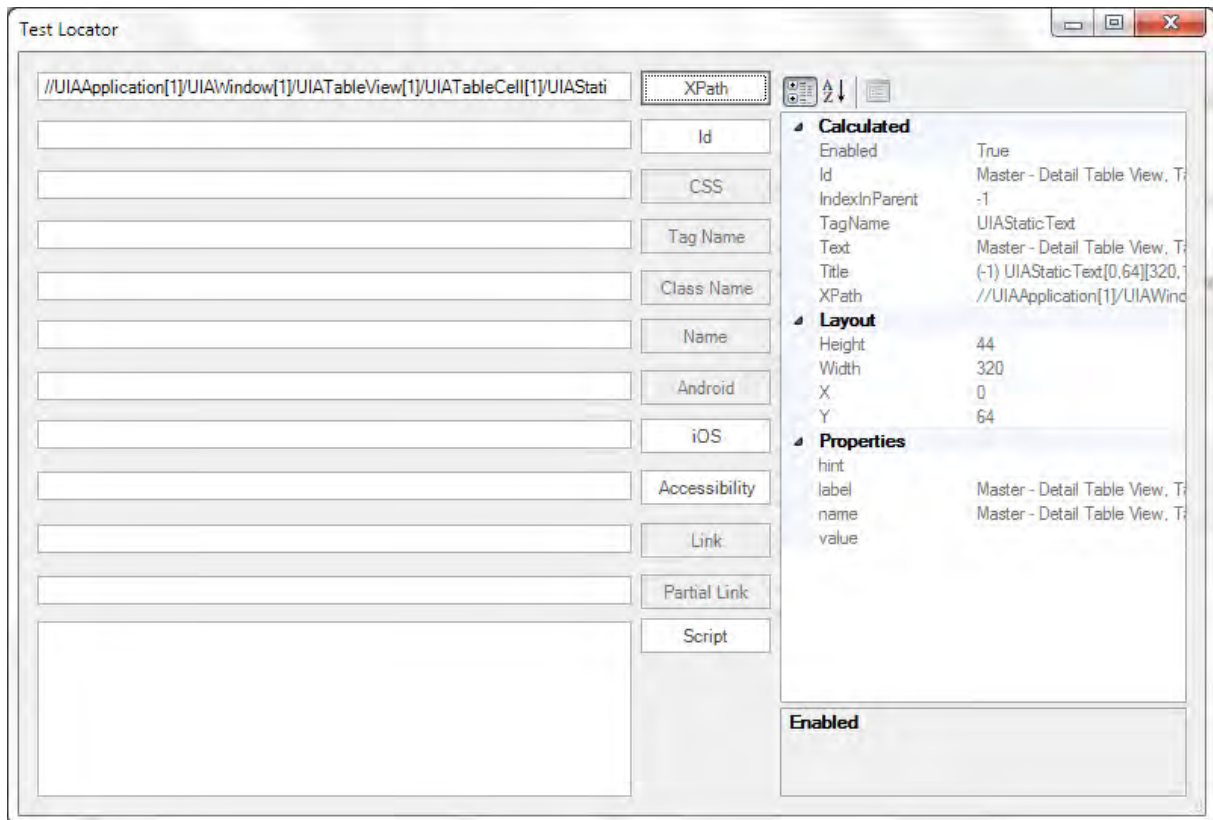
- for app via plist, so that location services alert doesn't pop up. Default is to keep current sim setting. Note that if you use this setting you MUST also use the bundleId capability to send in your app's bundle ID. - Values: true or false
- **autoAcceptAlerts** - Accept iOS privacy access permission alerts (e.g., location, contacts, photos) automatically if they pop up. Default is false. - Values: true or false
 - **nativeInstrumentsLib** - Use native instruments lib (ie disable instruments-without-delay). - Values: true or false
 - **nativeWebTap** - (Sim-only) Enable "real", non-javascript-based web taps in Safari. Default: false. Warning: depending on viewport size/ratio this might not accurately tap an element - Values: true or false
 - **safariAllowPopups** - (Sim-only) Allow javascript to open new windows in Safari. Default keeps current sim setting - Values: true or false
 - **safariIgnoreFraudWarning** - (Sim-only) Prevent Safari from showing a fraudulent website warning. Default keeps current sim setting. - Values: true or false
 - **safariOpenLinksInBackground** - (Sim-only) Whether Safari should allow links to open in new windows. Default keeps current sim setting. - Values: true or false
 - **keepKeyChains** - (Sim-only) Whether to keep keychains (Library/Keychains) when appium session is started/finished - Values: true or false
 - **localizableStringsDir** - Where to look for localizable strings. Default en.lproj - Values: en.lproj
 - **processArguments** - Arguments to pass to the AUT using instruments - Values: e.g., -myflag
 - **interKeyDelay** - The delay, in ms, between keystrokes sent to an element when typing. - Values: e.g., 100
 - **showIOSLog** - Whether to show any logs captured from a device in the appium logs. Default false - Values: true or false
 - **sendKeysStrategy** - strategy to use to type test into a test field. Simulator default: oneByOne. Real device default: "grouped" - Values: oneByOne, grouped or setValue
 - **screenshotWaitTimeout** - Max timeout in sec to wait for a screenshot to be generated. default: 10 - Values: e.g., 5
 - **waitForAppScript** - The ios automation script used to determined if the app has been launched, by default the system wait for the page source not to be empty. The result must be a boolean - Values: e.g. true;, target.elements().length > 0;, "\$.delay(5000); true;

2.5.16 Mobile Test Locator Dialog

Purpose

This dialog box lets you create a test locator for mobile applications using one of the supported methods (XPath, ID, etc.) and display the results of using that locator interactively.

Screenshot



How to Open

You open this dialog from the [Mobile Spy](#) by clicking the **Test Locator** button on that dialog.

How to Use

To use this dialog, you simply choose which type of locator you wish to test (in the example above we are using XPath on an iOS device) and click the button. The properties discovered from using this locator on the device in question will be displayed in the right panel.

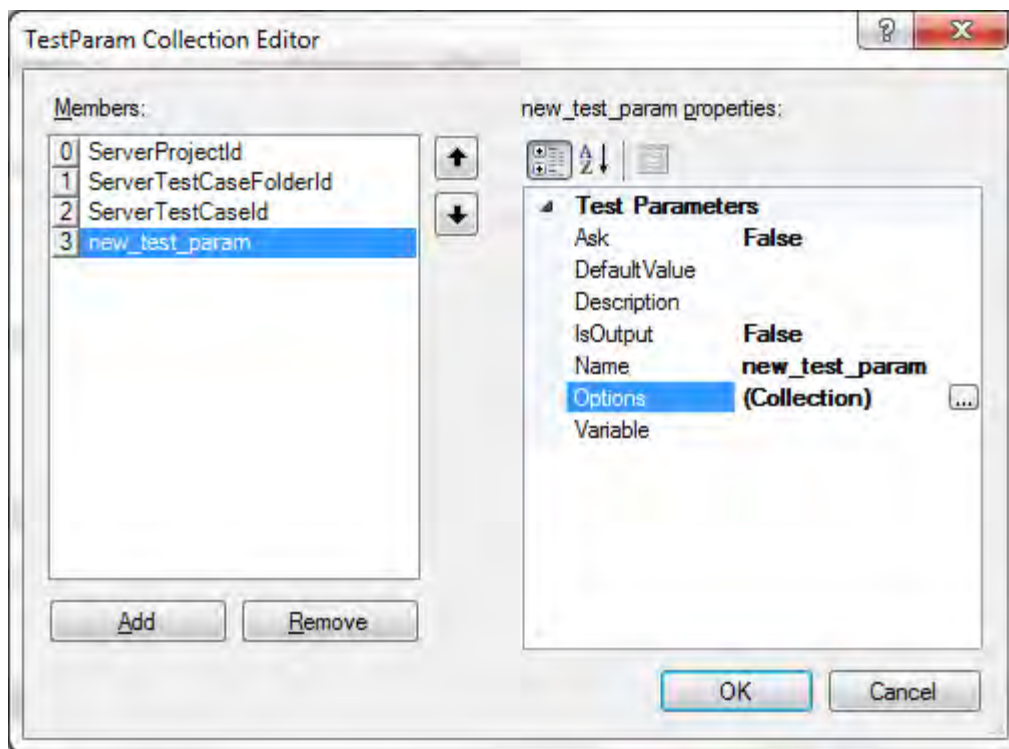
The following locator types are available:

- **XPath** - This allows you to enter an XPath selector that uniquely locates a specific element in the mobile object hierarchy
- **Id** - This allows you to enter the ID of a specific object and test to see if it can be found.
- **CSS** - For mobile website testing only, this lets you enter a CSS selector that can uniquely locate an object
- **Tag Name** - This lets you find elements by their Tag Name field. For web testing this is the name of the DOM element.
- **Class Name** - This lets you find elements by their UI Component Type
- **Name** - This lets you find elements by their Name field
- **Android** - This lets you enter a string corresponding to a recursive element search using the UiAutomator Api (Android-only)
- **iOS** - This allows you to enter a string corresponding to a recursive element search using the UIAutomation library (iOS-only)
- **Accessibility** - This lets you enter a string corresponding to a recursive element search using the Id/Name that the native Accessibility options utilize.

- **Link** - Based on the WebDriver standard, it lets you find hyperlinks using an *exact match* of the link anchor text
- **Partial Link** - Based on the WebDriver standard, it lets you find hyperlinks using a *partial match* of the link anchor text
- **Script** - For iOS testing, this lets you enter raw script that will be sent to the iOS device to find the element

2.5.17 NameValue Collection Editor Dialog

Screenshot

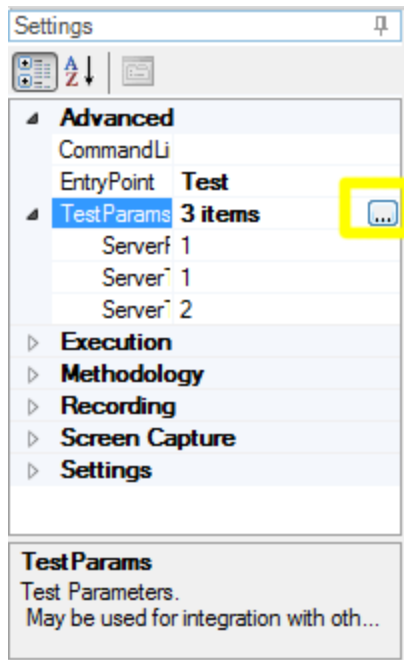


Purpose

To specify [Custom Strings](#) and their values.

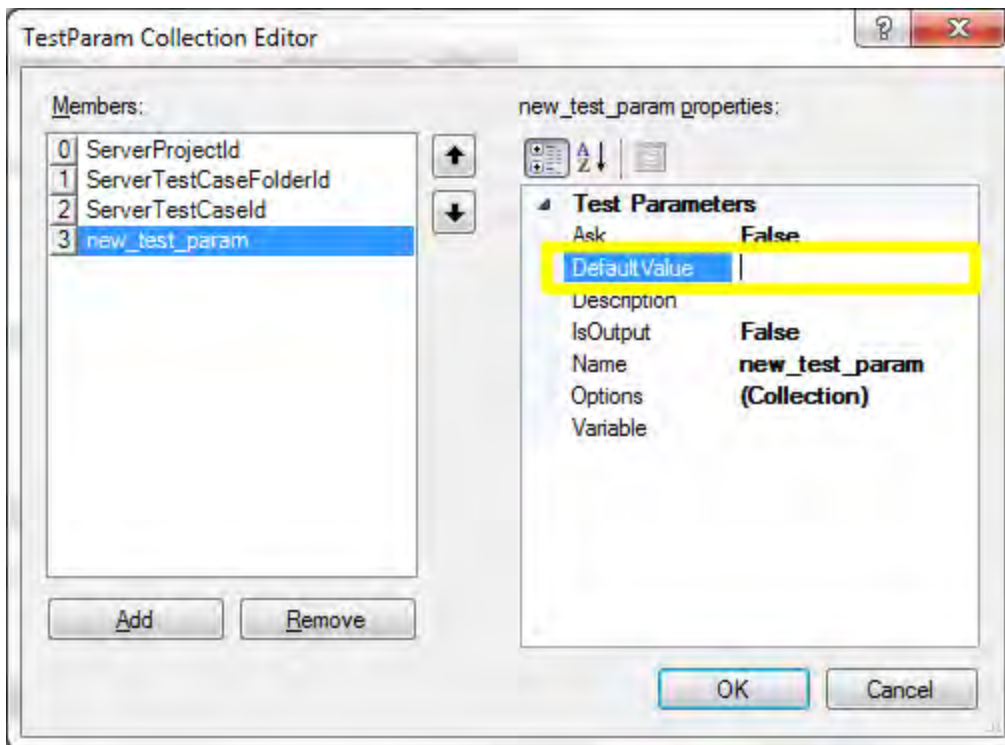
How to Open

Open from the [Settings Dialog](#), **TestParams** option:



Widgets

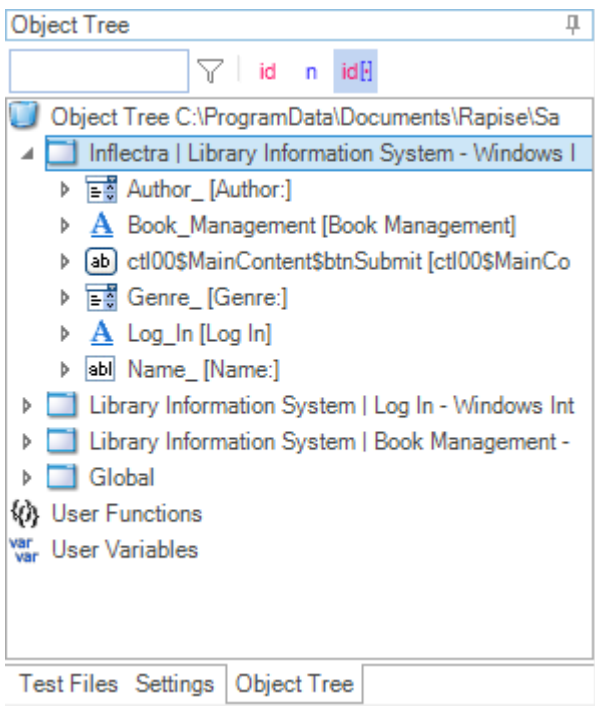
- **Add** a custom string. If you press **Add**, you'll see this:



- **Remove**: removes selected custom string.
- **OK**: Save changes and close dialog.
- **Cancel**: Close dialog without saving changes.

2.5.18 Object Tree Dialog

Screenshot



Purpose

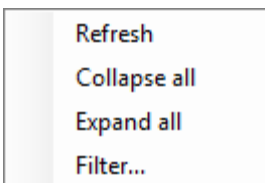
Display learned objects.

How to Open

The **Object Tree** dialog is part of the [Default Layout](#).

Context Menu (root node)

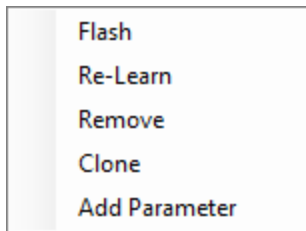
Right click the **Object Tree** node to see:



- **Refresh** checks for new objects to display.
- **Collapse all** collapses the entire object tree.
- **Expand all** expands the entire object tree.
- **Filter...** filters the object tree.

Context Menu (object)

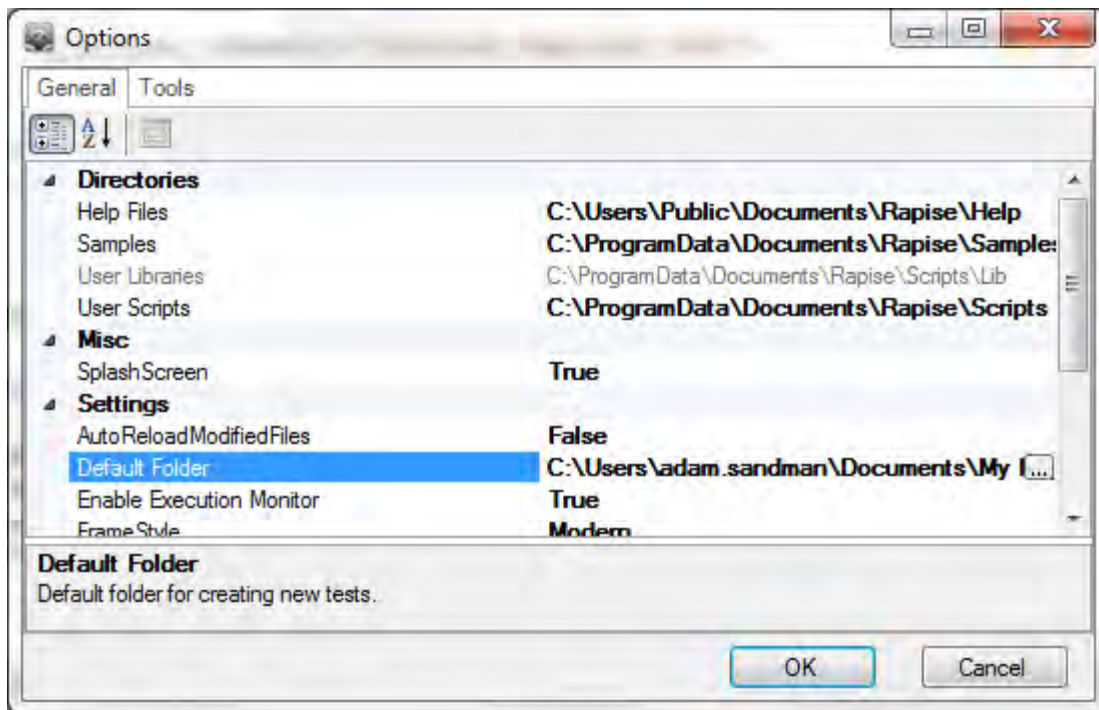
Right click on an object in the **Object Tree** dialog to see:



- **Flash** opens the application/url where the object is located. A frame will blink around the object to show you where it is on the page.
- **Re-Learn** will open up the [Recorder](#), allowing you to re-learn the object. This is useful if the AUT has changed and the object definition will no longer correctly locate the object.
- **Remove** simply removes the selected object from the tree.
- **Clone** makes a copy of the object definition and adds the cloned version into the tree. You can then make changes to the cloned copy.
- **Add Parameter** opens up a dialog box that lets you add a custom parameter to the learned object definition (stored in the **Test.objects.js** file).

2.5.19 Options Dialog

Screenshot

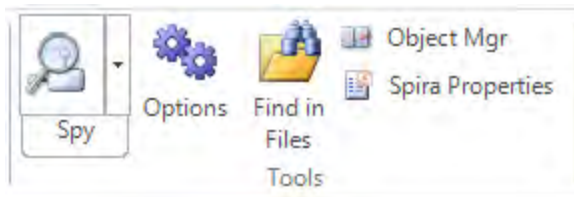


Purpose

Use the **Options** dialog to change Rapise settings. Your changes will apply to all tests.

How to Open

Press the **Options** button on the Ribbon (**Test** tab > **Tools** menu).



Misc

Misc	
SplashScreen	True

- **SplashScreen**: A splash screen is the image that appears while a program initializes. The Rapise splash screen looks like this:



1.1.24

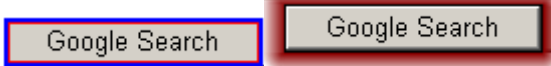
Set **SplashScreen** to **False** to prevent the splash screen from appearing.

Settings

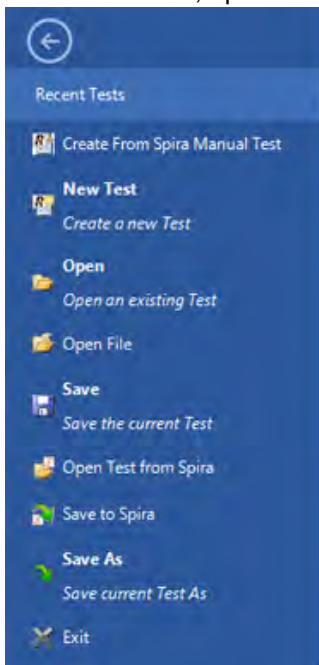
Settings	
AutoReloadModifiedFiles	True
DefaultFolder	Temp
FrameStyle	Modern
LoadLastTestOnStartup	True
NormalizeFileNames	True
RecentTests	10
ShowStartPageOnStartup	True
StyleLibrary	

- **AutoReloadModifiedFiles**: If set to **True**, any files you modify outside of Rapise are automatically reloaded in Rapise.
- **DefaultFolder** specifies where new tests are kept before you explicitly save them. The location is relative to the Rapise executable.
- **DefaultSpy** specifies which of the various types of [Object Spy](#) will be displayed by default.
- **Enable Execution Monitor** - specifies whether the execution monitor dialog box will be displayed during [playback](#).

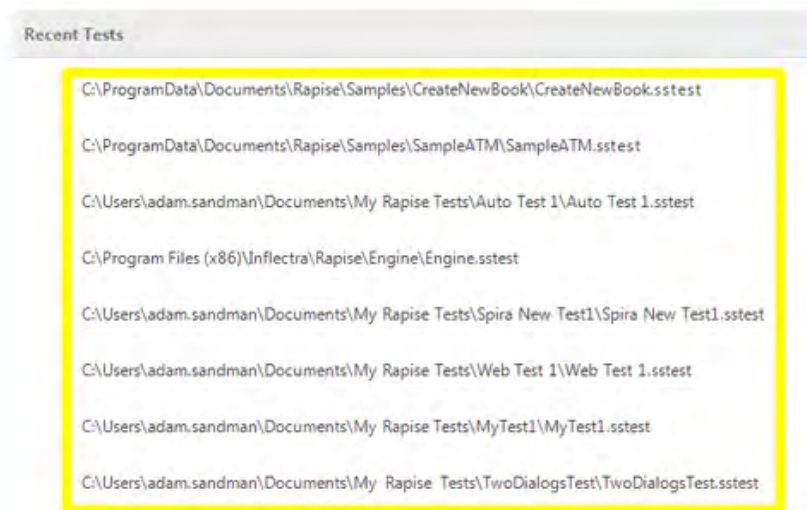
- **FrameStyle**: Specifies which frame to draw around objects when you [Record](#), [Learn](#), and [Spy](#). The **Basic** frame is on the left and the **Modern** frame is on the right:



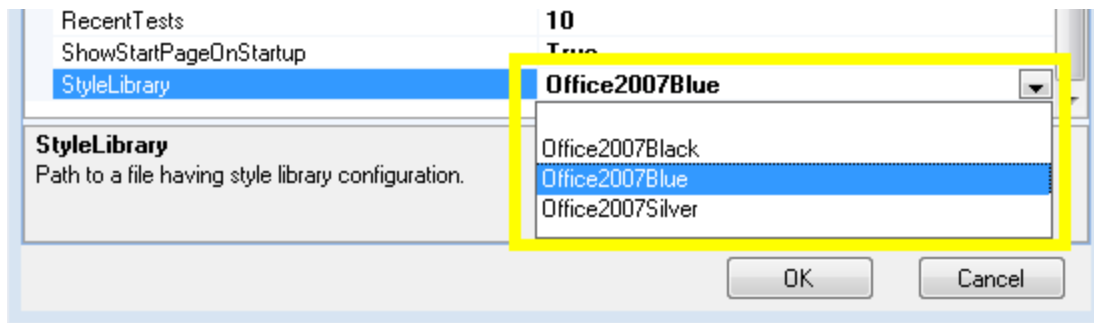
- **LoadLastTestOnStartup**: If set to **True**, Rapise will open the last test you worked on and saved. If set to **False**, Rapise will create a new test named MyTest<#> where <#> is an integer. A folder for MyTest<#> is created in the folder specified by the **DefaultFolder** option.
- **NormalizeFileName**: If set to **True**, files are referred to (in the *.sstest file) using a path relative to the *.sstest file. Otherwise, their absolute path is used.
- **RecentTests**: The maximum number of recent files displayed in the **Recent Tests** list. To see the Recent Tests list, open the Application Menu:



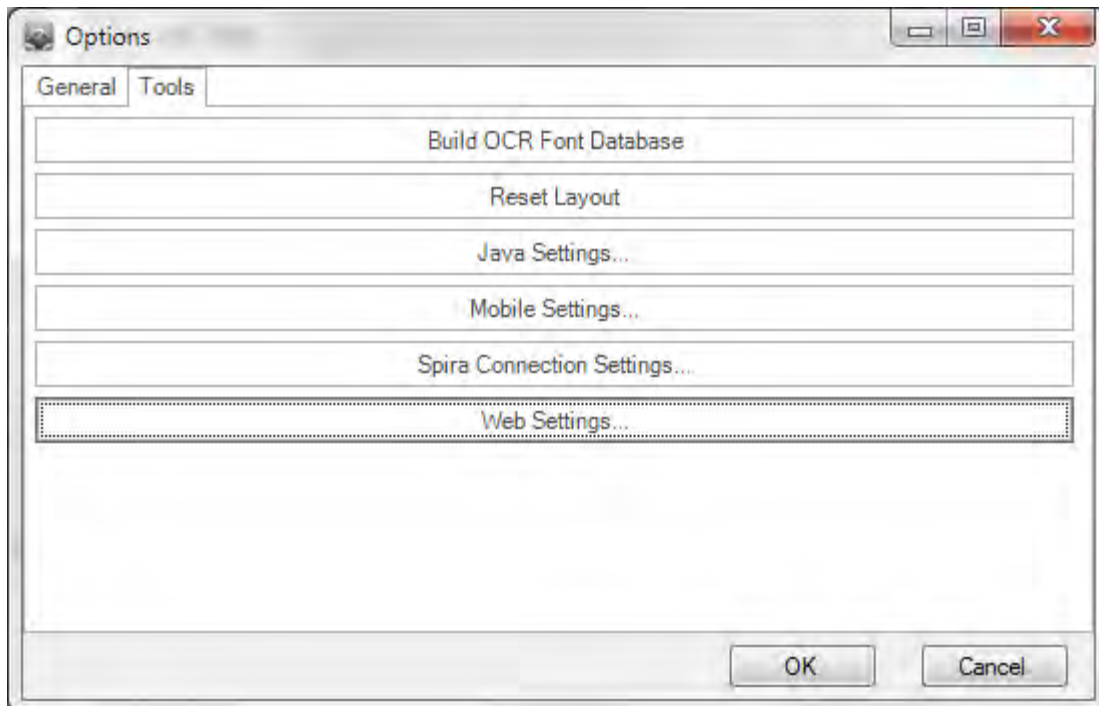
Rapise 2.1.3.33 [C:\ProgramData\Documents\Rapise\Samples\Creat



- **Remember Debugger Layout**: If **True**, Rapise will remember the window layout for debug mode separately. For example, this may be useful if you want to work full screen while authoring the Test and half-screen to debug. This way the AUT and the Rapise debugger fit on the screen.
- **ShowDashboardOnStartup**: If **True**, the [Spira Dashboard](#) will open automatically when Rapise is opened.
- **ShowStartPageOnStartup**: If **True**, the [Start Page](#) will open automatically when Rapise is opened.
- **StyleLibrary**: determines the color scheme of the Rapise window. If you click on StyleLibrary, you'll notice that a drop down arrow appears to the right. Press the arrow to see all of the Style options:



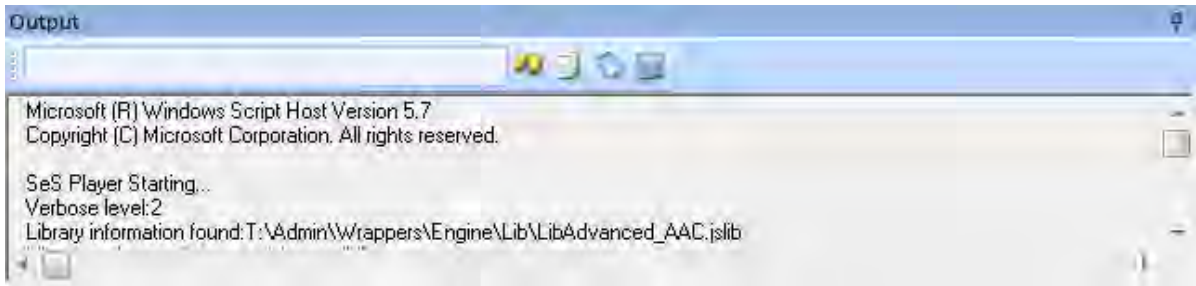
Tools Tab



- **Build OCR Font Database:** Pressing the **Build OCR Font Database** button updates the list of screen fonts that Rapise recognizes when using an OCR object. Whenever you install new Fonts onto the computer you should click this button to have then added to the Rapise font database.
- **Reset Layout:** Pressing the **Reset Layout** button restores the [default layout](#). Rapise will restart.
- **Java Settings:** Pressing the **Java Settings** button displays the [Install Java Access Bridge](#) dialog box. Installing the Java Access Bridge lets Rapise connect to Java AWT/Swing applications so that they can be tested.
- **Mobile Settings:** Pressing the **Mobile Settings** button displays the [Mobile Settings](#) dialog box. This lets you configure the different mobile devices that are available for testing by Rapise.
- **Spira Connection Settings:** Pressing the **Spira Connection Settings** button takes you to a dialog box that lets you change how Rapise is integrated with the [SpiraTest](#) test management system. It will let you change the URL, username and password used to connect.
- **Web Settings:** Pressing the **Web Settings** button displays the [Web Settings](#) dialog box. This lets you change the settings related to web testing and the [web spy](#).

2.5.20 Output View

Screenshot



Purpose

The **Output View** displays Rapise output. The amount of output depends on the [Verbosity Level](#).

How to Open





The **Output view** is part of the [Default Layout](#).

Writing to the Output View

Use the global **Log()** function to write to the **Output View**.

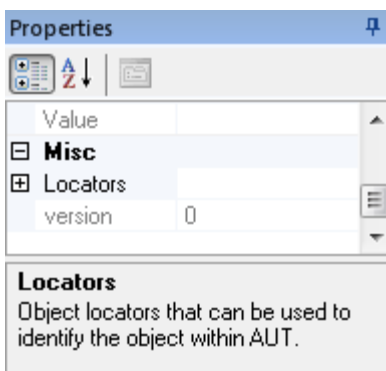
Widgets



- The text box is a search box.
- The icons from left to right are **Find Next Entry** , **Copy Selected** , **Clear All Text** , and **Select All Text** .

2.5.21 Properties Dialog

Screenshot



Purpose

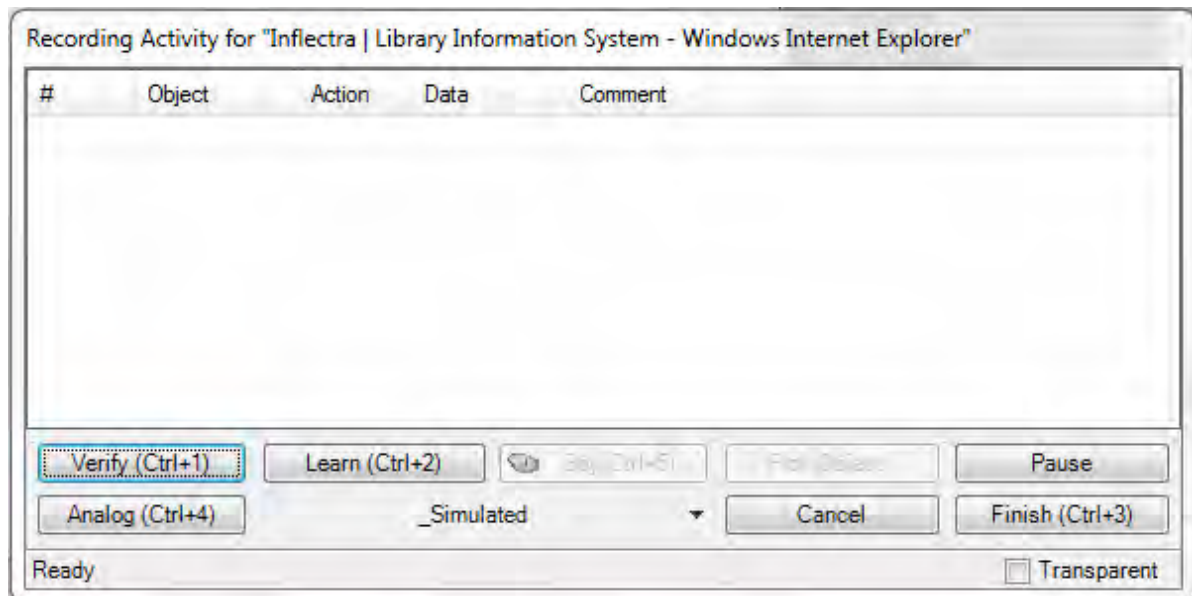
To display the properties of the object, file, or folder you last clicked on. Objects are in the [Object Tree Dialog](#) and files/folders are in the [Test Files Dialog](#).

How to Open

The **Properties** Dialog is part of the [Default Layout](#).

2.5.22 Recording Activity Dialog

Screenshot



Purpose

The **Recording Activity Dialog** is used for [Recording](#), Analog recording ([absolute](#) and [relative](#)), [Object Learning](#), and creating [Simulated Objects](#).

How to Open

1. Open the **Select an Application to Record Dialog**. Instructions are [HERE](#).
2. You must select two things: (1) which recording library to use during the recording session and (2) which process/program to record. Look [HERE](#) for more information on using the Select Application to Record Dialog.
3. Press either **Select** or **Run** on the Select Application to Record dialog to open the Recording Activity Dialog.

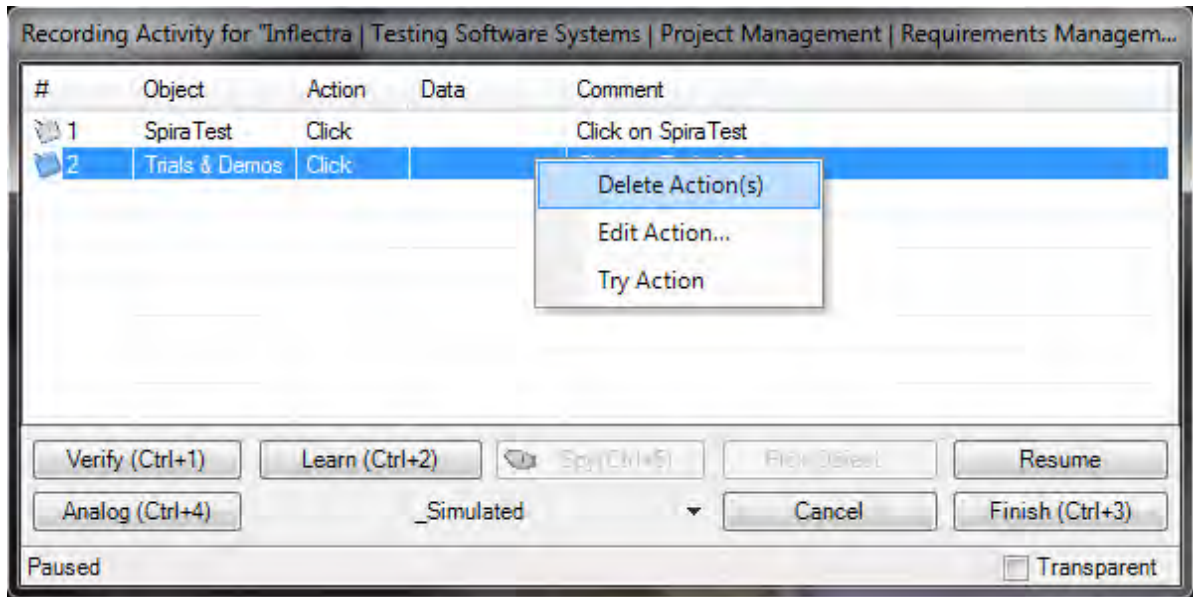
The Grid

As you interact with the AUT (Application Under Test), your actions are recorded in the grid of the **Recording Activity dialog**. The following screenshot shows the Recording Activity dialog after two interactions with [www.google.com](#): (1) first, **Inflectra** was entered into the query text box and (2) the **Google Search** button was then pressed.

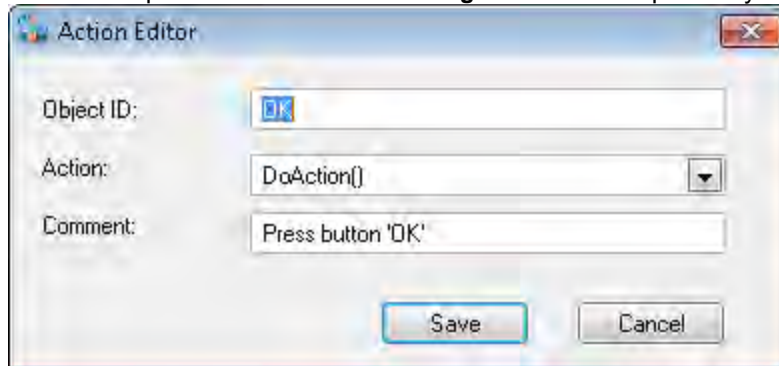
#	Object	Action	Data	Comment
1	q	SetText	Inflectra	Set Text Inflectra in q
2	btnG	Click		Click on btnG

Context Menu

If you right click in the grid, you'll see a context menu with three options:

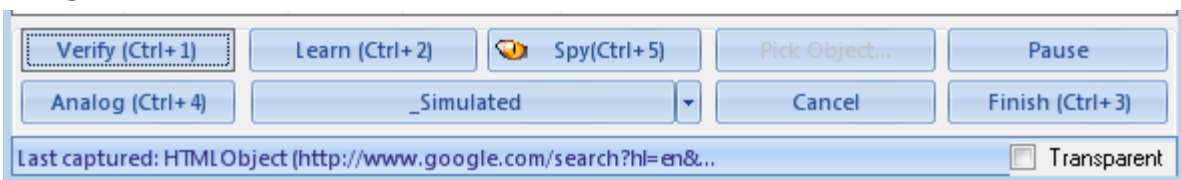


- **Delete Action** removes the selected row.
- **Edit Action** opens the **Action Editor Dialog**. This is also opened by double-clicking a grid entry.



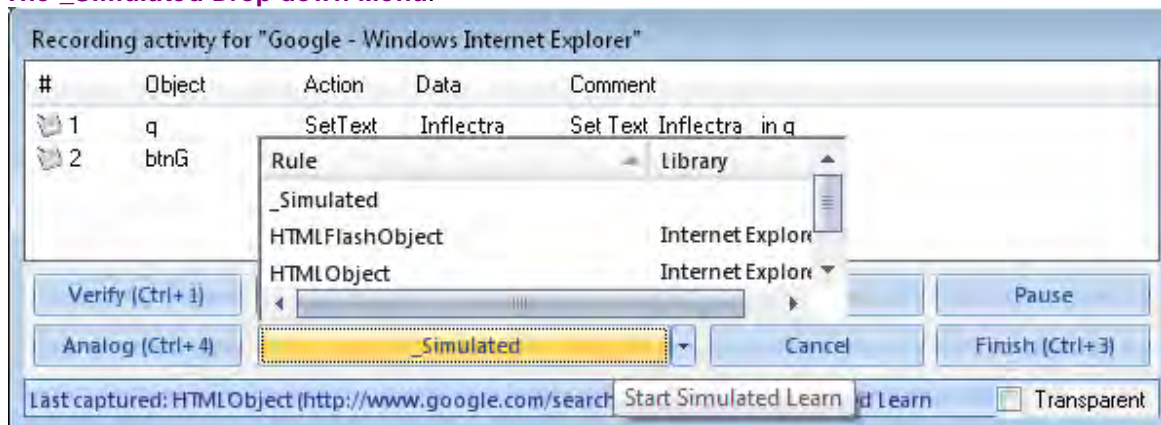
- Press **Try Action** and Rapise will execute the action.

Widgets



- **Verify**: Press to open the [Verify Object Properties](#) dialog.

- **The Learn Shortcut:** Use to [learn](#) an object.
Place the mouse cursor over the object you wish to learn. It should become highlighted with a purple box. Press Ctrl+2 while the object is highlighted. You will see a line added to the Recording Activity dialog, signifying that the object was learned.
- **The Spy Button:** The Spy Button opens the **Object Spy dialog**. The Object Spy dialog allows you to view the state of the objects in your program. Viewing object state is called [Object Spying](#). The Object Spy dialog is described [here](#).
- **Pick Object:** Use if the object you wish to learn is invisible (covered by another object). Pick Object is disabled for Web Application recording. **For mobile device testing, Pick Object is the only way to record events.**
 1. The Pick Object button will open the [SeS Spy Dialog](#).
 2. Spy on the obstructing object. (Press **Start Tracking**, mouse over the object, press CTRL+G)
 3. Select the item you wish to learn from the **Tree** section.
 4. Press the **Learn Selected** button.
- **The Pause Button:** The Pause Button on the RA dialog temporarily stops Recording. Any interacting you do with the AUT is ignored. When you press the Pause Button, the title of the button changes to **Resume**. Press the **Resume** button to continue recording.
- **The Analog Button:** The Analog button begins [Analog Recording](#). Analog Recording tracks mouse movements, keyboard inputs, and clicks. To end Analog Recording, press **CTRL+Break**.
- **The _Simulated Drop-down Menu:**

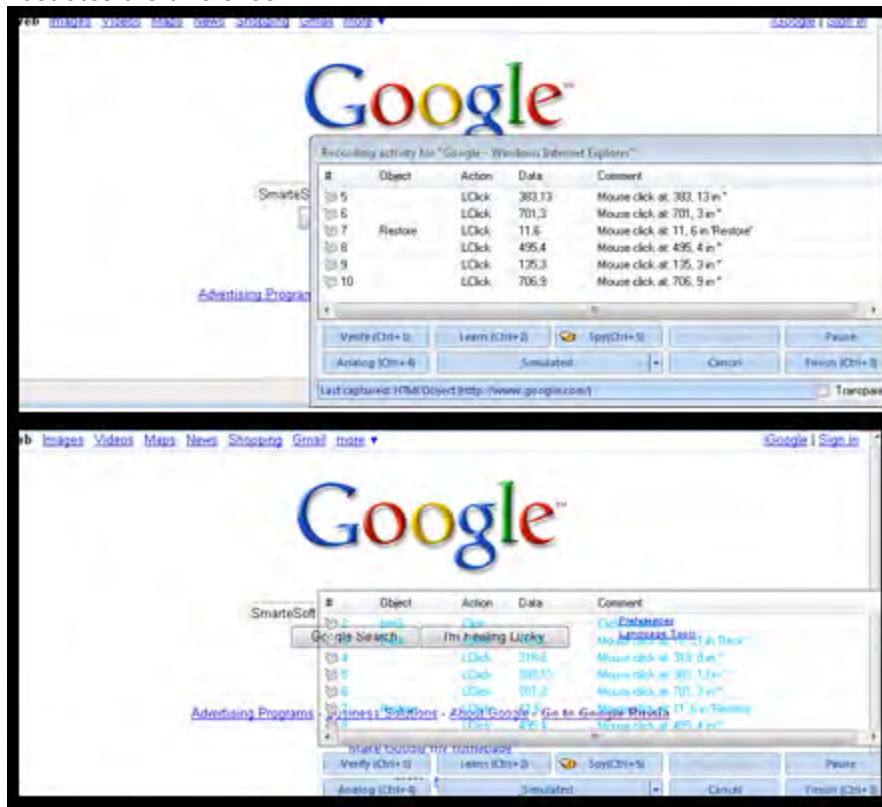


An object can be learned if it matches a rule specified in the [Recording/Learning libraries](#) available. The drop-down menu lists the possible rules for learning objects in the current application. If you cannot learn an object with one rule, try another in the list. Create a **Simulated Object** only if the other, more flexible alternatives have been exhausted.

Learning using a specific rule:

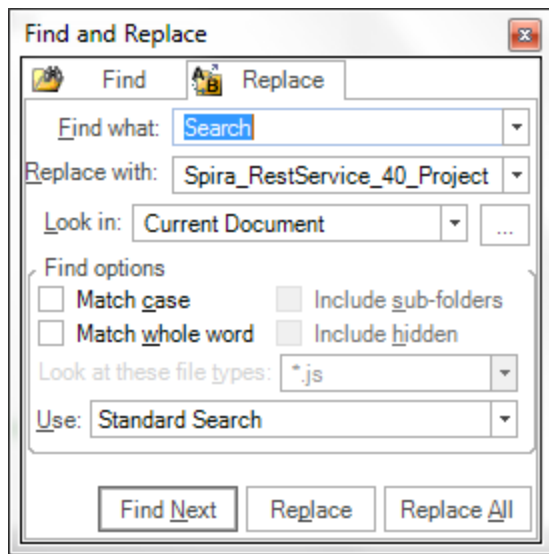
1. Double click on a rule in the drop down list. The button text should change to the text that you selected
2. Press the button
2. Select an object on the screen and make sure it is highlighted with a rectangle
3. Press **Ctrl+2** to learn the object

- **The Cancel Button:** The Cancel button stops Recording, closes the RA dialog, and discards any actions recorded or objects learned during the Recording session.
- **The Finish Button:** The Finish button ends the Recording session. The RA dialog is closed, and the information collected during Recording is used to create a script. The script is displayed.
- **Transparent Option:** While the RA dialog is open, it is always on top. The Transparent checkbox makes the RA Dialog transparent so that you can interact with objects behind it. The image below illustrates the difference:



2.5.23 Replace Text Dialog

Screenshot



Purpose

Replace occurrences of the **Search Term** text with the **Replacement Text** in the currently visible [Source Editor](#).

How to Open

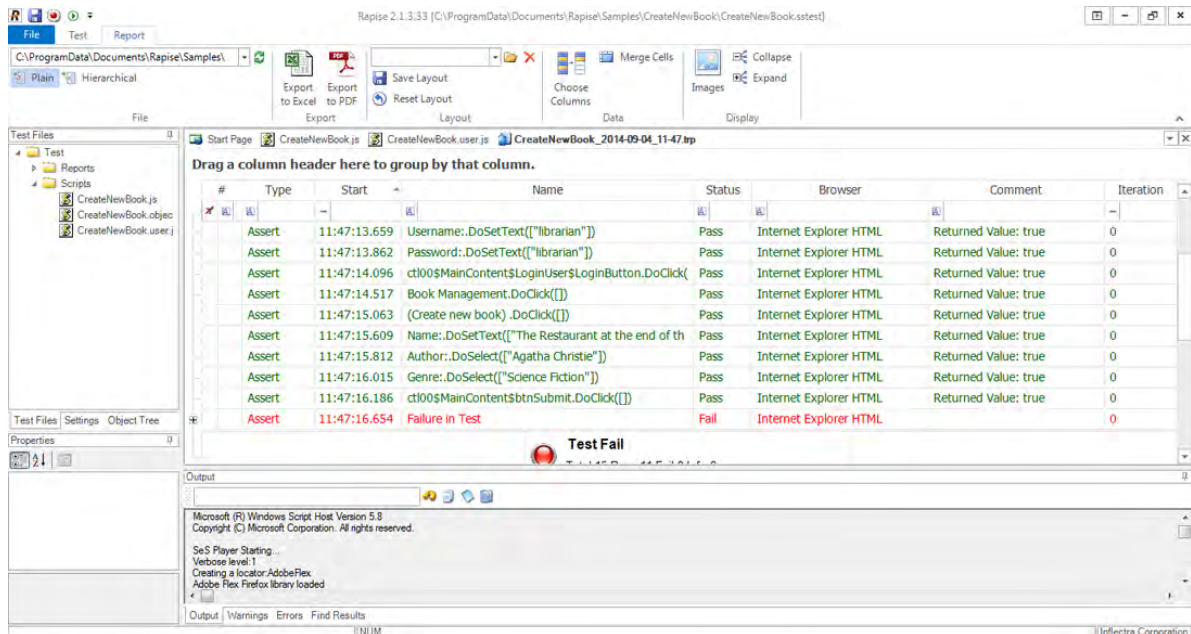
Ribbon > [Edit Tab](#) > **Search** menu > **Replace** button.

Replace Tab

- **Find what:** Place the string you would like to search for in the **Find what** text box.
- **Look In:** this option specifies where the search will take place. You can limit the search to: current document, current selection, current test, the entire test and subtests, or a specific folder.
- **Match case option:** If unselected, case is ignored in the search.
- **Match whole word option:** If set to true, parts of words will not count as matches.
- **Replace with text-box:** All occurrences of the string in the **Find what** text-box will be replaced with the string in the **Replace with** text-box when you press the **Replace** button.

2.5.24 Report Viewer

Screenshot



Purpose

The **Report Viewer** displays test result (trp) files.

How to Open

Use the [Test Files Dialog](#) to open a report (trp) file. The report file will be opened in a **Report Viewer** in the [Content View](#). The [Report Tab](#) of the Ribbon will also open.

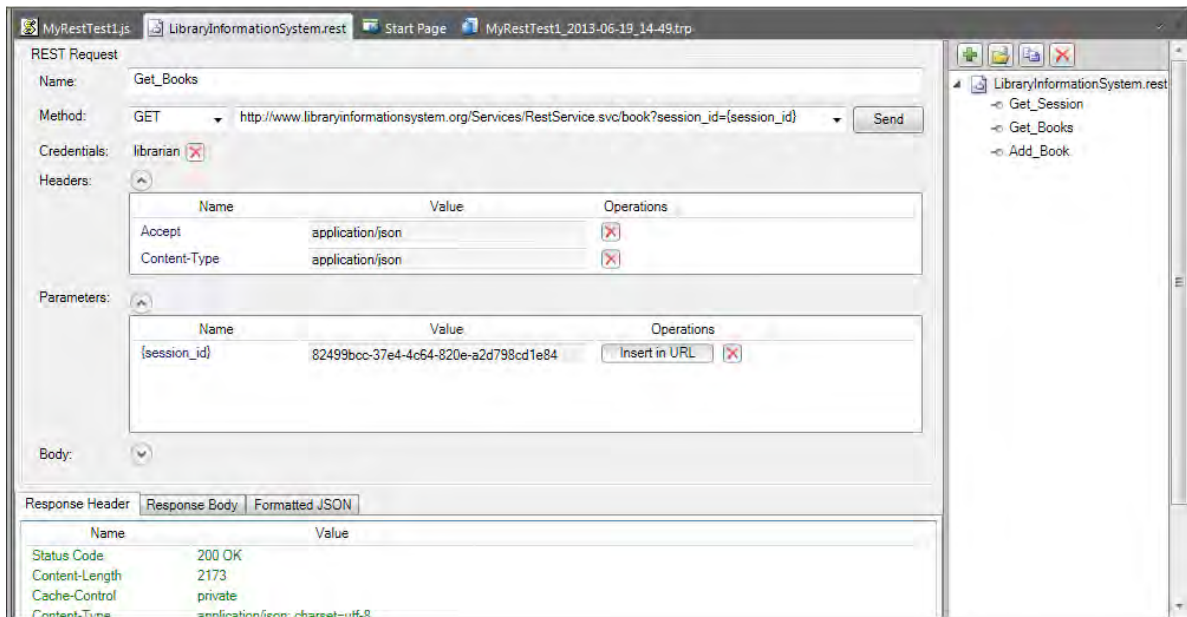
Or, you can [Playback](#) the test script. The report file will display in a **Report Viewer** after the test completes.

See Also

- For more info on Reports, see [Automated Reporting](#).
- For information on manipulating reports, see [Ribbon: Report](#).

2.5.25 REST Definition Editor

Screenshot



Purpose

The **REST Definition Editor** allows you to edit [REST web service](#) definition files (.rest).

How to Open

Use the [Add Web Service Dialog](#) to create a new REST definition (.rest) file. The definition file will be opened in a **REST Editor** in the [Content View](#). The [REST Tab](#) of the Ribbon will also open.

Or, you can double-click on an existing .rest file in the [Test Files View](#) explorer window. The definition file will be opened in a **REST Editor** in the [Content View](#). The [REST Tab](#) of the Ribbon will also open.

Request

REST Request

Name: Add_Book

Method: POST `http://www.libraryinformationsystem.org/Services/RestService.svc/book?session_id={session_id}`

Credentials: librarian

Headers:

Name	Value	Operations
Accept	application/json	<input type="button" value="X"/>
Content-Type	application/json	<input type="button" value="X"/>

Parameters:

Name	Value	Operations
{session_id}	82499bcc-37e4-4c64-820e-a2d798cd1e84	<input type="button" value="Insert in URL"/> <input type="button" value="X"/>

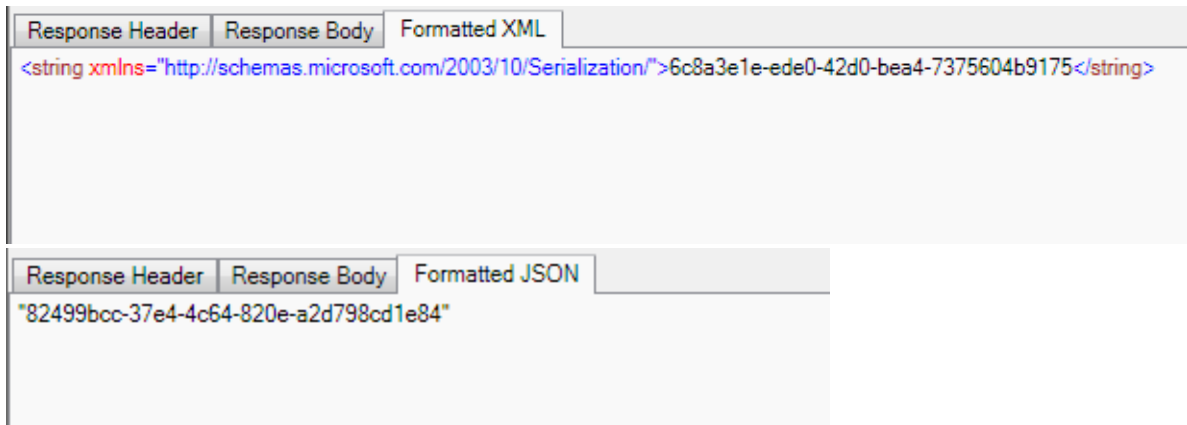
Body:

The request form has several sections that you need to populate:

- **Method** - the type of HTTP request being made (GET, POST, PUT, DELETE, etc.)
- **URL** - the URL of the web service request with any parameter tokens included (e.g. {session_id} in our example above)
- **Credentials** - Any HTTP Basic Authentication Headers
- **Headers** - Any other HTTP headers (both standard and custom)
- **Parameters** - Any parameters that have been defined in the URL that will be called from the Rapise test script.
- **Body** - The body of the request (for POST and PUT requests). This can be in any text-serialized format such as XML or JSON.

Response

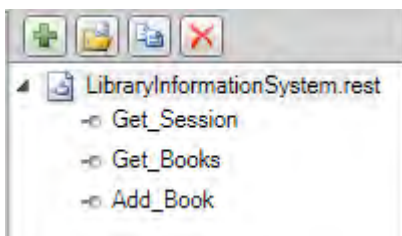
Response Header		Response Body	Formatted XML
Name	Value		
Status Code	200 OK		
Content-Length	113		
Cache-Control	private		
Content-Type	application/xml; charset=utf-8		
Date	Thu, 20 Jun 2013 18:00:27 GMT		
Set-Cookie	ASP.NET_SessionId=3ggghumijkg54n4xb02ht		
Server	Microsoft-IIS/7.0		
X-AspNet-Version	4.0.30319		
X-Powered-By	ASP.NET		



This displays the output from the last web service request. It has several tabs:

- **Response Header** - Displays a list of the HTTP response headers (name and value). If the request received a 200 OK code back, it's displayed in **green**, if it receives an error code back, it's displayed in **red**.
- **Response Body** - Displays the raw text of the HTTP response body received from the server.
- **Formatted XML** - If the received body content is identified as XML, this tab displays nicely formatted XML that is easier to read than the raw response body.
- **Formatted JSON** - If the received body content is identified as JSON, this tab displays nicely formatted, indented JSON that is easier to read than the raw response body.

Operation Explorer



This section lets you add, open, delete and clone REST requests in the definition file.

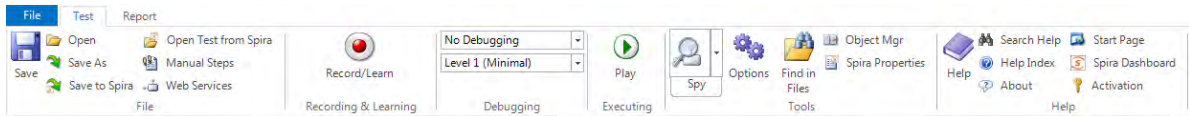
- **Add request** - Adds a new REST operation to the current .REST definition file
- **Open request** - Opens the currently selected REST operation in the current .REST definition file. This is the same as double-clicking on the item name.
- **Clone request** - Makes a copy of the currently selected REST operation and allows you to give the copy a new name.
- **Delete request** - Deletes the currently selected REST operation from the current REST definition file.

See Also

- For more info on REST Web Services, see [REST Web Services](#).
- For a tutorial on creating a REST web service test, see the [Web Services REST Tutorial](#).

2.5.26 Ribbon: Test

Screenshot



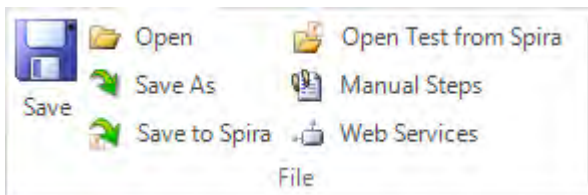
Purpose

The **Test** tab provides tools to help with creating and executing tests. It also provides the options to add web services and/or manual test steps to the current test.

How to Open

The **Test** tab is always available.

File



The File section provides the following options:

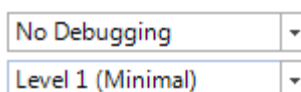
- **Save** - saves the current test locally
- **Save As** - allows you to create a new, differently named copy of the test you are editing
- **Save to Spira** - allows you to save the Rapise test so that it updates the version in your [Spira](#) test management repository
- **Open Test from Spira** - allows you to open a Rapise test that is stored in a [SpiraTest](#) test management repository
- **Manual Steps** - displays the [Manual Test Steps Ribbon](#) that lets you view and edit the [manual tests](#) associated with this test.
- **Web Services** - allows you to add a new [web service](#) definition to your Rapise test. Clicking on this displays the [Add Web Service](#) dialog box.

Recording and Learning



- Press the **Record/Learn** button to open the [Recording Activity Dialog](#).

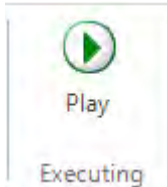
Debugging



Debugging

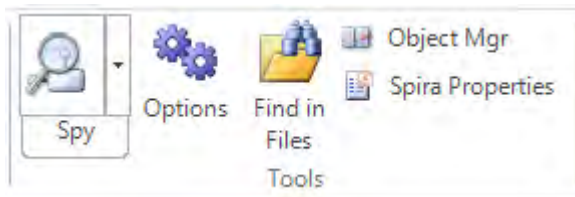
- The top drop-down list specifies if you would like to use an [External Debugger](#). If so, you can either connect on execution (the **Run with External Debugger** option) or only connect if an error occurs (the **Run External Debugger on Error** option).
- The lower drop-down list controls the [Verbosity Level](#).

Executing



- Press **Play** to execute the test script (*.js) file associated with the open test. You can change which test script to open in the [Settings Dialog](#). The test script is specified by **Settings** > **ScriptPath**.

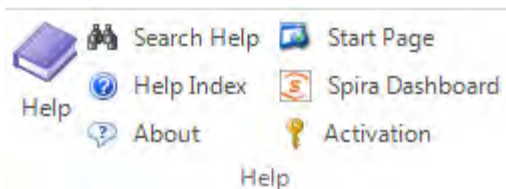
Tools



The Tools section provides the following options:

- The **Spy** button opens the [Spy Dialog](#).
- Press the **Options** button to open the [Options Dialog](#).
- The **Find in Files** button opens the [Find and Replace Dialog](#).
- The **Object Mgr** button opens the [Object Manager](#) add-in.
- **Spira Properties** allows you to see the name of the SpiraTest project and test case that the current Rapise test is linked to.

Help



- The **Help** button opens the Rapise user's manual and makes the **Contents** tab visible.
- The **Search Help** button opens the Rapise user's manual and makes the **Search** tab visible.
- The **Help Index** button opens the Rapise user's manual and makes the **Index** tab visible.
- The **Start Page** button opens the Rapise [Start Page](#).
- The **Spira Dashboard** button opens the Rapise [Spira Dashboard](#).
- The **Activation** button opens the Rapise license activation screen. This can be used to deactivate the current license so that it can be used on a different machine.

2.5.27 Ribbon: Report

Screenshot



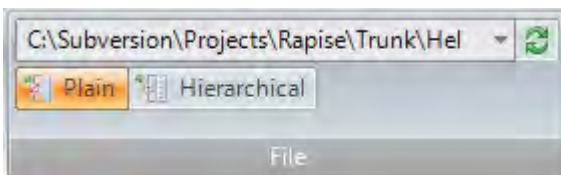
Purpose

The **Report** tab is for use with report (trp) files.

How to Open

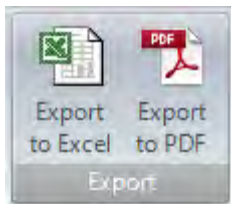
The **Report** tab is available anytime you have a report (trp) file visible in the [Content View](#).

File



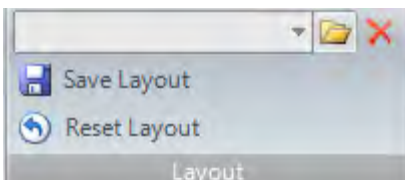
- The drop-down menu contains a history of previously opened reports.
- Press **Plain** to view test steps, assertions, and messages aligned in a table.
- Press **Hierarchical** to more clearly see what assertions, messages, and data are associated with which test steps.

Export



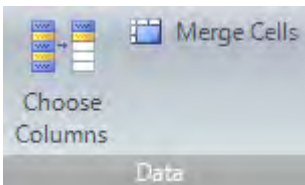
- Press **Export to Excel** to save the report as an excel file.
- Press **Export to PDF** to save the report as an Acrobat PDF file.

Layout



- The drop-down menu lets you choose between previously saved layouts.
- You must press **Save Layout** to keep your layout changes after closing Rapise.
- Press **Reset Layout** to undo any changes you've made.

Data



- Press **Choose Columns** to hide or reveal report columns.
- **Merge Cells**: Merge identical consecutive cells.

Display



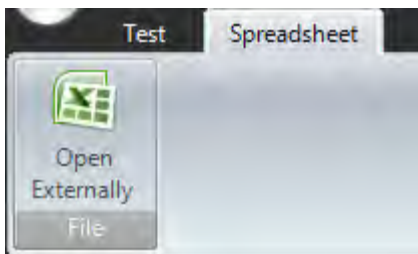
- **Images**: Toggle between hiding and revealing images.
- **Collapse**: Collapse the report to show only the top level. What is visible will depend on how the report is sorted.
- **Expand**: Expand all report rows.

See Also

- [Automated Reporting](#)

2.5.28 Ribbon: Spreadsheet

Screenshot



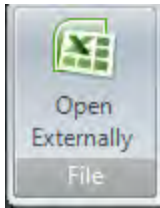
Purpose

The **Spreadsheet** tab is for use with excel (xls) files.

How to Open

The **Spreadsheet** tab is available anytime you have an excel (xls) file visible in the [Content View](#).

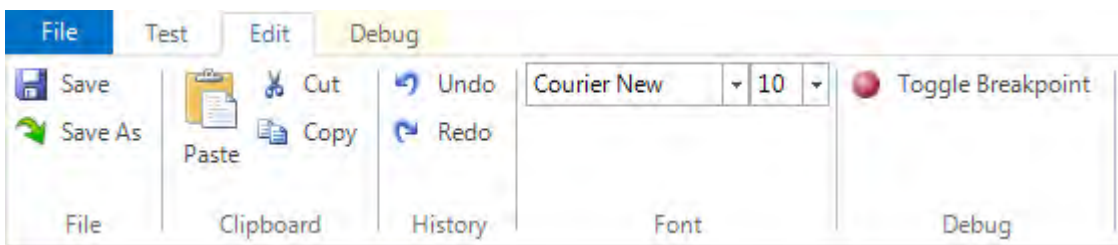
File



- The **Reload** button reloads the excel file from disk. Use it if the excel spreadsheet was modified by an external application after you opened it in Rapise.

2.5.29 Ribbon: Edit

Screenshot



Purpose

The **Edit** tab of the Ribbon provides tools for editing script files.

How to Open

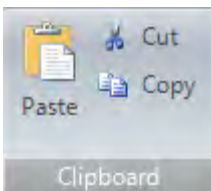
The **Edit** tab is available anytime you have a javascript file visible in the [Content View](#).

File



- The **Save** button (Shortcut: CTRL+S) saves the script file you are editing.
- The **Save As** button allows you to create a new, differently named copy of the script file you are editing.

Clipboard



- The **Paste** button (Shortcut: CTRL+V) pastes from the clipboard.
- The **Cut** button (Shortcut: CTRL+X) erases whatever text you have highlighted, and copies it to the

clipboard.

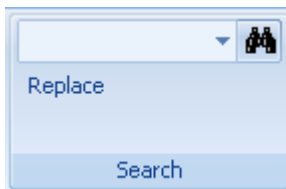
- The **Copy** button (Shortcut: CTRL+C) copies whatever text you have highlighted to the clipboard.


History



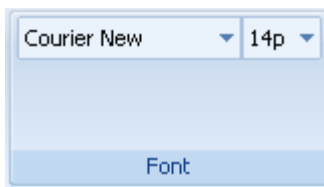
- The **Undo** button (CTRL+Z) reverses the last deletion or insertion made in the [Source Editor](#).
- The **Redo** button (CTRL+Y) reverses the last undo action.

Search



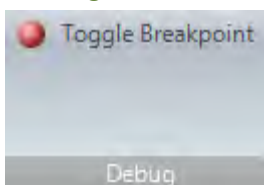
- The above text box is a search box.
- Pressing the find button  opens the [Find Text dialog](#).
- The **Replace** button opens the [Replace Text Dialog](#).

Font



- Use the above font and size drop-down menus to change the text appearance. The entire file will be affected.

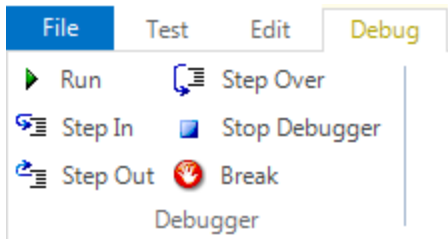
Debug



- Press the **Toggle Breakpoint** button (Shortcut: F9) to insert or remove a breakpoint at the current cursor position.

2.5.30 Ribbon: Debugger

Screenshot



Purpose

The **Debugger Tab** provides tools for use with the [Internal Debugger](#).

How to Open

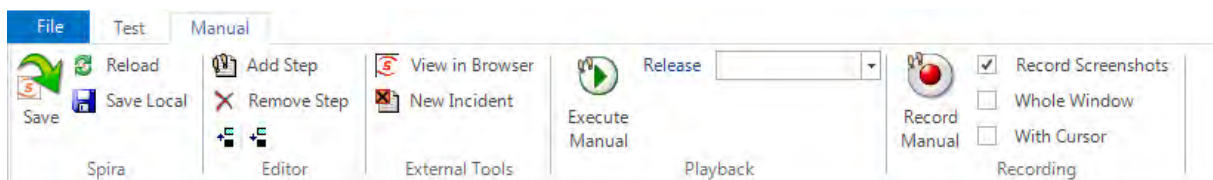
The **Debugger Tab** is available while the **Internal Debugger** is being used. To use the Internal Debugger, first enable it, then [Playback](#) your script. Instructions for enabling the Internal Debugger are [HERE](#).

Debugger

- **Run** (F5): Continue executing the script.
- **Step In** (F11): Step into a function/procedure.
- **Step Out** (Shift+F11): Continue until the current procedure is exited.
- **Step Over** (F10): Go to the next line in the current procedure/function.
- **Stop Debugger** (Shift+F5): Stop executing the script and exit the debugger.
- **Break** (F9): Create a breakpoint in the script at the cursor.

2.5.31 Ribbon: Manual

Screenshot



Purpose

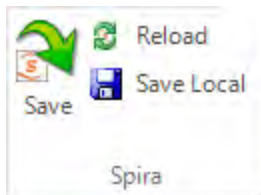
The **Manual** ribbon lets you record, edit and play [manual tests](#) that have either been created in Rapise or have been downloaded from [Spira](#). Rapise provides powerful **exploratory testing functionality** that lets you rapidly create manual tests by simply clicking through the application rather than having to laboriously create test steps one at a time by hand.

These [manual tests](#) can then be either [executed from within Rapise](#) or saved to Spira so that they can be executed by any tester that has access to the Spira web interface. In addition, these manual steps can be used as the basis for test automation by linking specific [test scenarios](#) to manual test steps.

How to Open

You can open the **Manual** ribbon by either clicking on the **Manual Steps** icon on the main [Test ribbon](#) or clicking on the **ManualSteps.rmt** file in the [Test Files](#) tab.

Spira



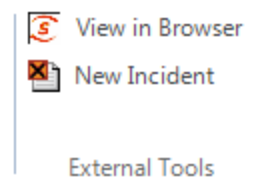
- The main **Save** icon will save the current test to Spira, both the manual test steps and any automated testing files.
- The **Reload** icon will refresh the current test from the copy holds in Spira.
- The **Save Local** will save the manual test steps and any open automation files locally. You can use this to save files before doing a batch upload to Spira.

Editor



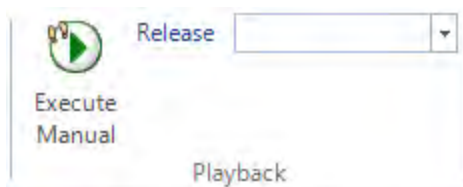
- The **Add Step** icon will add a new test step to the current manual test case displayed in the [manual test editor](#).
- The **Remove Step** icon will remove the highlighted test step from the current manual test
- The ↑ icon will move the highlighted test step **one position higher** in the current manual test
- The ↓ icon will move the highlighted test step **one position lower** in the current manual test

External Tools

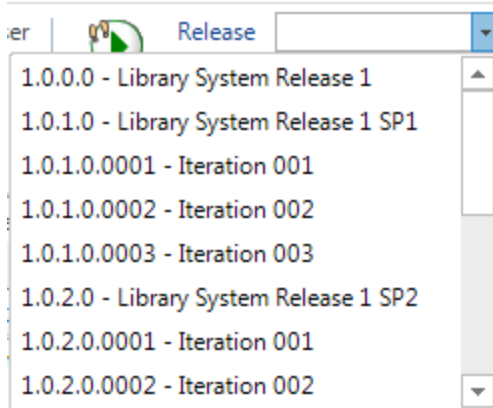


- The **View in Browser** icon will display the current manual test inside the [Spira](#) web interface
- The **New Incident** icon will open the [Incident Logging](#) dialog box so that you can log a new incident in Spira.

Playback

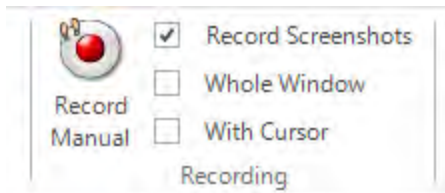


- The **Execute Manual** icon will execute the current manual test. When you click the Execute Manual icon, you will be asked to save the test case to Spira, then the latest version from Spira will be downloaded into the Rapise [manual test execution wizard](#) so that you can start manual testing.
- The **Release** dropdown list displays the list of releases in the current Spira project:



You can then choose the appropriate release that the current test is being executed against.

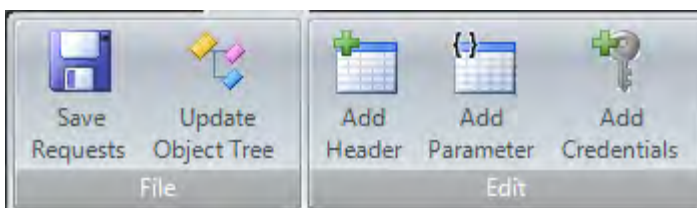
Recording



- The **Record Manual** icon will start the [Select Application to Record](#) dialog box. This dialog box is the same one that you'll use for automated testing, however when you click through the application under test it will record [manual test steps](#) instead of automated script code.
- The **Record Screenshots** option will tell Rapise to capture the current screenshot when performing manual recording and include the screenshot with the recorded test step. These are two sub-options:
 - **Record Whole Window** - When checked, this will record the entire window. Warning, this may take up large amounts of disk space. Otherwise it will record just the object underneath the current cursor.
 - **Record Cursor** - This will record the location of the mouse pointer/cursor inside the image.

2.5.32 Ribbon: REST

Screenshot



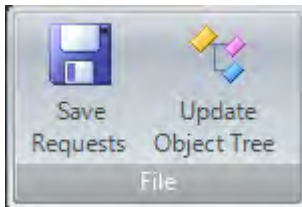
Purpose

The **REST** tab is for use with editing [REST web service](#) definition files.

How to Open

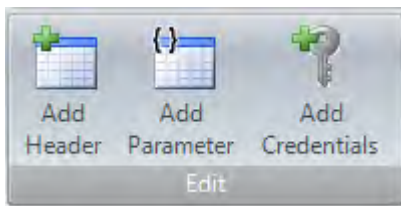
The **REST** tab is available anytime you have a REST definition file (.rest) file visible in the [Content View](#).

File

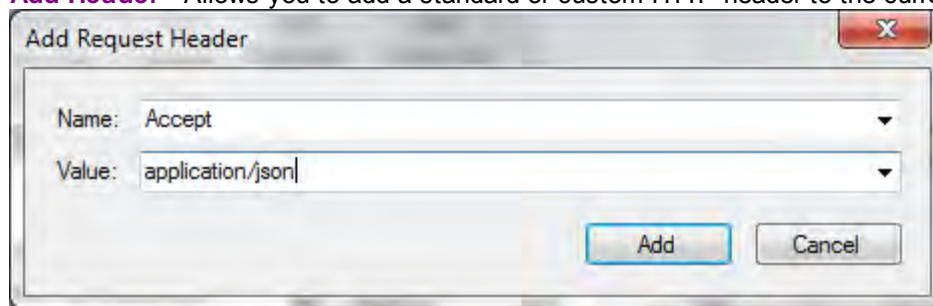


- **Save Requests** - Saves the current request definitions to the .rest file.
- **Update Object Tree** - Updates the main Rapise [Object Tree](#) with the current REST definitions. This turns each of your REST requests into Rapise learned objects that can be scripted against.

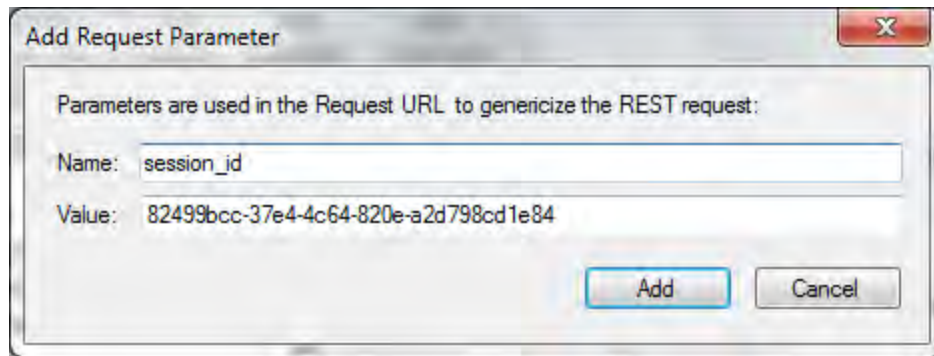
Edit



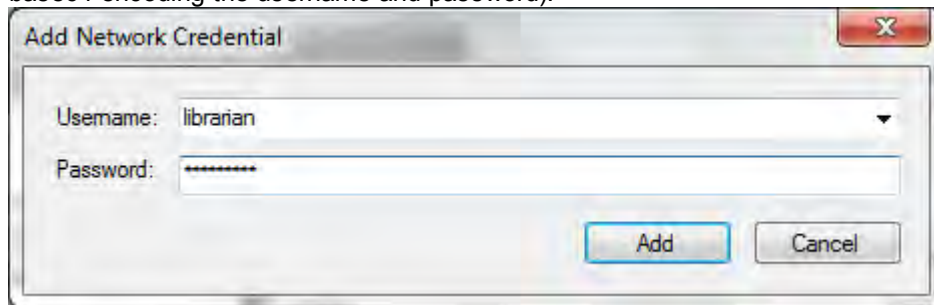
- **Add Header** - Allows you to add a standard or custom HTTP header to the current REST request:



- **Add Parameter** - Allows you to add a parameter name/value to the current REST request. This is useful when you want your test script to be able to pass through different values (e.g. get book #1 vs. book #2):

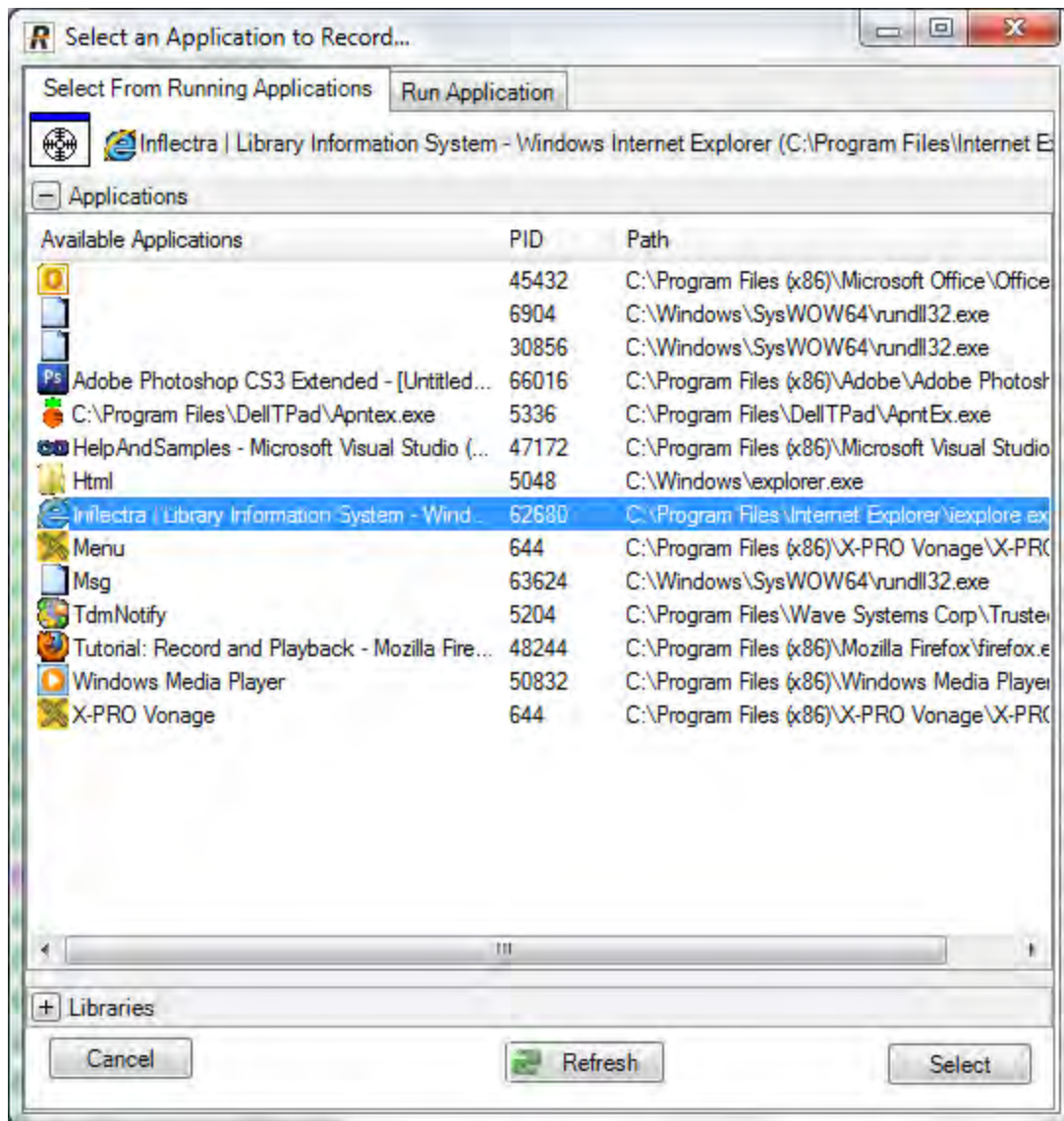


- **Add Credentials** - Allows you to add an HTTP basic authentication credential (username and password) to the request. Saves you having to add the header manually (which would require base64 encoding the username and password):



2.5.33 Select an Application to Record... Dialog

Screenshot



Purpose

The **Select an Application to Record...** (SAR) Dialog appears before [Recording](#) takes place. It queries the user for which program to record, as well as what [Recording Library](#) to use.

If you are recording the same application for the second time then SAR is not shown. The recording proceeds to last used application if it is still available on the screen.

How To Open

To open the SAR Dialog, press the **Record/Learn** button on the Ribbon (**Test** tab > **Recording & Learning** menu):



Libraries

Library	Description
<input type="checkbox"/> Auto	Detect library automatically
<input type="checkbox"/> .NET	.NET 1.1, 2.0, 3.0, 3.5 with Accessibility
<input checked="" type="checkbox"/> Internet Explorer HTML	HTML DOM-based recorder for Internet Explorer
<input type="checkbox"/> Firefox HTML	HTML DOM-based recorder for Mozilla Firefox
<input type="checkbox"/> Generic	Generic library contains basic definitions for most commo...

The **Library** table lists the available Recording Libraries. Select the one appropriate to the process/program you will record. If you select **Auto**, Rapise will attempt to choose the correct recording library for you. See the [Recording Library](#) section for more information.

Available Applications

Available Applications	PID	Path
	7032	C:\Windows\explorer.exe
	3744	C:\Program Files\Google\GoogleToolbar\
C:\Windows\system32\cmd.exe	4796	C:\Windows\system32\cmd.exe
Help & Manual	7024	C:\Program Files\EC Software\HelpAndM
Program Manager	7032	C:\Windows\explorer.exe
Sample ATM Login - Windows Internet Ex...	7000	C:\Program Files\Internet Explorer\explor

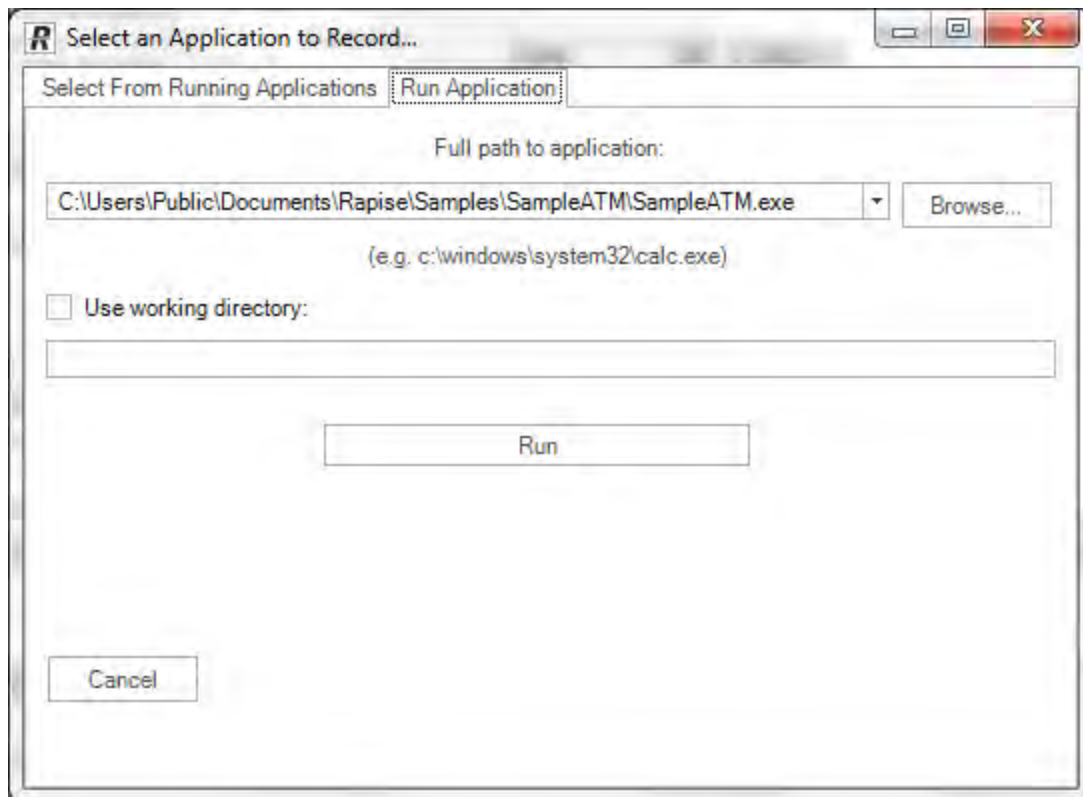
The **Available Applications** table lists all of the processes running at the time you open the **SAR dialog**. If the process you would like to record is already open, you can select it from the table. Pick the appropriate recording library (above) first before you pick an application to record; your application choice will become unselected if you do not do it last.

Widgets



- The **Cancel button** closes the dialog.
- **Show All**: While unchecked only top level application windows reflected in the Windows Task Bar are shown in the 'Available Applications' list. Check this and press Refresh to see all top level windows available on the screen.
- **Refresh List**: Press to refresh the **Available Applications** table. After refreshing, you will see processes that began after the **SAR dialog** was opened.
- **Select button**: To record a process from the **Available Applications** table, select the process and then press the *Select* button.

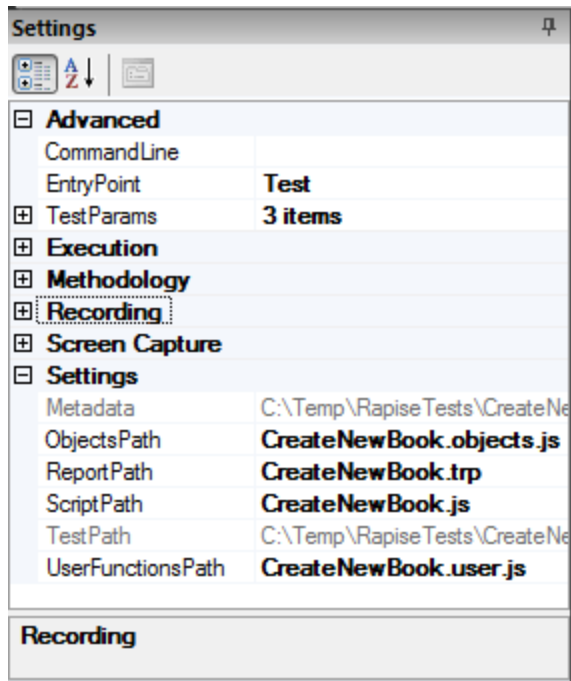
Run Application Tab



- **Path drop down list:** If the program you would like to record is not already open, you can specify its path here. If the program is already running, you can select it from the **Available Applications** table.
- **Browse button:** Browse for an application to open and record.
- **Use working directory:** To set a specific working directory when launching the application, check the box and enter in a value for the **working directory**.
- **Run button:** To record a program that is not currently open, fill in the **Path** text-box and press the **Run** button.
- The **Cancel button** closes the dialog.

2.5.34 Settings Dialog

Screenshot



Purpose

Use the Settings Dialog to change test specific settings.

How to Open

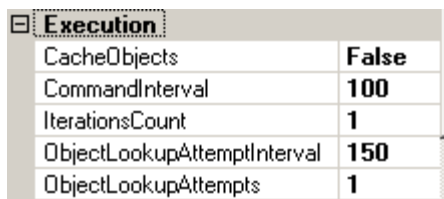
The Settings dialog is part of the [Default Layout](#).

Advanced



- **CommandLine** is a freeform text box. Use it to specify values for global variables (beginning in **g_**) to pass the [recorder](#) and [player](#). You can view which global variables are available in the source files (such as **Player.js**, **SeSCommon.js**, etc).

Execution



- **CacheObjects**: Remember object locations and try to reuse them for speed. This is helpful with dialog based applications.
- **CommandInterval**: Time interval (in milliseconds) between script commands during script execution.
- **IterationsCount**: Your test script will be executed this many times consecutively during [Playback](#).

- **ObjectLookupAttemptInterval**: This is the time Rapise will wait between attempts to locate an object.
- **ObjectLookupAttempts**: This is the number of times Rapise will attempt to locate an object.

Recording

Recording	
BeautifySavedObjects	False

- **BeautifySavedObjects** affects how the [Script Recorder](#) writes object information to your test script. If **False**, the object definition will be written as a single line:

```
var saved_script_objects={
  Balance:{"version":0,"object_type":"SeSSimulated","object_name":"Transaction
Completed Successfully\n\nAccount 00000005
Balance:1046.00","object_class":"Static","object_role":"ROLE_SYSTEM_STATICTEXT",
"object_text":"Transaction Completed Successfully\n\nAccount 00000005
Balance:1046.00","locations":[{"locator_name":"Location","location":
{"location":"4.4.4","window_name":"SmarteATM","window_class":"#32770"}},
{"locator_name":"LocationPath","location":
{"window_name":"SmarteATM","window_class":"#32770","path":
[{"object_name":"Transaction Completed Successfully\n\nAccount 00000005
Balance:1046.00","object_class":"Static","object_role":"ROLE_SYSTEM_STATICTEXT"}
,{"object_name":"Transaction Completed Successfully\n\nAccount 00000005
Balance:1046.00","object_class":"Static","object_role":"ROLE_SYSTEM_WINDOW"}
,{"object_name":"SmarteATM","object_class":"#32770","object_role":"ROLE_SYSTEM_DI
ALOG"}]]}]
};
```

If **True**, the object definition will be written in a manner that takes more space, but is easier to read and change:

```
var saved_script_objects={
  Balance:{
    "version": 0,
    "object_type": "SeSSimulated",
    "object_name": "Transaction Completed Successfully\n\nAccount
00000005 Balance:1046.00",
    "object_class": "Static",
    "object_role": "ROLE_SYSTEM_STATICTEXT",
    "object_text": "Transaction Completed Successfully\n\nAccount
00000005 Balance:1046.00",
    "locations": [
      {
        "locator_name": "Location",
        "location": {
          "location": "4.4.4",
          "window_name": "SmarteATM",
          "window_class": "#32770"
        }
      },
      {
        //section omitted for brevity
      }
    ]
  }
};
```

Objects that were learned in previous recordings are affected by the value of **BeautifySavedObjects**.

Screen Capture

Screen Capture	
Capture Execution	False
Capture Recording	False
Include in Report	False
Widget Only	False

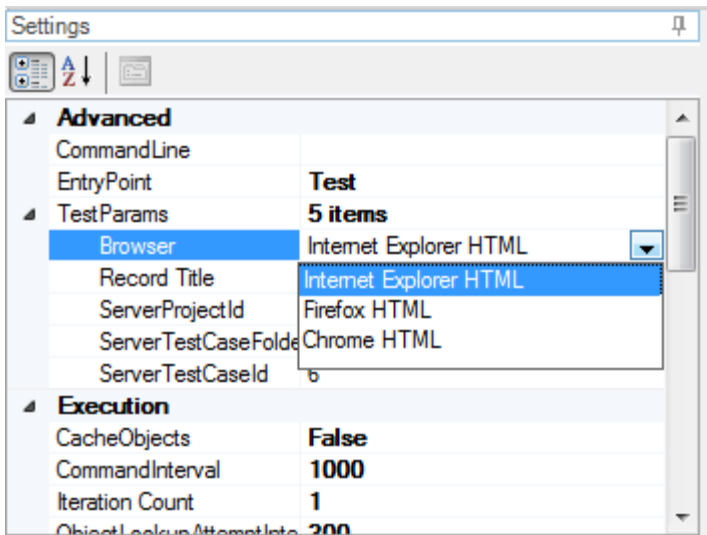
- **Capture Execution**: Set this to **True** if you want to save screen images for each recognized object during playback.
- **Capture Recording**: Set this to **True** if you want to save screen images for each action during recording.
- **Include in Report**: Set this to **True** to include the saved images in the execution report during playback.
- **Widget Only**: Set this to **True** to only save the widget area in the screenshot, as opposed to the whole window.

TestParams

The TestParams section includes various custom test parameters:

Click to open the [TestParams Collection Editor Dialog](#).

There is a build-in set of test parameters for [cross-browser testing](#). When you open up a test that uses one of the HTML libraries it will display the following built-in test parameter that you can use to change the **playback browser**:



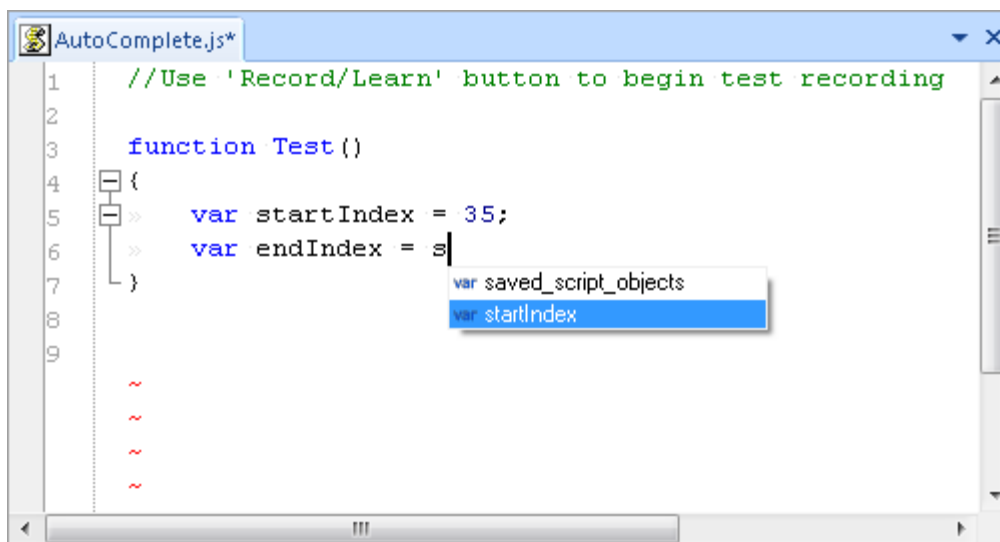
Settings

Settings	
Metadata	C:\Users\Public\Documents\Shared
ObjectsPath	TwoDialogsTest.objects.js
ReportPath	TwoDialogsTest.trp
ScriptPath	TwoDialogsTest.js
TestPath	C:\Users\Public\Documents\Shared
UserFunctionsPath	TwoDialogsTest.user.js

- **UserFunctionsPath**: Path (relative to the test directory) to the file with user-defined functions utilized in this test. Normally this file has name in form *.user.js.
- **ObjectsPath**: Path (relative to the test directory) to file containing object tree information. This file contains **saved_script_objects** structure with all object locators gathered during recording and learning. Normally this file has name in form *.objects.js.
- **ReportPath**: Path (relative to the test directory) to the test's report file. Normally this file has extension form .trp which stands for **T**est **R**eport.
- **ScriptPath**: Path (relative to the test directory) to the test script.
- **TestPath**: Path to the test definition file (*.sstest).

2.5.35 Source Editor

Screenshot



```
1 //Use 'Record/Learn' button to begin test recording
2
3 function Test()
4 {
5     var startIndex = 35;
6     var endIndex = s
7 }
8
9
~
~
~
~
```

Purpose

To display and edit javascript files. The editor supports [Syntax Highlighting](#), [Syntax Checking](#), [Code Folding](#) and [Code Completion](#).

How to Open

Use the [Test Files Dialog](#) to open a javascript file. The javascript file will be opened in a **Source Editor**, in the [Content View](#). The [Edit Tab](#) of the Ribbon will also open.

2.5.36 Spreadsheet Viewer

Screenshot

MSEcel.xls [MSEcel\$]

Drag a column header here to group by that column.

Item1	Item2	Sum	F4
1	6	7	
2	7	9	
3	8	10	// error
4	9	13	
5	10	15	

Purpose

To display excel (xls) files.

How to Open

Use the [Test Files Dialog](#) to open an excel file. The excel file will be opened in a **Spreadsheet Viewer**, in the [Content View](#). The [Spreadsheet](#) tab of the Ribbon will also open.

2.5.37 Start Page

Screenshot

The screenshot shows the Start Page interface with the following components highlighted by numbered callouts:

- 1**: SpiraTeam section containing the 'Open Spira Dashboard' button.
- 2**: Current Test section containing the 'Name', 'Scenario', 'User Functions', and 'Script' fields.
- 3**: 'Play' button in the Current Test section.
- 4**: Parameters section containing the 'Spira Properties' tab and 'Browser' dropdown.
- 5**: Test Description section containing the test description text.
- 6**: 'Quick Start Guide' button with a 'show' checkbox.
- 7**: Recent Tests section containing a list of test files.
- 8**: 'Fetch Samples' button in the Browse Samples section.
- 9**: List of sample test cases in the Browse Samples section.

Purpose

To display the latest news and information regarding Rapise and the currently open test.

The Start Page is intended to be a convenient entry point for most common tasks related to test design and execution. The Start Page provides:

- 1. A link to the **Spira Dashboard**: This will open the [Spira Dashboard](#) that provides a convenient way to interact with Inflectra's **SpiraTest** test management system or Inflectra's **SpiraTeam** application lifecycle management system.
- 2. **Current Test** information block, including:
 - 3. **Test Name** and available scenarios
 - 4. **Test Parameters** including the **Spira Properties** for the test. These include the IDs of the **project** and **test case** in SpiraTest. In addition, for web-based tests there will be the special **Browser** selection property. All tests will include any custom properties set by user.
 - 5. **Test Description**. This information is taken from a **Readme.htm** file (if it exists in the test folder of the current test). If this file does not exist then the first `/** ... */` comment inside the `Test` function is displayed instead.
- 6. **Quick Start Guide** This is an interactive tutorial for beginners who are using the system for the first time. It may be hidden by unchecking the **Show** checkbox.
- 7. **Recent Tests**. This displays a clickable list of recently used tests
- 8. **Browser Samples**. This displays a list of available Rapise samples. Some samples are shipped with Rapise while others are provided from the online public repository.
- 9. The **Fetch Samples** button is used to download/update additional samples from online public repository.

How to Open

The **Start Page** opens automatically with Rapise. This behavior can be modified in the [Options](#) dialog using the **ShowStartPageOnStartup** setting.

2.5.38 Spira Dashboard

Purpose

This page displays information from the SpiraTest or SpiraTeam server that this instance of Rapise is connected to. More details on using Rapise with either SpiraTest or SpiraTeam can be found in the separate **Using Rapise with SpiraTest Guide**. A copy of this guide should be in the Start > Programs menu created by the Rapise installer.

The dashboard displays information about the current Spira project, including the associated test cases, test sets and automation hosts:

Screenshot

A typical Spira dashboard will look like the following:

[Start Page](#) [Spira Dashboard](#)

Intro

Welcome to SpiraTeam. You may Sign Up for free or use your existing SpiraTeam account.

Spira Login/Sign Up

Welcome, fredbloggs!

Auto Login:

Connection Info

Spira URL: https://devcom.spiraservice.net
User Name: fredbloggs
Spira Folder:
Local Folder: c:\SpiraRepository

Automation Hosts

Select host...

Test Cases and Test Sets

Project **Description**

Sample application that allows users to manage books, authors and lending records for a typical branch library

Test Cases

✓ Id	Name	Description	Action
TC000001 Functional Tests			
<input type="checkbox"/>	TC000002 Ability to create new book	Tests that the user can create a new book in the system	<input type="button" value="Open"/>
<input type="checkbox"/>	TC000003 Ability to edit existing book	Tests that the user can login, view the details of a book, and then if he/she desires, make the necessary changes	<input type="button" value="Open"/>

Each of the sections is explained separately below:

Spira Login/Sign-Up

This section will display the name of the currently configured Spira user (if there is one) together with the option to either login to an existing Spira instance or to sign-up for a new one:

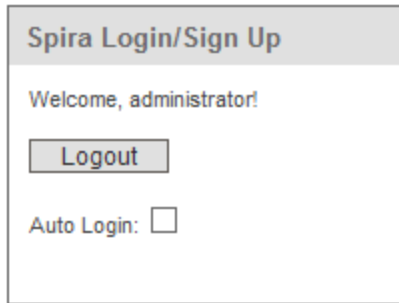
Spira Login/Sign Up

[Sign Up](#)

Auto Login:

- **Login:** this will log you into the instance of Spira listed in the **Connection Info** section
- **Sign Up:** this link will take you to the Inflectra website where you can sign up for a Spira account.
- **Auto Login:** if you select this option, Rapise will automatically login to Spira when it first starts up.

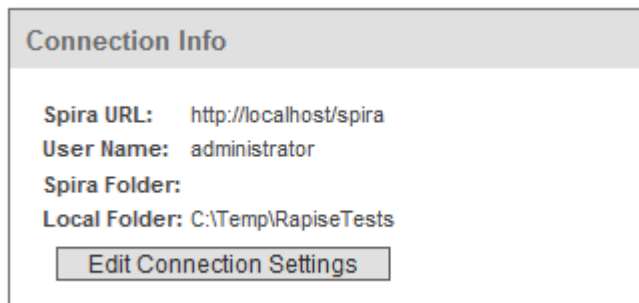
Once you login to the instance of Spira, the widget will change to the following:



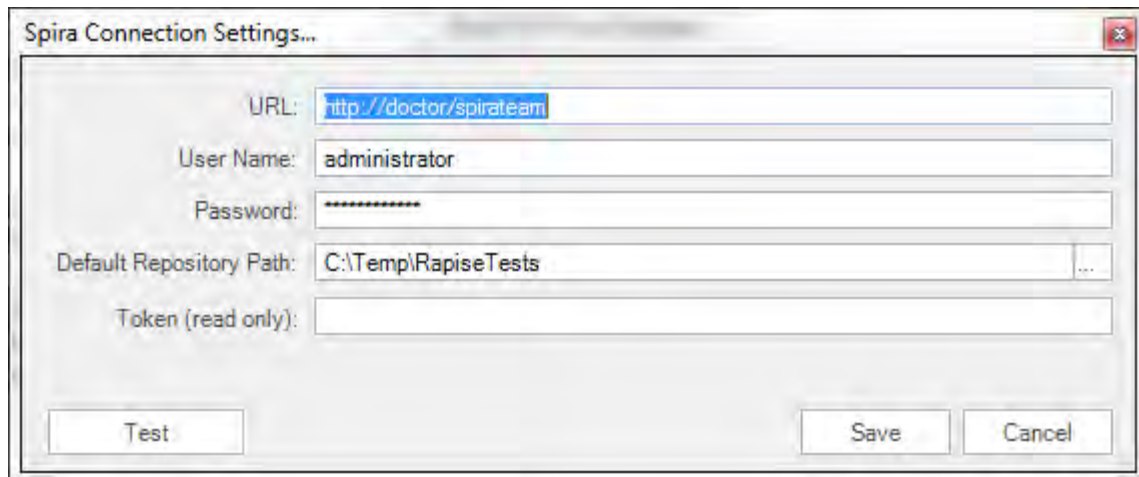
- **Logout:** this will log you out of the instance of Spira listed in the **Connection Info** section

Connection Info

This section will display the URL, login and corresponding local repository folder for the current Spira instance (if one has been set).



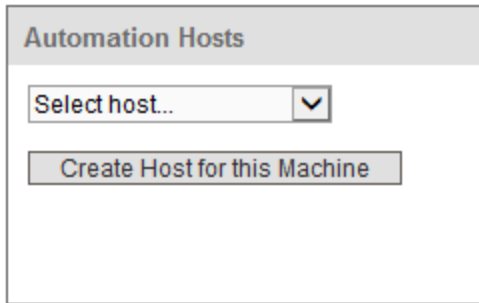
To change the current connection (or to set one up if this is a new installation of Rapise), click on the **[Edit Connection Settings]** button. That will display the [Connection Settings](#) dialog box:



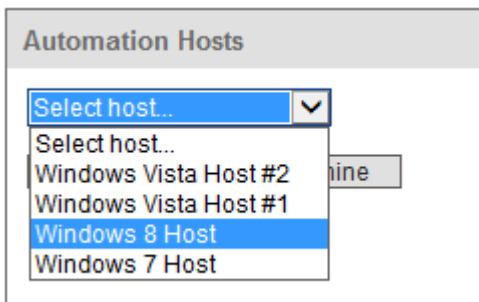
You can then change the current Spira connection using this dialog box. See the topic on [Spira Integration](#) for more details.

Automation Hosts

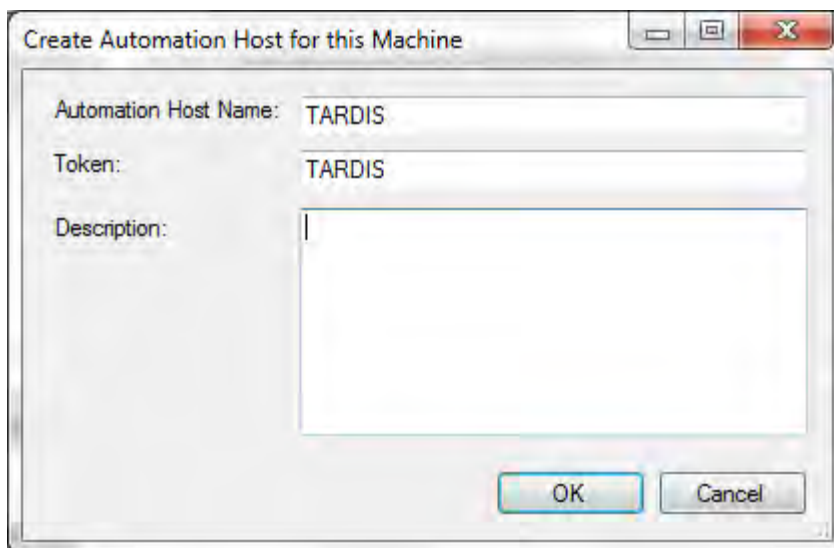
This section will display a list of the **automation hosts** available in the currently selected Spira project:



An **automation host** is a notional computer that Spira uses to assign specific **test sets** to specific computers running Rapise. This allows you to schedule tests to run on different computers remotely. When you first connect to Spira, it will not know which automation host the current machine matches. Using the dropdown list you can select one of the displayed automation hosts:



That will tell Rapise that this local computer is in fact this Spira automation host. Any test sets scheduled in Spira for this automation host will now be executed on this computer running Rapise. If you don't see the current automation host listed, you can click on the **[Create Host for this Machine]** button to create a new automation host entry for the current computer:






This screen lets you enter a display name (Name), system name (Token) and long description for a new automation host that Rapise will create in the current Spira project. Click **[OK]** to confirm the new automation host.




Test Cases

This section displays a list of **test cases** that are either created by the current Spira user or are assigned to the current Spira user:

Test Cases ▾

✓ Id	Name	Description	Action
TC000001	 Functional Tests		
<input type="checkbox"/> TC000002	 Ability to create new book	Tests that the user can create a new book in the system	<input type="button" value="Open"/>
<input type="checkbox"/> TC000003	 Ability to edit existing book	Tests that the user can login, view the details of a book, and then if he/she desires, make the necessary changes	<input type="button" value="Open"/>

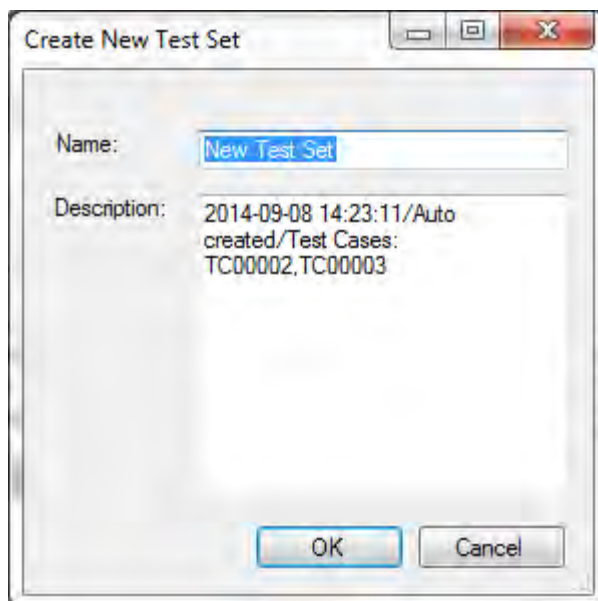
Each test cases will be displayed with the ID, name and long description of the test case together with an icon that indicates the type of test case:

1.  - Manual test case that has no automation script attached.
2.  - Test case that has an existing Rapise test attached.
3.  - Test case that has a non-Rapise automation script attached.

Clicking on the hyperlink ID will open up the test case inside Spira in your web browser. For test cases that have a linked Rapise test, there will be an **[Open]** button available. Clicking on this button will open the test in Rapise.

In addition there are two other options available:

- **Create Test Set:** Clicking on this button will allow you to create a new **test set** inside Spira. It will display the following dialog box when you select at least one test case and click the button:



Enter in the name of the test set you want to create and click [OK].

- **Add to Test Set:** When you select *at least one test case* and *one test set*, then click this button it will add the selected test cases to a specific test set.

Test Sets

This section displays a list of **test set** that are either created by the current Spira user, are assigned to the current Spira user, or are assigned to the automation host that this instance of Rapise is installed on:

Test Sets My Assigned ▼

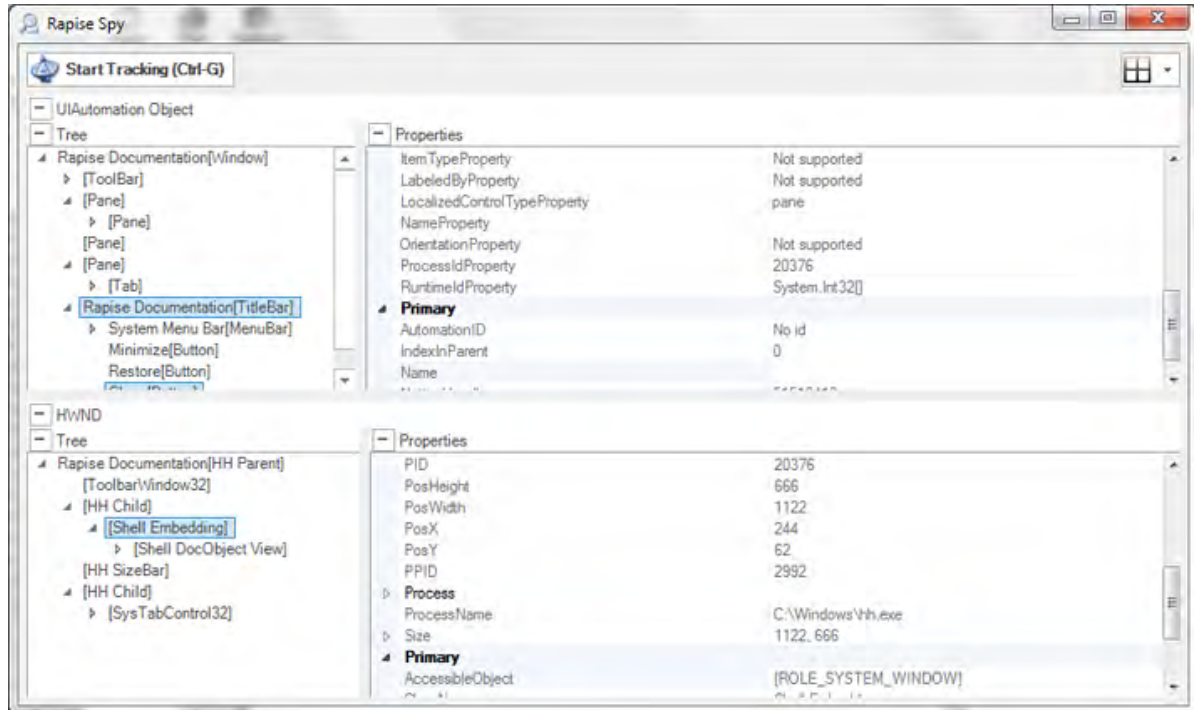
✓ Id	Name	Description	Action
TX000008 Functional Test Sets			
<input type="checkbox"/>	TX000005 Testing New Functionality	This set contains all the new features introduced in the last 3 sub-versions	<input type="button" value="Execute"/>
<input checked="" type="checkbox"/>	TX000006 Exploratory Testing		<input type="button" value="Execute"/>
TX000009 Regression Test Sets			
<input type="checkbox"/>	TX000003 Regression Testing for Windows 8		<input type="button" value="Execute"/>

Each test set will be displayed with the ID, name and long description of the test set.

Clicking on the hyperlink ID will open up the test set inside Spira in your web browser. For test sets that are marked as **automated**, there will be an **[Execute]** button available. Clicking on this button will execute the test in **RapiseLauncher**. This is described in more detail in the [SpiraTest Integration](#) topic.

2.5.39 Spy Dialog

Screenshot



Purpose

The **Spy** dialog is used to [Object Spy](#).

How to Open

There are three ways to open the Spy dialog:

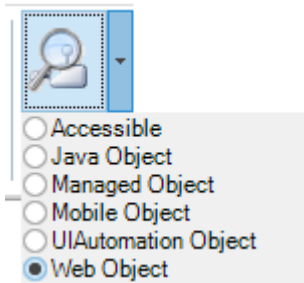
1. Press the **Spy** Button on the Ribbon (**Test** tab > **Tools** menu)



2. Press the **Spy** Button on the [Recording Activity Dialog](#)
3. Press the **Pick Object** button on the [Recording Activity Dialog](#). Note: If you use this method, the dialog has an extra **Learn Selected** button.

Choosing the type of Spy

You can change the type of Spy that will be launched by clicking on the down arrow to the right of the Spy icon in the main application Ribbon:



There are **six** types of Spy available:

1. **Accessible** - This is used to inspect applications that expose their properties using the Microsoft Active Accessibility (MSAA) technology. This is typically used by applications written in MFC, ATL, Qt, C++ and Visual Basic.
2. **Java Object** - This is used to inspect applications written using the Java AWT and Swing UI frameworks.
3. **Managed Object** - This is used to inspect applications written in .NET 1.1, .NET 2.0, .NET 4.0 using Microsoft Windows Forms.
4. **Mobile Object** - This is used to inspect mobile applications running on iOS or Android devices as well as the iOS or Android simulator
5. **UIAutomation Object** - This is used to inspect applications that expose their properties using the Microsoft's newer UIAutomation technology. This is typically used by applications written in WPF, Silverlight and Java SWT.
6. **Web Object** - This is used to inspect web applications using any of the supported web browsers. It also allows you to dynamically query web pages using [CSS](#) or [XPath](#) and learn the results as objects.

Start Tracking



The **Start Tracking** button (or CTRL+G) causes Rapise to enter **Tracking Mode**. In **Tracking Mode**, Rapise investigates the object under your mouse. It identifies the object's type and learns the object's properties. As you move your mouse, the objects you point to are highlighted (a box is drawn around them).

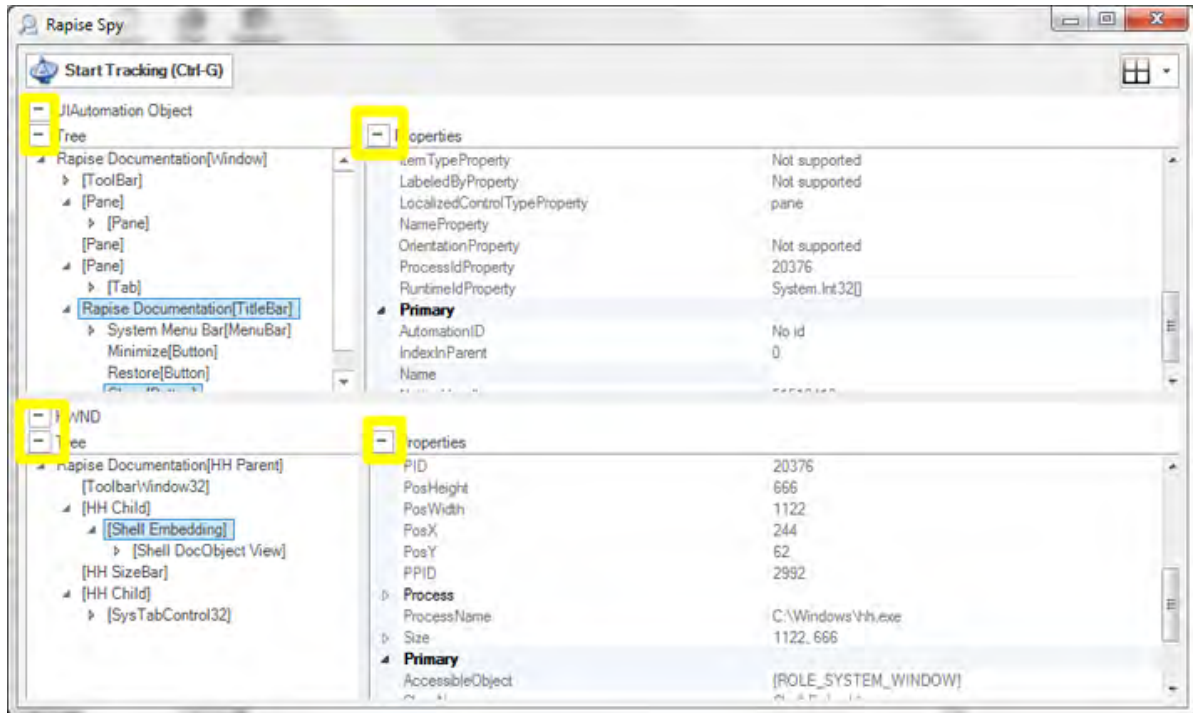
Stop Tracking

The **Stop Tracking** button is only visible in **Tracking Mode**. Press Stop Tracking (or CTRL+G) to exit

Tracking Mode. The Spy dialog will display information for the last object highlighted.

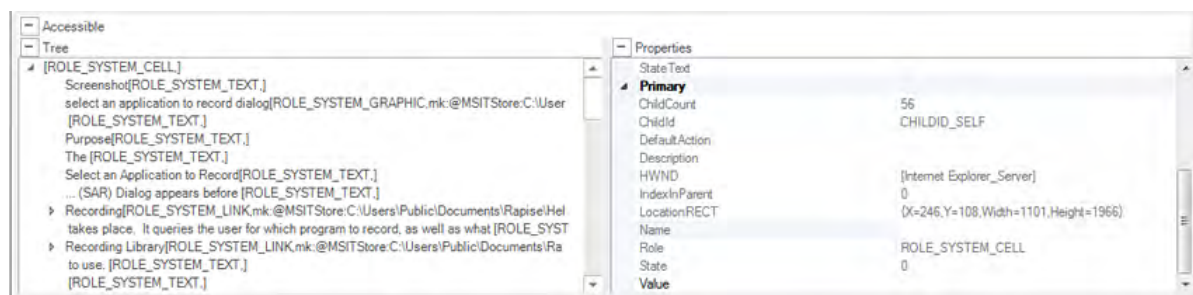
Maximize/Minimize buttons

The maximize  and minimize  buttons control the appearance of the dialog. They either hide or make visible the sections to their right or below. See the example below. The button highlighted in yellow in the left image is pressed to show/hide the appropriate pane.



Accessible Object

This is the Spy dialog that is used for Accessible (MSAA) objects. It is described in more detail in the [Accessible Spy](#) topic.



The **Accessible Object** section of the Spy dialog shows properties of the object that are visible through the Microsoft Active Accessibility interface.

Tree

The spied upon object and its children are displayed here.

Properties

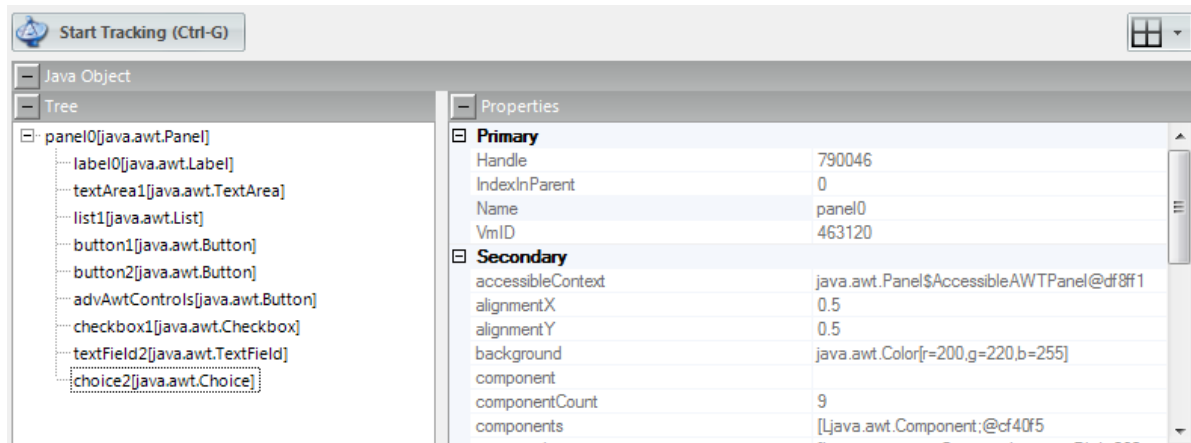
Object fields and field values are displayed here.

Tools

- **Mouse Button Click:** Emulate Left mouse click for the item selected in Spy tree.
- **Default Action:** Execute **DoDefaultAction** for given accessible object.
- **Set Selection:** Perform **accSelect** using the option flags set in the corresponding checklist (above).

Java Object

This is the Spy dialog that is used for Java (Swing / AWT) objects. It is described in more detail in the [Java Spy](#) topic.



The **Java Object** section of the Spy dialog shows properties of the object that are visible through the [Java Access Bridge](#) interface.

Tree

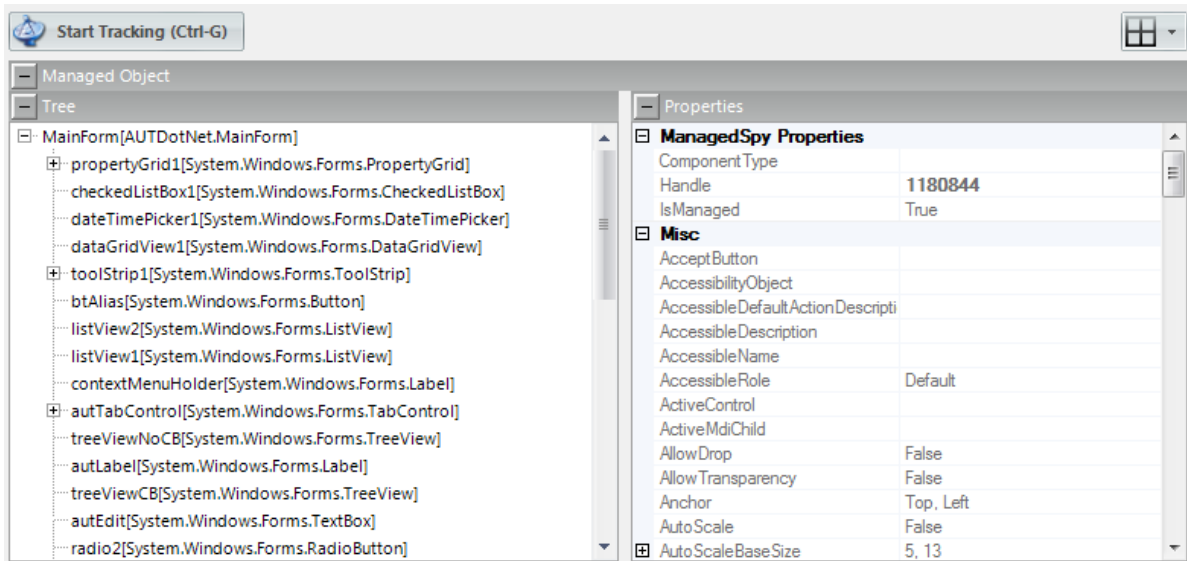
The spied upon object and its children are displayed here.

Properties

Object fields and field values are displayed here.

Managed Object

This is the Spy dialog that is used for Managed (.NET) objects. It is described in more detail in the [Managed Spy](#) topic.



The **Managed Object** section of the Spy dialog shows properties of the object that are visible through .NET Framework reflection interface.

Tree

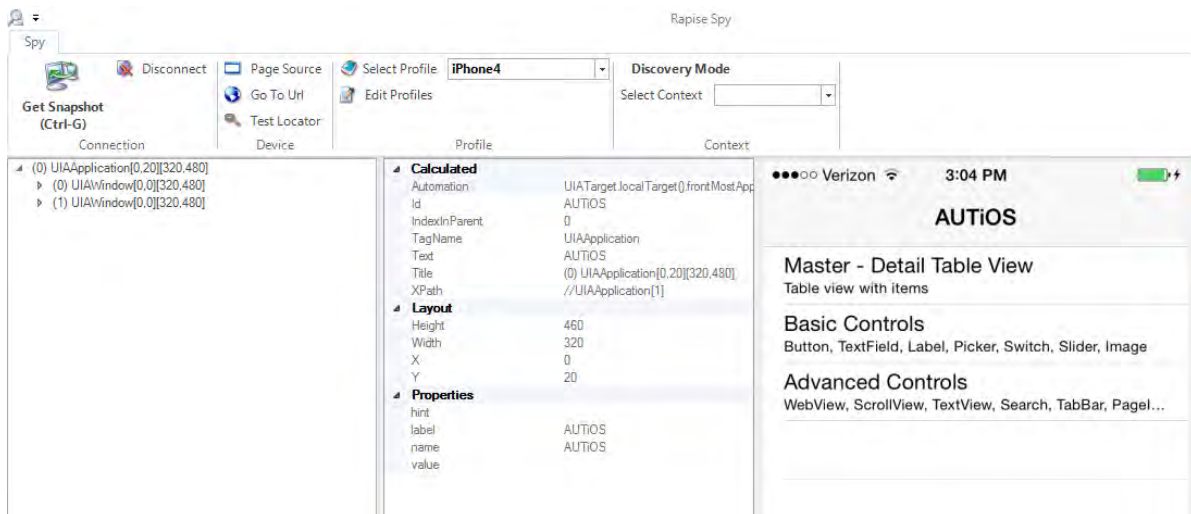
The spied upon object and its children are displayed here.

Properties

Object fields and field values are displayed here.

Mobile Object

This is the Spy dialog that is used for Mobile objects. It is described in more detail in the [Mobile Spy](#) topic.



The **Mobile Object** section of the Spy dialog shows a snapshot of the screen displayed on the connected Mobile device as well as the properties of the currently selected object. You can selected the object either by clicking on the screen snapshot or the control hierarchy displayed to the left. The properties displayed will depend on the type of mobile device being tested (iOS vs. Android).

Tree

The spied upon object and its children are displayed here. When you click on an object it will also be highlighted in the **snapshot** view to the right.

Properties

Object fields and field values are displayed here.

Snapshot

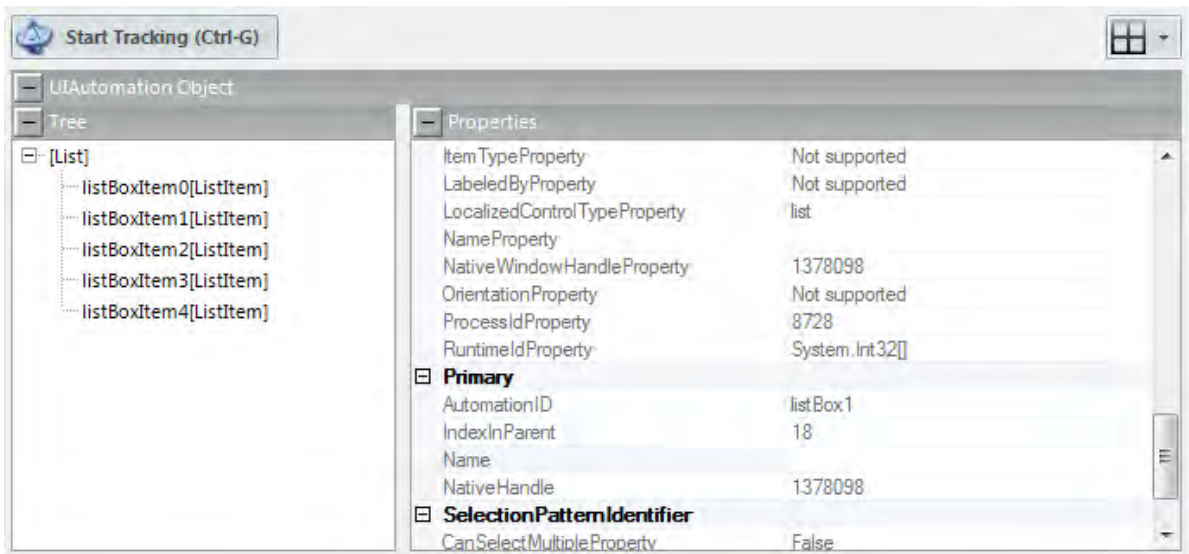
This displays a snapshot of what is displayed on the mobile device being tested. The objects in the snapshot are clickable, which allows you to visually select objects from the hierarchy.

Tools

- **Get Snapshot (CTRL + G)** - This will connect to the mobile device and get the latest snapshot from the mobile device and display in the right-hand window.
- **Disconnect** - This option disconnects the Spy from the mobile device and ends the connection.
- **Learn Object** - This option is only displayed in Recording mode and lets you take the currently selected object and add it to the [Object Tree](#) for the current test. It can then be used as a scriptable object in the test script.
- **Page Source** - This lets you view the source of the mobile device in a text editor such as Notepad. It will show the objects in the treeview represented as an XML document.
- **Go to URL** - This will instruct the mobile device to navigate its built in web browser to a specific URL.
- **Test Locator** - This will display the [Mobile Test Locator](#) dialog box that lets you try different locators to resolve specific objects in the object hierarchy. It will include options such as using XPath and IDs.
- **Select Profile** - This lets you change the profile of the mobile device you are testing while the Spy dialog is open.
- **Edit Profiles** - This will open up the [Mobile Settings](#) dialog box. You cannot be connected to do this.
- **Context** - This will display either 'Discovery Mode' or 'Recording Mode'.

UIAutomation Object

This is the Spy dialog that is used for UI Automation (WPF, Silverlight) objects. It is described in more detail in the [UIAutomation Spy](#) topic.



The **UIAutomation Object** section of the Spy dialog shows properties of the object that are visible through the UIAutomation interface.

Tree

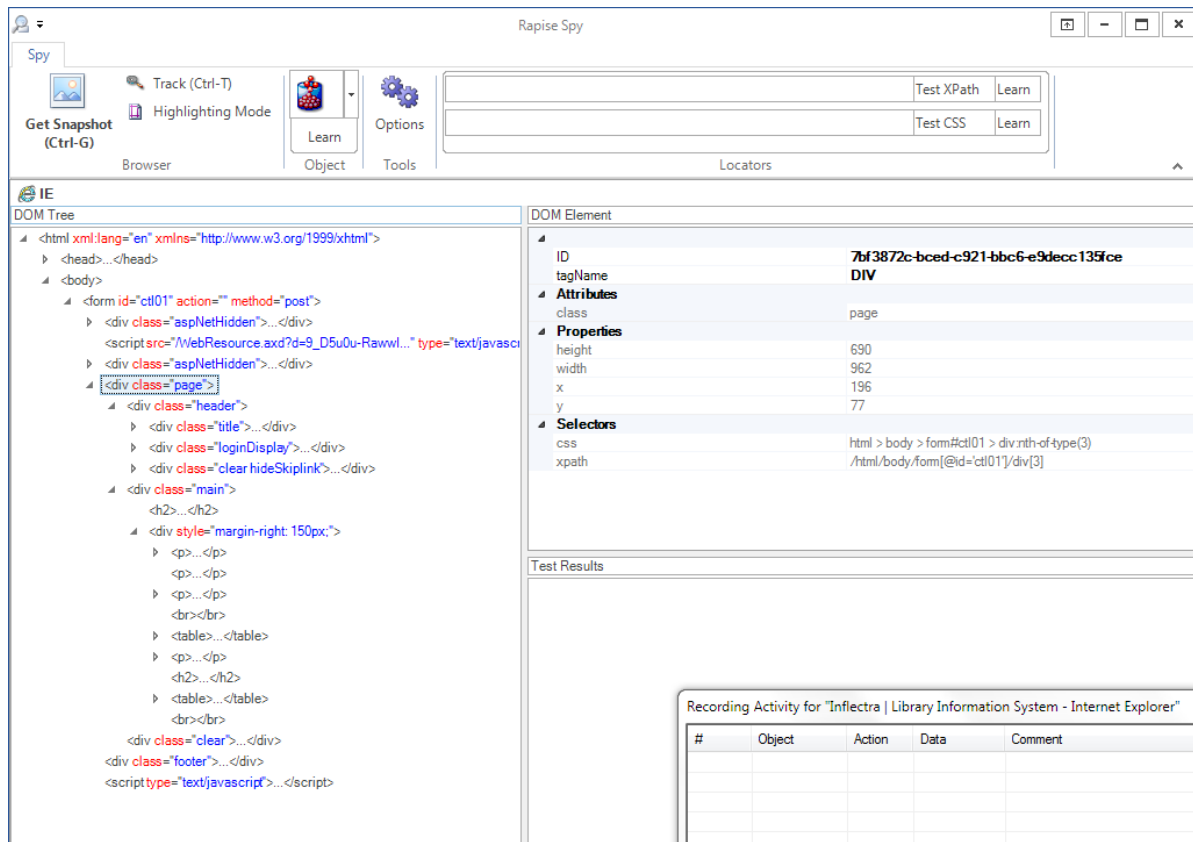
The spied upon object and its children are displayed here.

Properties

Object fields and field values are displayed here.

Web Object

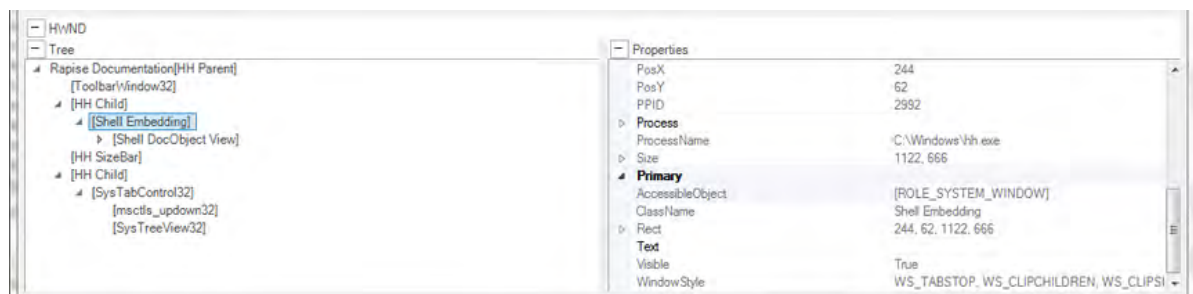
This is the Spy dialog that is used for Web objects. It is described in more detail in the [Web Spy](#) topic.



The **Web Spy** is used to inspect web applications running on any of the supported web browsers (currently Internet Explorer, Firefox and Chrome). It allows you to view the hierarchy of objects in the web browser **Document Object Model (DOM)**. In addition it makes the testing of dynamic data-driven web applications easier because it lets you test out dynamic [XPath](#) or [CSS](#) queries against the web page and verify that the objects return match your expectations.

For more information on the [Web Spy](#), please refer to the [Web Spy](#) topic.

HWND Object



The **HWND Object** section of the Spy dialog shows properties of the object that are visible with its HWND handle.

Tree

The spied upon object and its children are displayed here.

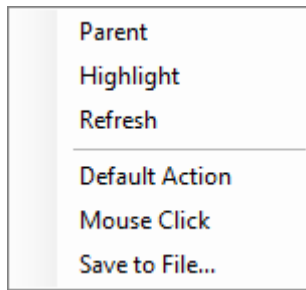
Properties

Object fields and field values are displayed here.

Tools

- **Mouse Button Click:** Emulate Left mouse click for the item selected in Spy tree.
- **Highlight:** Draw rectangle surrounding selected object (HWND or Accessible).

These tools can be accessed from the **right-click** Spy context menu:

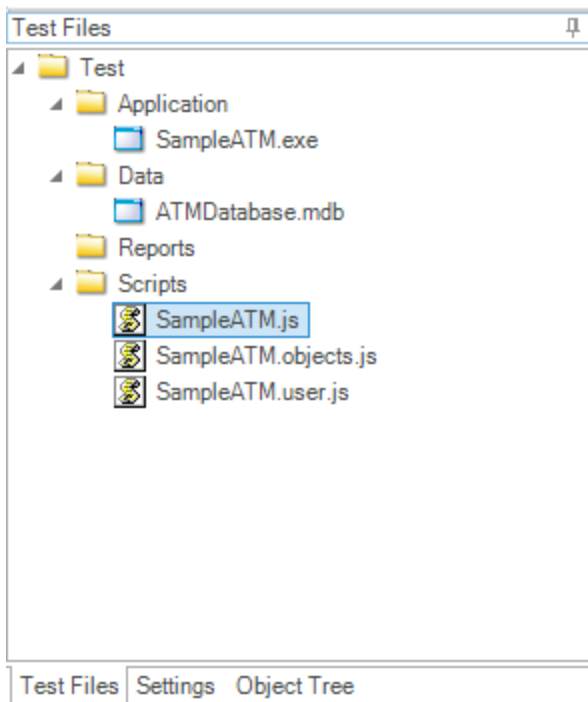


See Also

- Microsoft Active Accessibility is described here <http://msdn.microsoft.com/en-us/magazine/cc301312.aspx>
- HWND is described [HERE](#).
- Microsoft UIAutomation is described here <http://support.microsoft.com/kb/971513/>

2.5.40 Test Files Dialog

Screenshot



Purpose

The **Test Files** dialog allows you to navigate and alter the Test hierarchy, including the following:

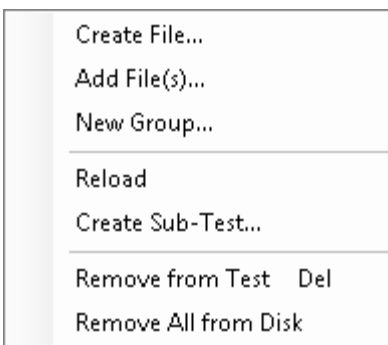
- the script
- Report files (*.trp)
- Images captured during execution using [Checkpoints](#)
- Analog recording files (*.arf)
- data files

How to Open

The **Test Files** dialog is part of the [Default Layout](#).

Context Menu (Folder)

Right click on a folder to see:

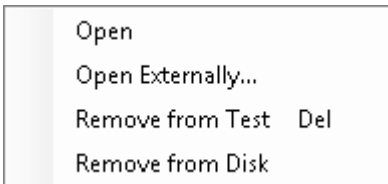


- **Create File:** Create and add a new file to the test.
- **Add File:** Add an existing file to the test.

- **New Group:** Create a logical grouping of files in the test. This will **not** add a folder to the file system.
- **Reload:** Refresh group contents. Use it for [filter groups](#) ('IsFilterGroup' is set to 'True' in group properties), e.g. for Report group.
- **Create Sub-Test...:** Launch Create Sub-Test dialog.
- **Remove from Test:** Remove the selected grouping from the test. This does **not** delete included files from your hard disk.
- **Remove All from Disk:** Remove all files included into the selected grouping from your hard disk.

Context Menu (File)

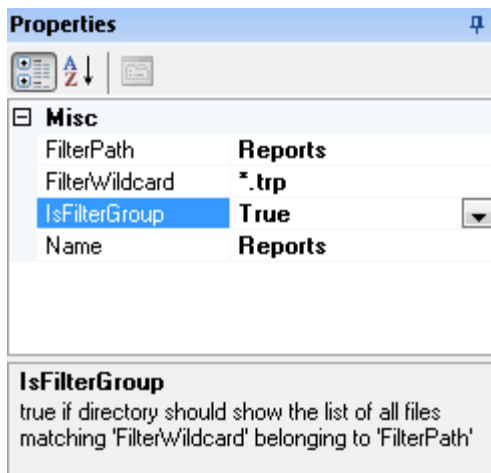
Right click on a file to see:



- **Open:** Open the file in Rapise.
- **Open Externally...:** Open the file using associated program. E.g. if a Notepad is registered in Windows to open TXT files, then TXT file will be opened by Notepad.
- **Remove from Test:** Remove the file from your test. This does **not** delete the file from your hard disk.
- **Remove from Disk:** Remove the file from your test and hard drive.

Filter Groups

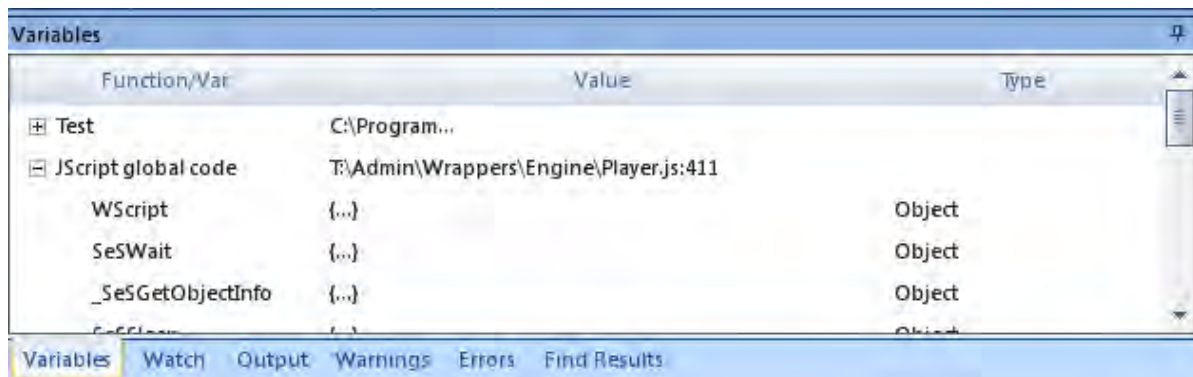
Filter groups read its contents from disk according to specified path and wildcard. You may setup a filter group by editing group properties:



- **FilterPath:** Root path to find files via wildcard (valid only if 'IsFilterGorup' is 'True').
- **FilterWildcard:** Filter wildcard (valid only if 'IsFilterGorup' is 'True').
- **IsFilterGroup:** 'True' if directory should show the list of all files matching 'FilterWildcard' belonging to 'FilterPath'.
- **Name:** Group name.

2.5.41 Variable/Call Stack View

Screenshot



Purpose

Lists the functions in the current call stack. Beneath each function, variables/objects local to that function are listed with their value and type.

How to Open

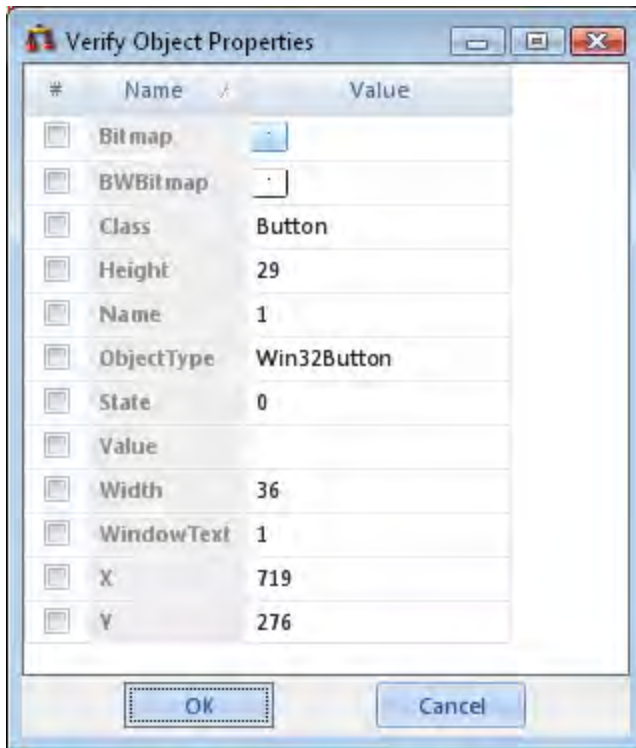
Begin [debugging](#) a script. The **Variable/Call Stack View** will open automatically.

Go to a function definition

Double click on a function to go to its definition.

2.5.42 Verify Object Properties Dialog

Screenshot



Purpose

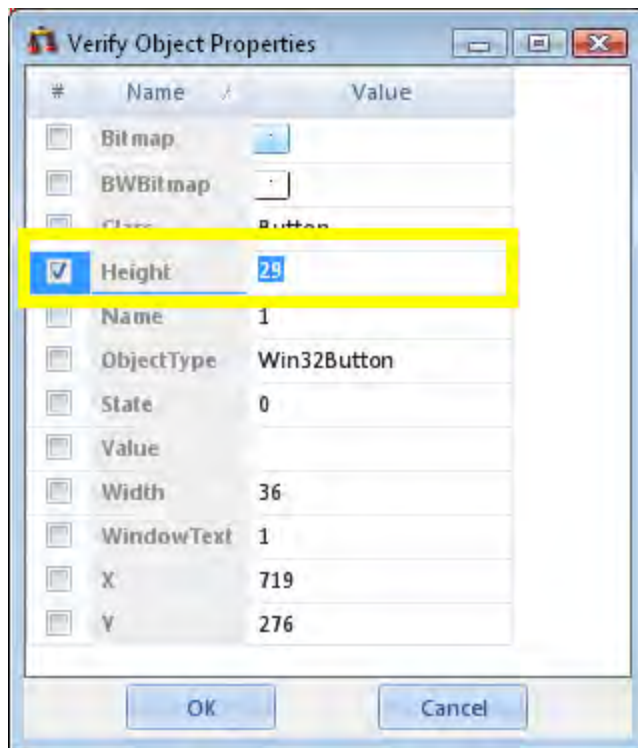
Use the **Verify Object Properties** dialog during [recording](#) to add [checkpoints](#).

How to Open

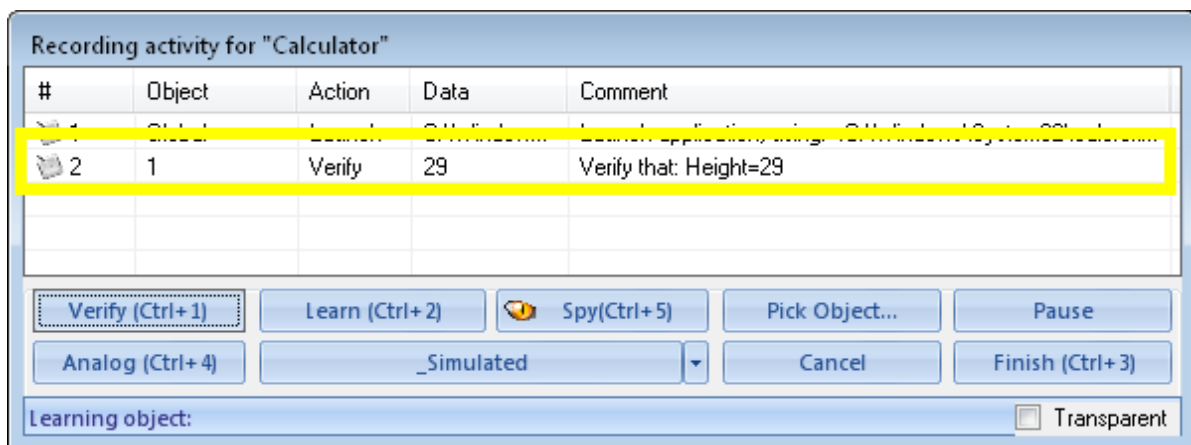
1. First, open the [Recording Activity Dialog](#).
2. Position the mouse over an object and press **Ctrl+1**, or
3. Press the **Verify** button and then click the target object with the mouse cursor.

Create a Checkpoint

Your checkpoint will be associated with a particular object. That object's properties will be listed in the **Verify Object Properties** dialog. Check those properties that you wish to verify during [playback](#). Enter expected values for the selected properties in the **Value** column. **Note:** The **Bitmap** and **BWBitmap** properties are images of the object.



Press the **OK** button. The **Verify Object Properties** dialog will close, and the [Recording Activity](#) dialog will contain a new **Verify** action:



The generated script will have a corresponding [assert statement](#):

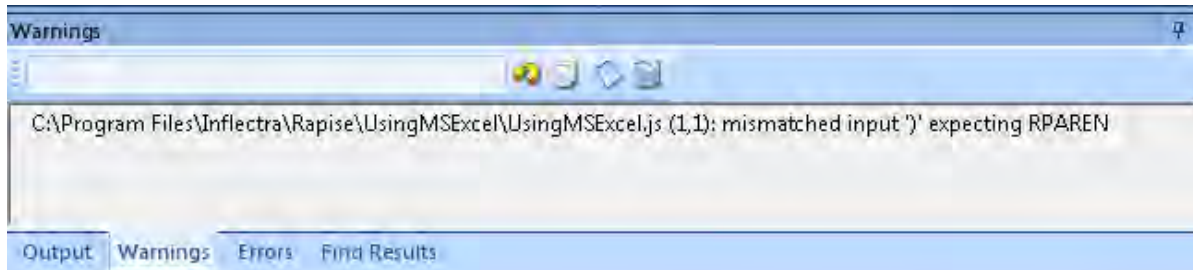
```
//Verify that: Height=29
Tester.AssertEqual("Verify that: Height=29", SeS('Obj1').GetHeight(), "29");
```

See Also

- [Recording](#)
- [Assert Statements](#)

2.5.43 Warning View

Screenshot



Purpose

To display syntax error messages as you edit javascript files.

How to Open

The **Warning** view is part of the [Default Layout](#).





Error Message

C:\Program Files\Inflectra\Rapise\UsingMSExcels\UsingMSExcels.js (1,1): mismatched input ')' expecting RPAREN

Double click on an error message to go to the corresponding source line.

Widgets



- The text box is a search box.
- The icons from left to right are **Find Next Entry** , **Copy Selected** , **Clear All Text** , and **Select All Text** .

See Also

- [Syntax Checking](#)

2.5.44 Watch View

Screenshot



Purpose

To input expressions and view their values as the script executes.

How to Open

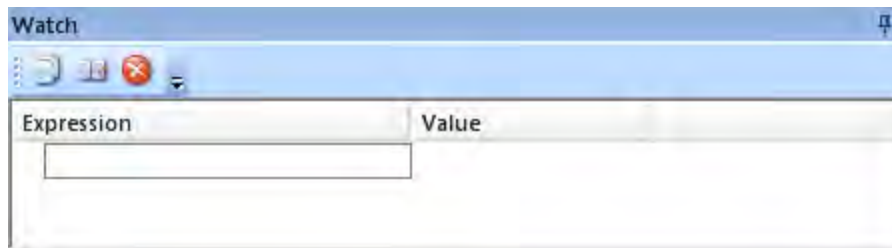
Begin [debugging](#) a script. The **Watch View** will open automatically.

Inputting an Expression

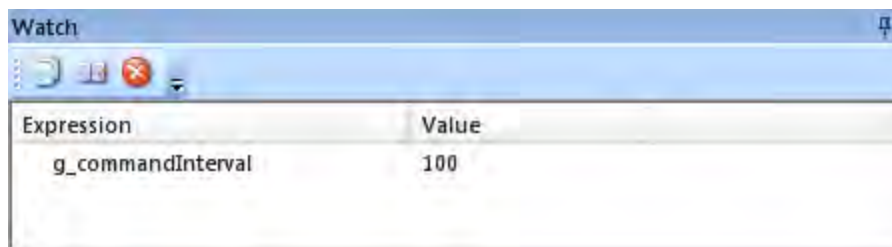
1. Click the first blank line:



2. Double click on the highlighted line, under the **Expression** column. A text box will appear.



3. Input the expression you wish to investigate. Press **Enter**.



Widgets



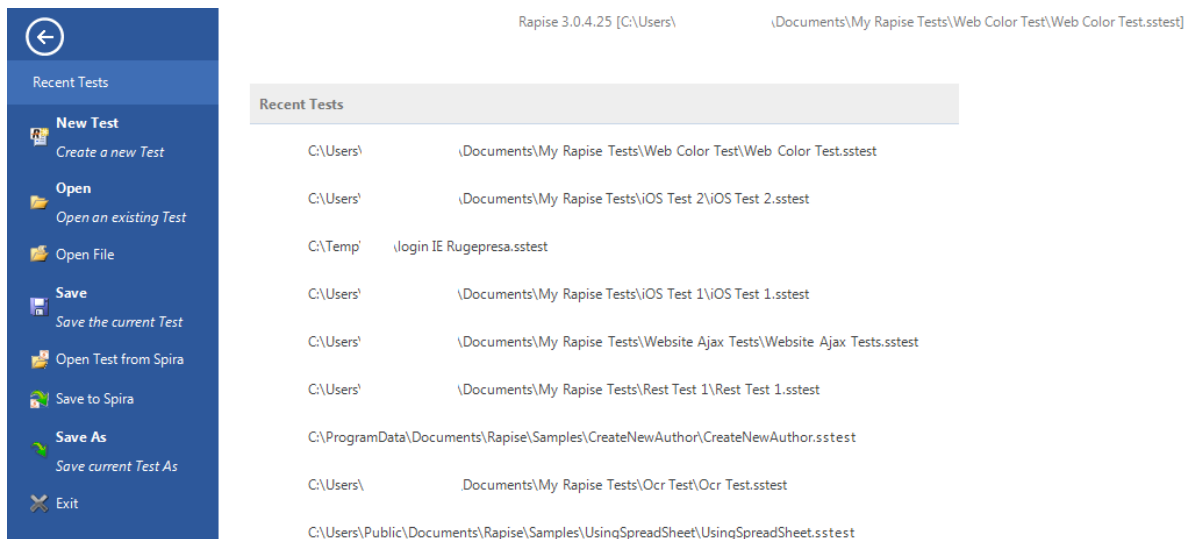
From left to right: **Copy** (an entire row) , **Copy Watch Value** , **Delete** .

2.5.45 File Menu

Purpose

The File menu provides quick access to all the File management functions in Rapise. Many of these are also available on the main [Test ribbon](#).

Screenshot



Options

The **File** menu has the following options:

- **Create a new Test** - creates a new Rapise test, it can be saved either to Spira or locally.
- **Open an existing Test** - opens an existing test that is already available locally.
- **Open File** - opens a single file and adds to the current test project
- **Save the current Test** - saves the current test locally
- **Open Test from Spira** - opens a test from Spira and downloads to the local repository
- **Save to Spira** - saves the current test to the Spira test management system
- **Save As** - saves the current test locally with a different file name
- **Exit** - exits Rapise.

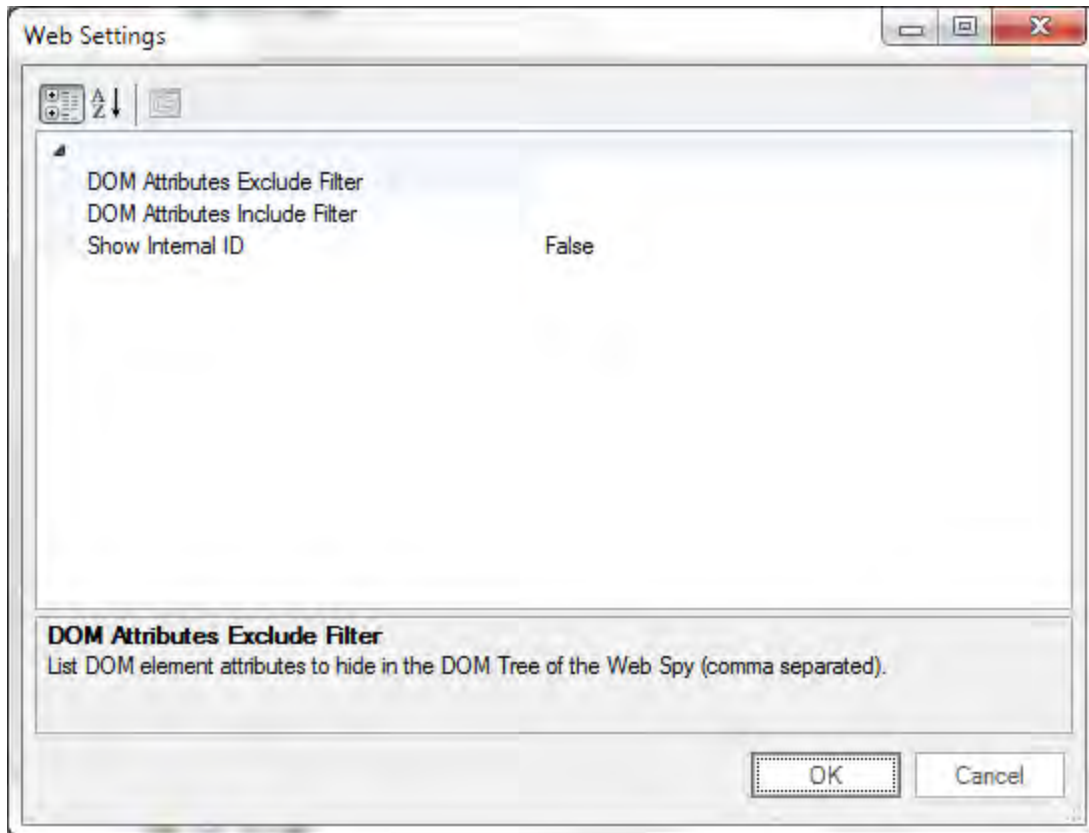
2.5.46 Web Settings

Purpose

This dialog box displays the list of web testing settings and specifically lets you change the behavior of

the [Web Spy](#) tool.

Screenshot



How to Open

You can open this dialog box from two places:

- From the main Rapise [Options](#) dialog box (when the Tools tab is selected).
- From the [Web Spy](#) tool when you click on the 'Mobile Profiles' ribbon menu entry.

General Settings

This dialog box has the following settings:

- **DOM Attributes Exclude Filter** - List the DOM element attributes to hide in the DOM Tree of the Web Spy (comma separated).
- **DOM Attributes Include Filter** - List the DOM element attributes to show in the DOM Tree of the Web Spy (comma separated). If both Include and Exclude filters are set then Include filter prevails.
- **Show Internal ID** - If 'True' then DOM Element pane shows internal ID of an element. This ID is purely internal to Rapise and is not part of the HTML web page or web application.

2.6 HowTos

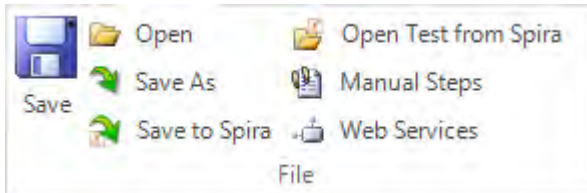
This section focuses on specific tasks that a Rapise user might want to accomplish.

2.6.1 Open a Test

You can open a test in two ways: (1) From the Ribbon, and (2) From the Application menu.

Ribbon

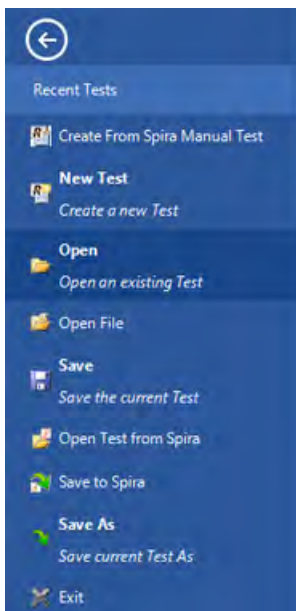
Select the **Open** option from the **File** menu on the **Test** Tab of the Ribbon:



You can also open a test that is stored in **SpiraTest** (our web-based test management system) instead of the local filesystem. This is done by clicking on the **Open Test from Spira** option instead. More details on using Rapise with SpiraTest can be found in the [SpiraTest Integration](#) section.

Application Menu

Open the Application Menu by clicking on the **File** Tab at the top left of the Rapise window. The Application menu has an **Open Test** option, and a list of **Recent Test** from which you may choose:



Rapise 2.1.3.33 [C:\Users\adam.sandman\Documents\My Rapise Tests\Spira New Test1\]

Recent Tests

C:\Users\adam.sandman\Documents\My Rapise Tests\Spira New Test1\Spira New Test1.sstest
 C:\Users\adam.sandman\Documents\My Rapise Tests\Web Test 1\Web Test 1.sstest
 C:\Users\adam.sandman\Documents\My Rapise Tests\MyTest1\MyTest1.sstest
 C:\ProgramData\Documents\Rapise\Samples\CreateNewBook\CreateNewBook.sstest
 C:\Users\adam.sandman\Documents\My Rapise Tests\TwoDialogsTest\TwoDialogsTest.sstest
 C:\Temp\SmokeTest\SmokeTest\SmokeTest.sstest
 C:\Users\adam.sandman\Documents\My Rapise Tests\Auto Test 1\Auto Test 1.sstest
 C:\Users\adam.sandman\Documents\My Rapise Tests\REST Test Project\REST Test Project.sstest
 C:\Temp\RapiseTests\ECF_AutoProjectBackup-DO NOT DELETE\ECF_AutoProjectBackup-DO NOT DELETE.sstest

You can also open a test that is stored in **SpiraTest** (our web-based test management system) instead of the local filesystem. This is done by clicking on the **Open Test from Spira** option instead. More details on using Rapise with SpiraTest can be found in the [SpiraTest Integration](#) section.

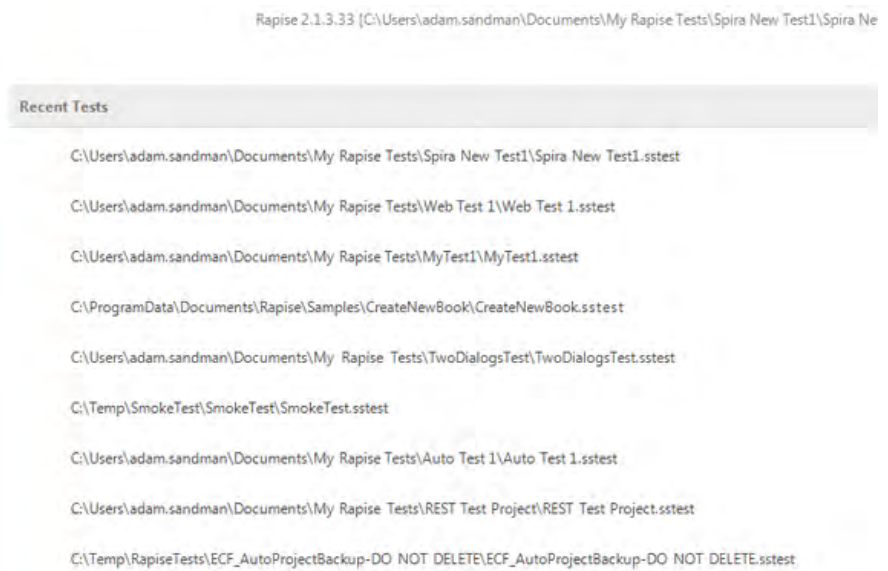
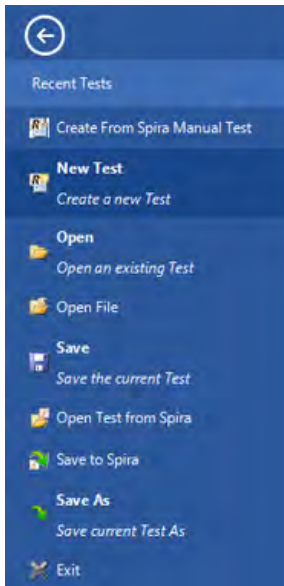
2.6.2 Create a New Test

There are two ways to Create a New Test in Rapise:

1. From the main Application menu
2. From the [Start Page](#)

From the Application Menu

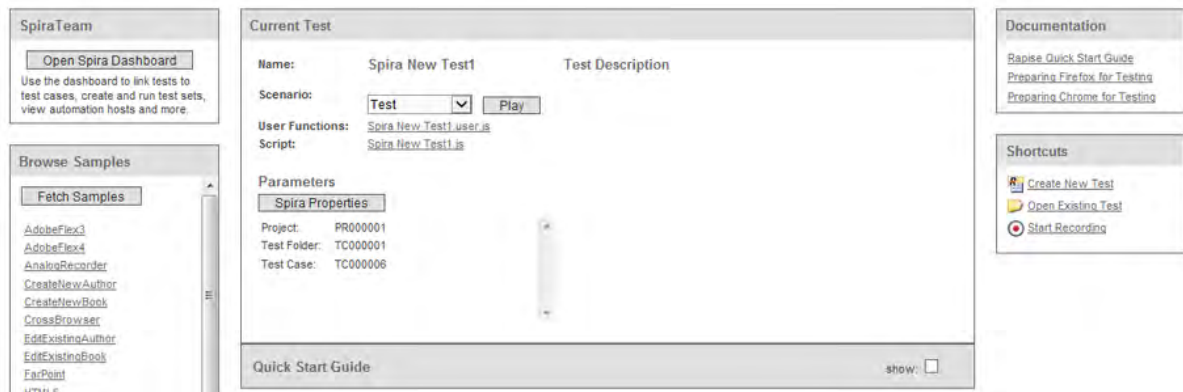
Open the Application Menu by clicking on the **File** Tab at the top left of the Rapise window.



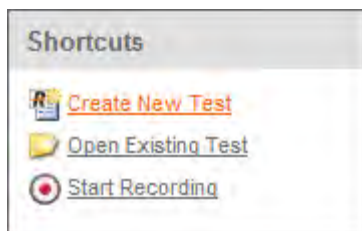
Select the **New Test** option. The [Create New Test](#) dialog will appear. Follow the instructions on this dialog.

From the Start Page

Open up the Rapise [Start Page](#):



In the Shortcuts section, click on the 'Create New Test' option:



The [Create New Test](#) dialog will appear. Follow the instructions on this dialog.

2.6.3 Restoring the Default Layout

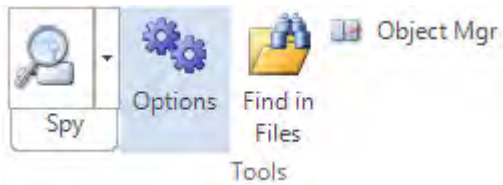
There are two ways to restore the default layout: (1) On Startup, and (2) In the Options Menu.

On Startup

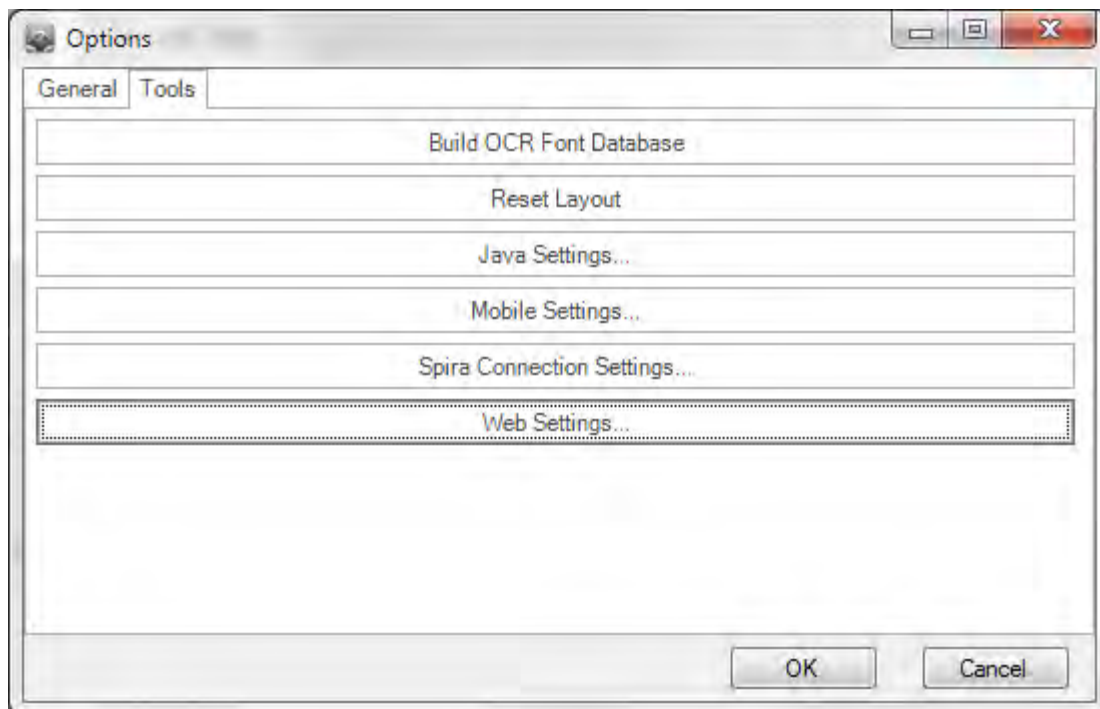
Press the **Shift** key while you open Rapise. Keep the Shift key down until Rapise is done initializing.

Options Menu

In Rapise, select the **Options** button. It is on the Ribbon in the Tools section:



The **Options** dialog will appear. Go to the Tools tab:



Select the **Reset Layout** button. Rapise will restart.

2.6.4 Change Test Entry Point

Rapise assumes that the entry point of a test - [Test\(\)](#) function is defined in a file specified in [ScriptPath](#) property of the [Settings](#) dialog. If you want to place [Test\(\)](#) function in another file then do not forget to update [ScriptPath](#) property of the test.

2.6.5 Do Absolute Analog Recording

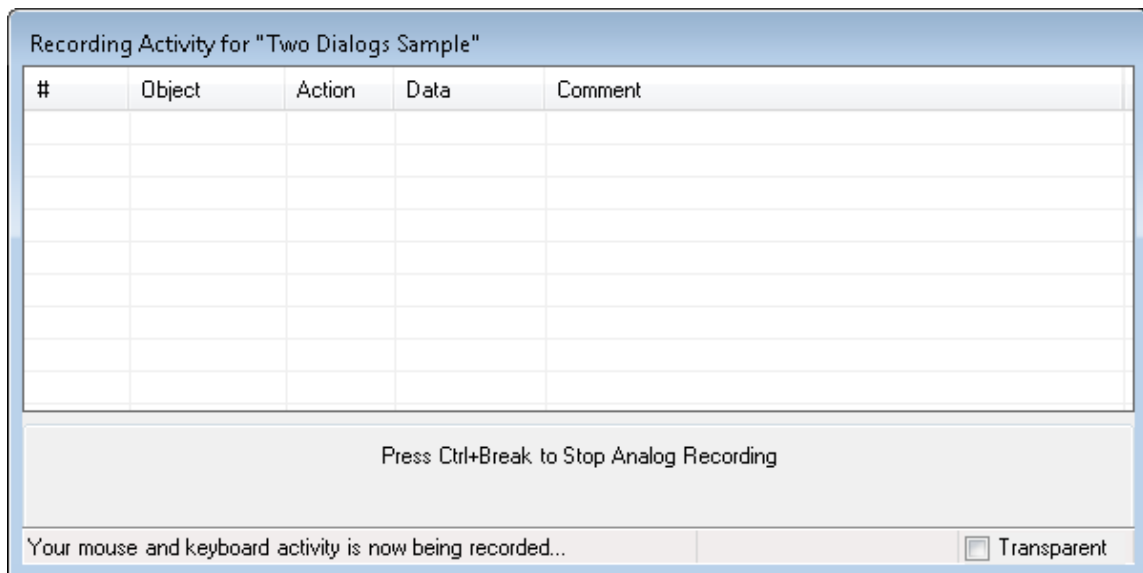
Let's once again use our trusty over-simplified TwoDialogs sample application to learn how to use absolute analog recording and use it to discover the value as well as the dangers associated with absolute analog recording.

Steps:

- (1) Run the TwoDialogs sample AUT. By default this will be located in the C:\Users\Public\Documents\Rapise\Samples\TwoDialogs\TwoDialogs.exe location
- (2) Start Rapise and create a new test and call it TwoDialogsAnalogAbsolute.
- (3) Press the Record/Learn button in the toolbar of Rapise.
- (4) When the "Select an Application to Record" dialog is displayed, choose the TwoDialogs.exe application and ignore the library list - we will not be using any library for analog recording. Press the Select button.
- (5) The Recording Activity dialog will be displayed with an empty grid.

NOTE: this recording session is going to be a little different from previous sessions. Previously we could interrupt our object-related recording/learning with other activities and because Rapise was recording activity related only to the target application, our recording or object learning would be unaffected. However, in analog recording, Rapise is monitoring the mouse and keyboard for the entire system - for all applications. This means that if you answer an email in the middle of analog recording, or log in to a secure system, all the steps including mouse movement, keystrokes, etc., will all be recorded. However, note also that screen contents are not recorded by Rapise.

- (6) If the TwoDialogs UI has been occluded, bring it back to the front so you don't have to hunt for it when you start recording.
- (7) When you're ready to record the session, hit Ctrl+4 on the Recording Activity dialog.

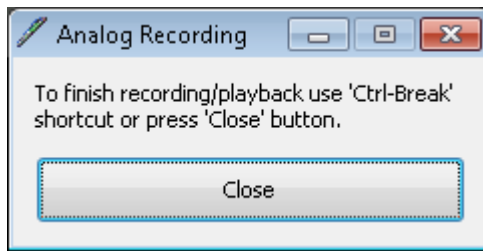


NOTE: Pressing the Analog button on the Recording Activity dialog starts a relative analog recording session. Use the Ctrl+4 key sequence to start the absolute analog recording session.

Rapise will begin recording all mouse and keyboard activity until you stop the recording.

Note also that the prompt in the notification/status area of the Recording Activity dialog is different from that for relative analog. It tells you that "Your mouse and keyboard activity is now being recorded."

A minimized window will be created that indicates that analog recording is in progress and allowing you to stop the recording.



(7) Go to the TwoDialogs AUT and click anywhere in the application's window to start the analog recording.

Click the mouse on the empty "Please enter your name" text box.

Type a name in the text box.

Hit the <tab> key or click the left mouse button to advance the input position to the second text box.

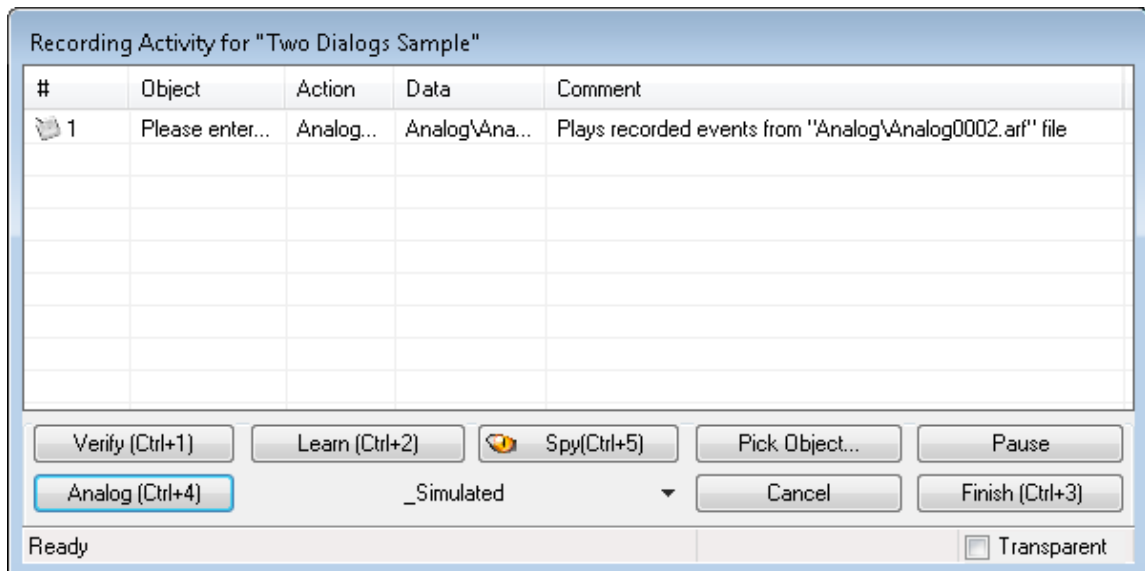
Type another name.

Move the mouse to the OK button and press the mouse left button.

(8) When you have recorded enough, switch to the Analog Recording dialog box and press the close button or hit the keys Ctrl+Break.

NOTE: If you use the "close" button on the Analog Recording dialog, the movement of the mouse to the Analog Recording dialog, and the mouse-click on the Close button will be recorded as part of the analog recording output. This might not be a desirable outcome at playback time because the Analog Recording dialog will not be present and the mouse click will be played in a potentially random place on the screen. For this reason, Ctrl+Break is probably a better option to terminate analog recording.

NOTE: The grid will have no entry added until you end the analog recording with the Close button in the Analog Recording dialog. When you do, it will add an entry to the grid.



(9) You can now record additional analog sessions, if you wish.

(10) You can record normal object activity before and/or after the analog recording. When you have finished all recording press the Finish button or hit Ctrl+3. Notice that the Analog entry is added to the grid.

(11) The Rapise screen will now be restored and will have placed focus in the editor pane of the Rapise with `TwoDialogsAnalogAbsolute.js` script displayed. You should see code something like the following:

```
//Plays recorded events from "Analog\Analog0003.arf" file
SeS('Simulated').DoAnalogPlay("Analog\Analog0003.arf");
```

(12) Press the Play button on the Rapise toolbar to playback the recording you made. Be sure not to interfere with the mouse or keyboard whilst the recording is playing back.

NOTE: You will see all mouse and keyboard activity reproduced as the analog recording plays. The recording will start from the point where you left-clicked the mouse to begin the recording (step 7 above) and will end with clicking the close button in the Analog Recording dialog or at the last action before you pressed Ctrl+Break.

(13) When the analog playback is complete, use the mouse to move the Two Dialogs AUT to a different location on the screen. Play the recording again, and watch the operation unfold. The most important thing to realize is that the absolute analog recording will playback the recording wherever the application is positioned on the screen wherever the AUT was positioned when you made the recording. Absolute analog recording records relative to the top-left corner of the system screen. Try this for yourself, but be sure to minimize all applications before starting.

2.6.6 Do Relative Analog Recording

Let's once again use our trusty over-simplified TwoDialogs sample application to learn how to use relative analog recording.

Steps:

(1) Run the TwoDialogs sample AUT. By default this will be located in `C:\Users\Public\Documents\Rapise\Samples\TwoDialogs\TwoDialogs.exe`

(2) Start Rapise and create a new test and call it `TwoDialogsAnalogRelative`.

(3) Press the Record/Learn button in the toolbar of Rapise.

(4) When the "Select an Application to Record" dialog is displayed, choose the `TwoDialogs.exe` application. Since we will not be using a library for this recording, the library selection is irrelevant. Press the Select button.

(5) The Recording Activity dialog will again be displayed with an empty grid.

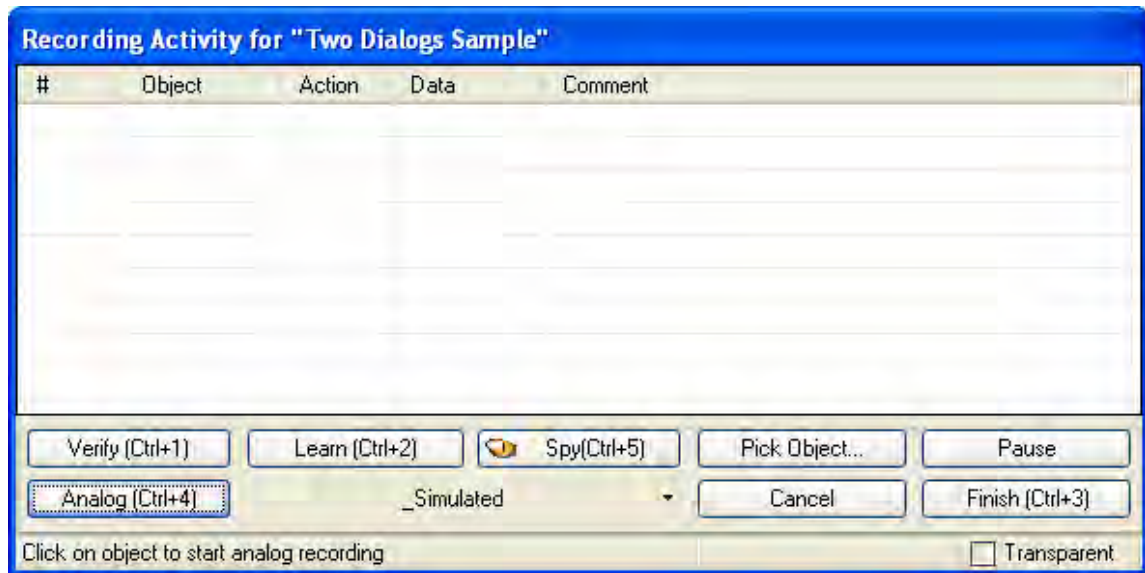
NOTE: this recording session is going to be a little different from previous sessions. Previously we could interrupt our object-related recording/learning with other activities and because Rapise was recording activity only related to the target application, our recording or object learning would be unaffected. However, in analog recording, Rapise is monitoring the mouse and keyboard for the entire system - for all applications. This means that if you answer an email in the middle of analog recording, or log in to a secure system, all the steps including mouse movement, keystrokes, etc., will all be recorded. However, note also that screen contents are not recorded by Rapise.

(6) If the TwoDialogs UI has been occluded, bring it back to the front so you don't have to hunt for it during recording.

(7) When you're ready to record the session, hit the Analog button on the Recording Activity dialog.

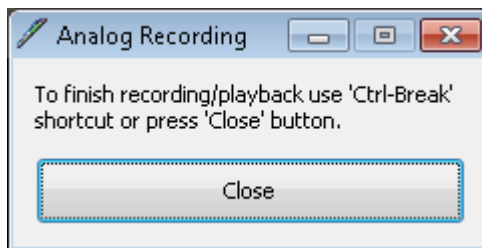
NOTE: The key sequence Ctrl+4 starts an absolute analog recording session. Press the Analog button to start the relative analog recording session.

When you press the Analog button, two things will happen. Firstly, the status bar of the Recording Activity dialog will change to read, "Click on object to start analog recording."



After the next mouse click, Rapise is recording all mouse and keyboard activity until you stop the recording.

Secondly, a minimized window will be created that indicates that analog recording is in progress and allowing you to stop the recording.



(7) Go to the TwoDialogs AUT and click anywhere in the application's window to start the analog recording.

Click the mouse on the empty "Please enter your name" text box.

Type a name in the text box.

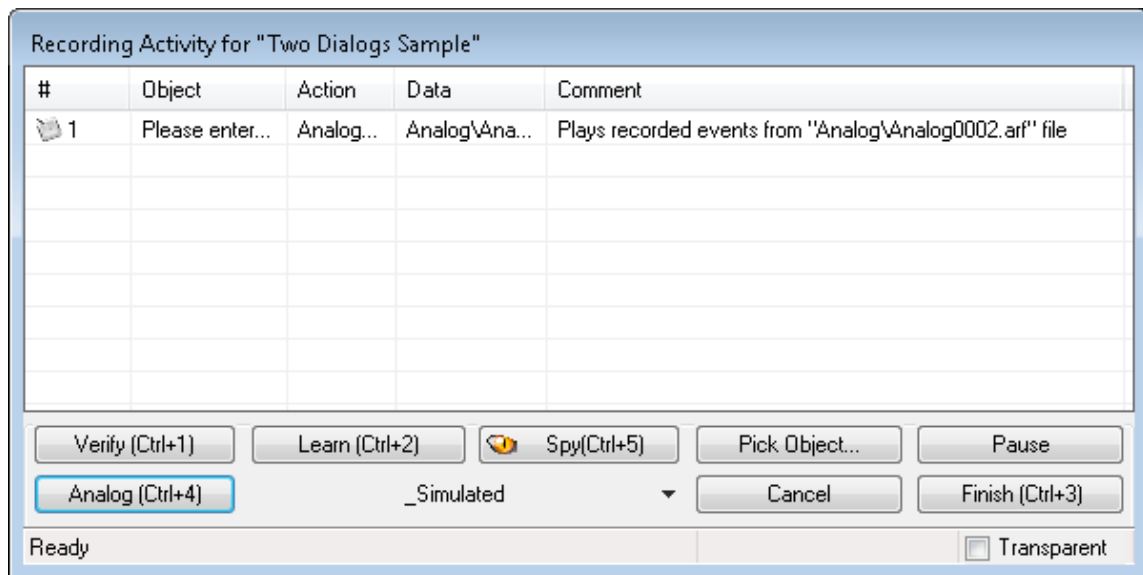
Hit the <tab> key or click the left mouse button to advance the input position to the second text box.

Type another name.

Move the mouse to the OK button and press the mouse left button.

(8) When you have recorded enough, switch to the Analog Recording dialog box and press the close button or press the key sequence Ctrl+Break. If you use the "close" button on the Analog Recording dialog, the movement of the mouse to the Analog Recording dialog, and the mouse-click on the Close button will be recorded as part of the analog recording output. This might not be a desirable outcome at playback time because the Analog Recording dialog will not be present and the mouse click will be played in a potentially random place on the screen. For this reason, Ctrl+Break is probably a better option to terminate analog recording.

NOTE: The grid will have no entry added until you end the analog recording with the Close button in the Analog Recording dialog. When you do, it will add an entry to the grid.



(9) You can now record additional analog sessions if you wish.

(10) You can record normal object activity before and/or after the analog recording. When you have finished all recording press the Finish button or hit Ctrl+3.

(11) The Rapise screen will now be restored and will have placed focus in the editor pane of the Rapise with TwoDialogsAnalogAbsolute.js scrip displayed. You should see code something like the following:

```
//Plays recorded events from "Analog\Analog0003.arf" file
SeS('Simulated').DoAnalogPlay("Analog\Analog0003.arf");
```

(12) Press the Play button on the Rapise toolbar to playback the recording you made. Be sure not to interfere with the mouse or keyboard whilst the recording is playing back.

NOTE: You will see all mouse and keyboard activity reproduced as the analog recording plays. The recording will start from the point where you left-clicked the mouse to begin the recording (step 7 above) and will end with clicking the close button in the Analog Recording dialog. If you used Ctrl +Break to end the recording then the last recorded activity will be the one that keystroke.

(13) When the analog playback is complete, use the mouse to move the Two Dialogs AUT to a different location on the screen. Play the recording again, and watch the operation unfold. The most important thing to realize is that the relative analog recording will playback the recording wherever the application is positioned on the screen. This is because you used relative analog recording. However, once the recording within the AUT is complete, all mouse motion and keyboard strokes are relative to the current position of the AUT. Suppose that during analog recording, you click the OK button in TwoDialogs.exe, then move the mouse to terminate the recording using the analog recording Close button. Now, prior to playback, you move the AUT to a different location on the screen and hit playback. All the activity within the AUT will be faithfully reproduced. However, the mouse motion outside the AUT will be relative to the position, so the following activities will not be accurately reproduced. Try this for yourself, but be sure to minimize all applications before starting so you don't cause mouse events where they will do harm to other applications on the screen.

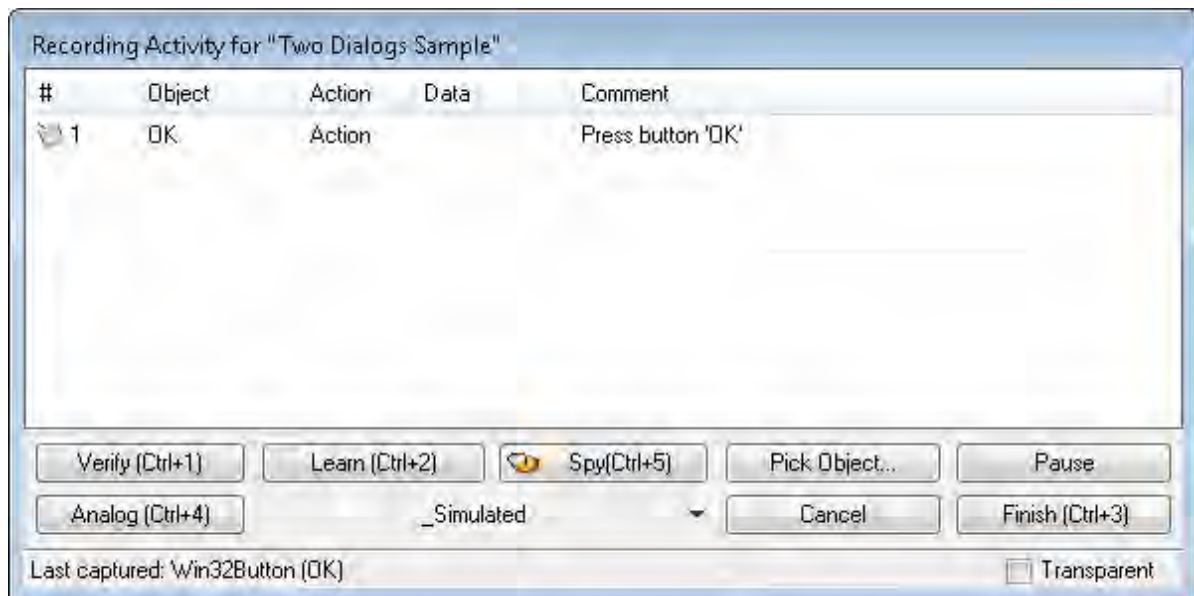
2.6.7 Learn an Object

To illustrate learning an object, we return to the [TwoDialogs](#) sample.

First, let's learn the OK button using recording. We have done this before in the [TwoDialogs](#) sample.

Steps:

- (1) Run TwoDialogs sample AUT. By default this will be located in C:\Program Files\Inflectra\Rapise\Samples\TwoDialogs\TwoDialogs.exe
- (2) Start Rapise and create a new test and call it TwoDialogsRecording.
- (3) Press the Record/Learn button in the toolbar of Rapise.
- (4) When the "Select an Application to Record" dialog is displayed, choose the TwoDialogs.exe application and in the library list, select only the top library on the list - "Auto." Press the Select button.
- (5) In the TwoDialogs AUT, use the mouse to press the OK button. Dismiss the alert message box complaining about the empty name.
- (6) Notice that two things will happen. Firstly, the OK button will be surrounded with a red marker, indicating that the OK button has been learned. Secondly, the action of clicking the OK button is recorded in the Recording Activity dialog. That recording has a single entry.:



- (7) Press the Finish button (or press Ctrl+3) to end the recording.
- (8) Rapise will return to be the foreground application, and it will have selected the TwoDialogsRecording.js (or whatever name you gave the test when you created it).
- (9) Notice that there is a single line or script that has been added to the script file:

```
SeS('OK').DoAction();
```

This line of script has two interesting parts.

The "SeS('OK') is the identity (not the locator or location) of the OK button. This is the object that was learned during recording.

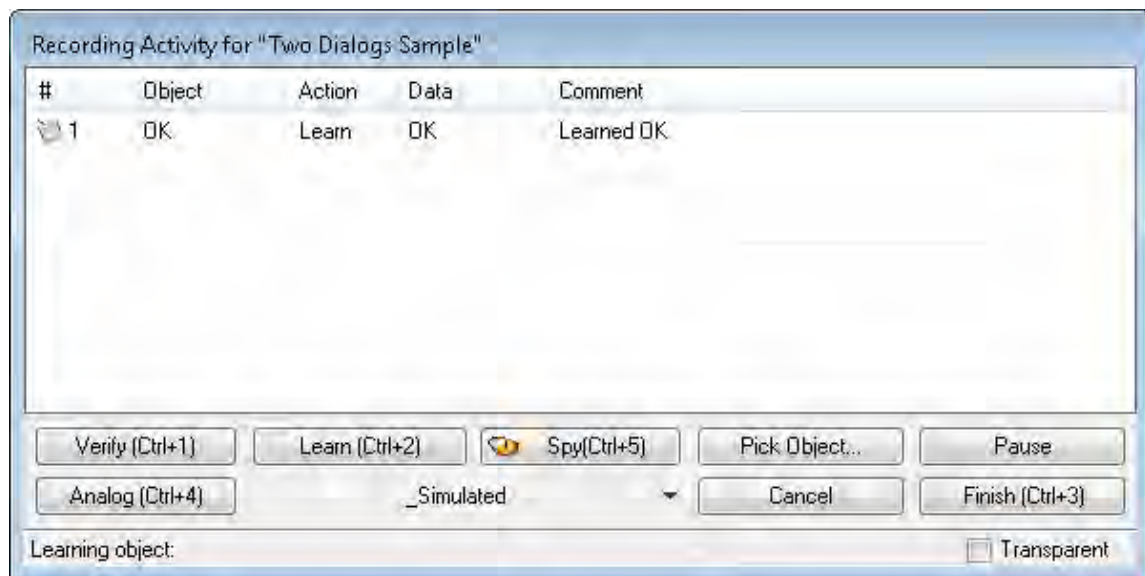
The "DoAction()" is the instruction to the running script to take the action associated with a button. A normal button has only a single possible action - to be pressed.

The Record/Learn process has taken both steps for you, and joined them together.

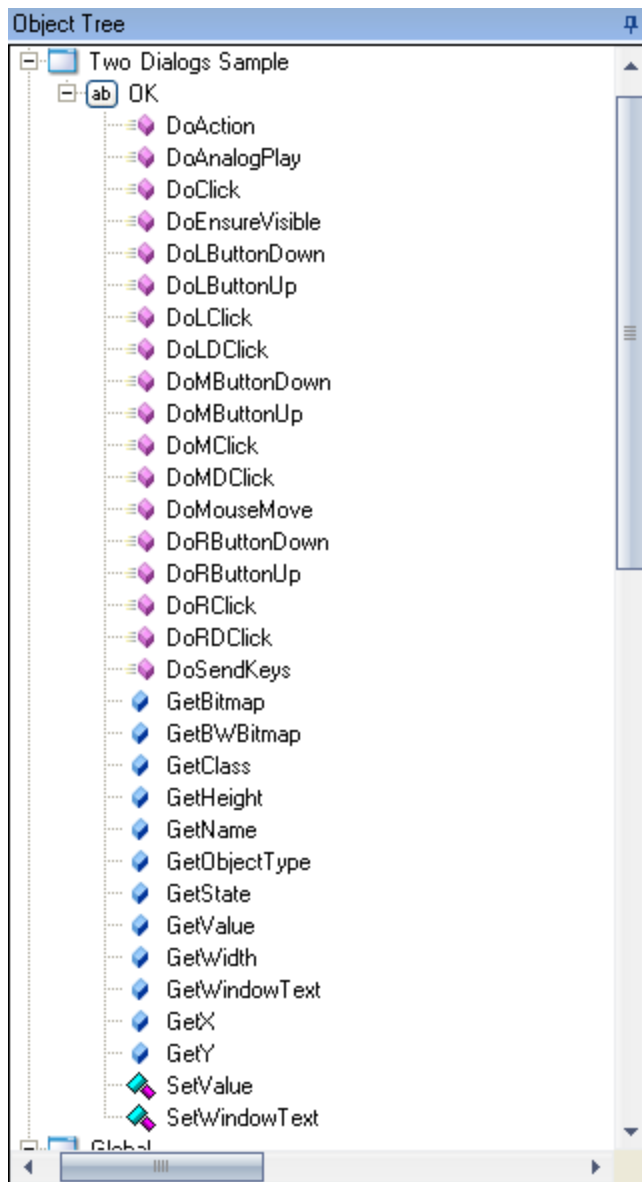
Now, let's use (normal) object learning to learn the same OK button and to call a method for the object.

Steps:

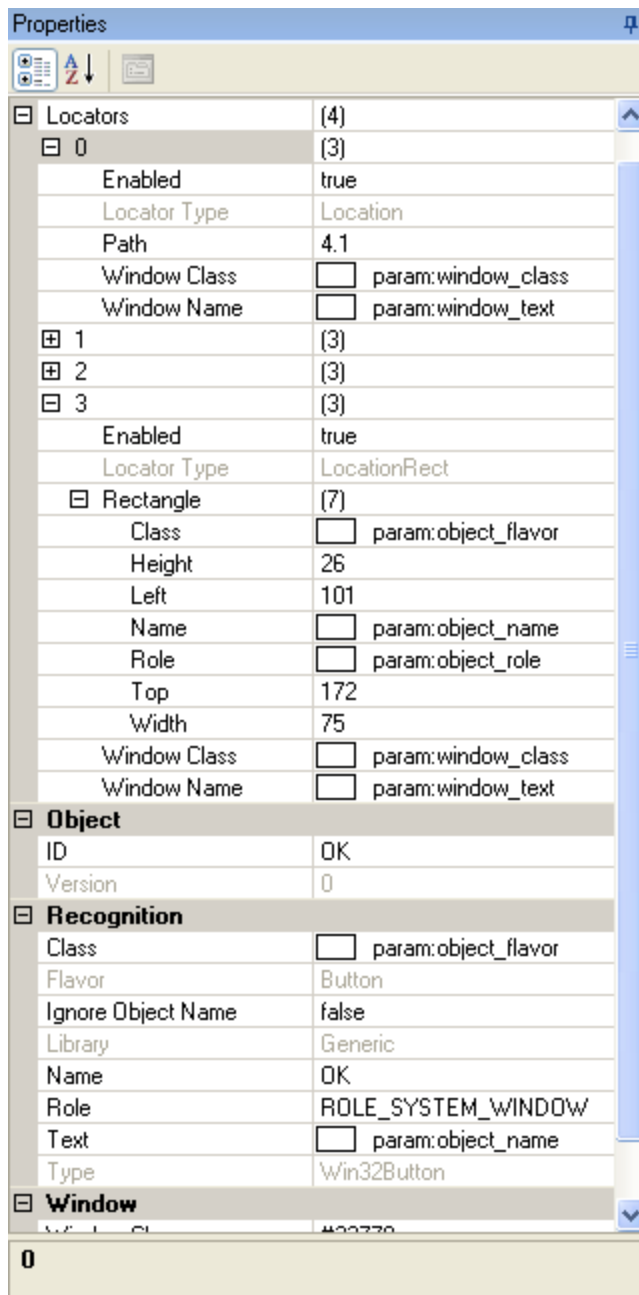
- (1) Run TwoDialogs sample AUT. By default this will be located in C:\Program Files\Inflectra\Rapise\Samples\TwoDialogs\TwoDialogs.exe
- (2) Start Rapise and create a new test and call it TwoDialogsLearn.
- (3) Press the Record/Learn button in the toolbar.
- (4) When the "Select an Application to Record" dialog is displayed, choose the TwoDialogs.exe application. Leave the library selection in its default state - we will not be using it this time. Press Select. Wait for the Recording Activity dialog to appear in the lower-right corner of the screen.
- (5) Hover the mouse over the OK button of the TwoDialogs AUT but do not press the button.
- (6) With the mouse positioned over the OK button, press Ctrl+2 (the "Learn" command). You will see the OK button surrounded with a red highlight. You will also see that the Recording Activity dialog has been updated with a Learn event.



- (7) Press the Finish button or Ctrl+3 to end the recording session. You will now see that Rapise has "learned" about the OK button, and the Object Tree in the upper left-hand pane of the Rapise has a new entry called "OK" (shown here expanded). The list of items contained under the OK button entry in the Object Tree is the set of methods and properties available for the OK object. Methods are listed with purple icons, read properties are listed with blue icons, and write properties are listed with blue and purple icons. Notice that the DoAction property is listed and recall in the previous section when we recorded pressing the button, the DoAction method was chosen for the button-press action.



(8) While we are looking at this OK object, let's make a few observations about it. These observations will be useful for your later dealings with Rapise and will make the script more informational and relevant as you delve into Rapise. First, look down at the Properties box that appears under the Object Tree in the bottom left corner of the Rapise screen. The screenshot below has some of the tree nodes expanded.



First, notice that the OK button has four (4) "locators" defined. When you have Rapise "learn" an object, it must collect data about that object so that it can relocate it even if the application has moved on the screen, and even if the application is in a different state of execution. In order to accomplish this, Rapise looks for all useful ways to uniquely identify the object. As bad, or perhaps worse, than not being able to find an object would be to find the wrong object on the AUT. Every time Rapise is required to locate this object, it will first try to use the first locator. If it fails to positively and uniquely match with that locator, it will try the second, and so on. Rapise will not give up and declare failure until it has failed to identify with all available locators.

Second, notice the ID entry in the Object section of the pane. This is the name of the object from Rapise's perspective. All Rapise names are available through the SeS() function call. Therefore, if we

want to refer to the "OK" object, we will use `SeS("OK")` to refer to it. Once we have correctly identified the object, all valid methods and properties can be accessed by using that object as the basis.

Thirdly, notice in the main editor window of the Rapise, that no code has been added. When you identified the OK button, all Rapise did was add the new object to the Object Tree. It did not write any code in the javascript file.

(9) In the automated (recorded) section above, you saw that when you pressed the OK button on the dialog, Rapise recorded a function like this:

```
SeS("OK").DoAction();
```

This time, you will use the established name of the OK button object, but do something a little more interesting than its default action to demonstrate how to use Rapise.

(10) Move the cursor into the editor part of the Rapise and make sure you are editing the file called `TwoDialogsLearn.js`. At the moment, this file still looks something like this:

```
//##### Script Steps #####

function Test()
{

}

g_load_libraries=["Generic"];
```

Between the open and close brace, add the following command:

```
SeS("OK").DoClick();
```

Hit the Play button and watch what happens.

The click will register as a command to the object and it will perform the action on the object.

While we have the context of this situation, let's complicate it just a little more to illustrate the intricacy as well as the flexibility of Rapise and `SeS`.

There is a method whose names looks interesting: `DoLButtonDown()`.

If we were to invoke `DoLButtonDown()` on the "OK" object, we would expect this would be the same as `DoClick()`.

However, go back to the AUT for a moment. Using the mouse, press the left mouse button over the OK button but don't take your finger off the left mouse button.

What happens is that the button takes its pressed state in appearance, but the button is not clicked.

The reason for this is that the `DoClick()` (or `DoAction()`) events cause the mouse button to be clicked as well as released.

Therefore, we would need to have a pair of events:

```
SeS("OK").DoLButtonDown();
SeS("OK").DoLButtonUp();
```

in order to make the "click" happen.

Try this in the test script you have created by adding those two lines of code in place of the `DoClick()` line.

It doesn't work!

Let's play a little with this problem.

When you press the Play button, leave the mouse alone. Just press the left mouse button on the Rapise Play button and take your hand away from the mouse.

The script does not press the OK button in the TwoDialogs AUT.

Now, press the Play button on the Rapise and **quickly** move the mouse to hover over the OK button in the TwoDialogs AUT.

Now it works!

What's going on here is that the DoLButtonDown() and DoLButtonUp() methods are pressing the mouse irrespective of where the mouse cursor is positioned.

The other functions, DoClick and DoAction are methods that are applied to the button and so they are applied to the button.

Before we can expect DoLButtonDown() and DoLButtonUp() methods to work, we have to first the mouse cursor to the button.

```
function Test()  
{  
    SeS("OK").DoMouseMove(25, 15);  
    SeS("OK").DoLButtonDown();  
    SeS("OK").DoLButtonUp();  
}
```

will accomplish that.

Notice that Rapise will actually move the mouse to the coordinates (25, 15) within the OK button. Also notice that if you move the mouse while the test is playing, you will make the test fail.

As a last experiment in this arena, try moving the mouse outside the boundaries of the OK button object before calling the DoLButtonDown() function.

```
function Test()  
{  
    SeS("OK").DoMouseMove(250, 150);  
    SeS("OK").DoLButtonDown();  
    SeS("OK").DoLButtonUp();  
}
```

Once again, the script will fail.

2.6.8 Deal with a Simulated Object

Example: The toolbox of Microsoft's Paint utility (c:\windows\system32\mspaint.exe) is a compound object that contains custom buttons and is surrounded by a containing box. To understand this completely, start mspaint.exe from the Rapise.

Steps:

- (1) Open a new test under Rapise.
- (2) Press the Record/Learn button on the application bar.
- (3) When the "Select an Application to Record" dialog appears, select the Run Application tab. Enter mspaint in the "Full path to application" edit box. Press the Run button.

If you are unfamiliar with MS Paint, take a few minutes to play with it.

In particular, notice the toolbox that appears in the upper-left margin of the utility and the color selection box that appears on the bottom-left of the application window.

- (4) Press Ctrl+5 to spy on the UI. Press Ctrl+G to spy on the Paint application. Notice several things

about the behavior of the MS Paint application under the Object Spy.

- (i) As you move the mouse inside the tools box, the entire surrounding box will show a red highlight but the individual tool buttons will not.
- (ii) The same is true of the color palette and the bottom-left of the screen.
- (iii) As you move the mouse over the apparent buttons and controls, the information in the spy dialog is more sparse than for other applications. The tool buttons do not have default actions, and they are not identified as buttons. Rather they are identified only as "child" objects.

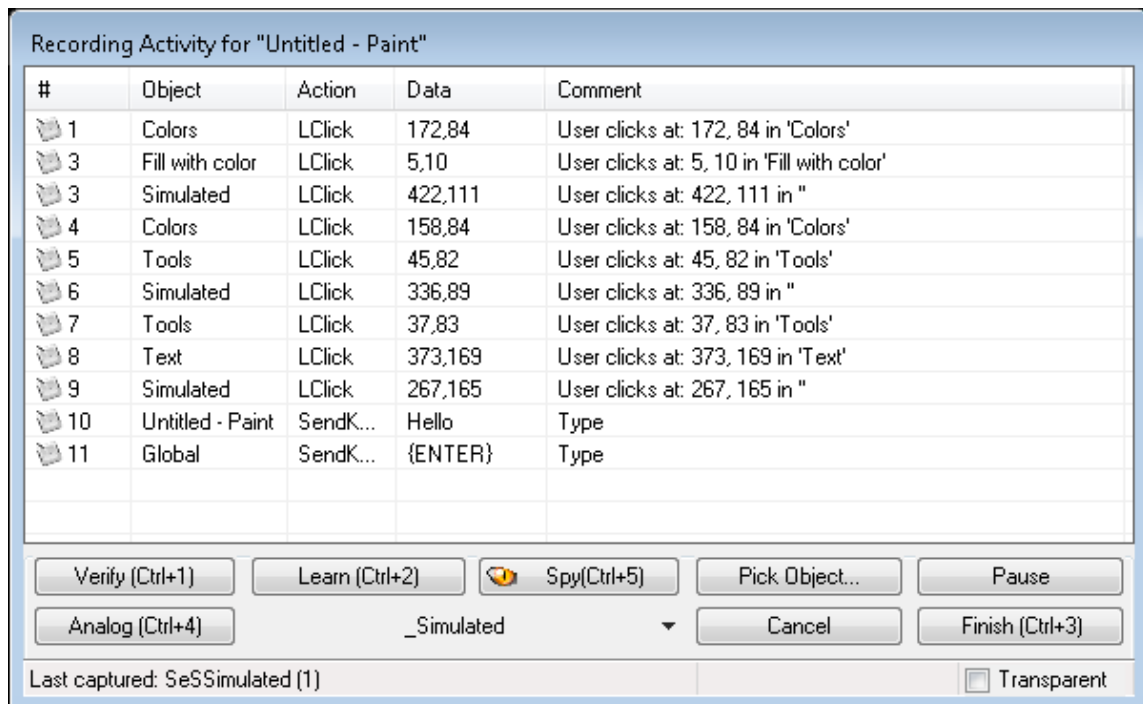
This combination makes it impossible for Rapise to identify and learn the objects as integral objects.

Furthermore, notice that as you change the size of the Paint window, the relative positions of the color palette and the tool box change.

The only way in which Rapise can be 'taught' these controls (and others we will discover later) is by "simulating" them as though they were buttons that can accept commands such as the press event.


In fact, Rapise will recognize these non-objects without you having to take particular action. Let's discover this and what it means:

- (1) Open a new test under Rapise; call it MSPaint.
- (2) Press the Record/Learn button on the application bar.
- (3) When the "Select an Application to Record" dialog appears, clear all selection boxes in the library list box. You will have to scroll that section of the dialog box to make sure all selections are clear. We are choosing no loaded libraries so that Rapise will not be able to "cheat" and know about any objects on the screen.
- (4) select the Run Application tab. Enter mspaint in the "Full path to application" edit box. Press the Run button.
(Applications that reside in C:\windows\system32 can be started by their names because C:\windows\system32 must be in the system path.)
- (5) When the Recording Activity dialog is displayed, press Learn (Ctrl+2)
- (6) Do a small amount of things in Paint. For example:
 - (i) Click on the light-grey color in the palette.
 - (ii) Click on the tipping paint-can (Fill with color).
 - (iii) Click on the empty canvas.
 - (iv) Click on the red color in the palette.
 - (v) Click on the "A" tool (Text).
 - (vi) Click in the canvas and type a few characters, such as "Hello."
 - (vii) Click in a blank place under the tool button.
- (7) Look at the Recording Activity dialog grid. It will be something like this:



Recording Activity for "Untitled - Paint"

#	Object	Action	Data	Comment
1	Colors	LClick	172,84	User clicks at: 172, 84 in 'Colors'
3	Fill with color	LClick	5,10	User clicks at: 5, 10 in 'Fill with color'
3	Simulated	LClick	422,111	User clicks at: 422, 111 in "
4	Colors	LClick	158,84	User clicks at: 158, 84 in 'Colors'
5	Tools	LClick	45,82	User clicks at: 45, 82 in 'Tools'
6	Simulated	LClick	336,89	User clicks at: 336, 89 in "
7	Tools	LClick	37,83	User clicks at: 37, 83 in 'Tools'
8	Text	LClick	373,169	User clicks at: 373, 169 in 'Text'
9	Simulated	LClick	267,165	User clicks at: 267, 165 in "
10	Untitled - Paint	SendK...	Hello	Type
11	Global	SendK...	{ENTER}	Type

Verify (Ctrl+1) Learn (Ctrl+2)  Spy (Ctrl+5) Pick Object... Pause

Analog (Ctrl+4) _Simulated Cancel Finish (Ctrl+3)

Last captured: SeSSimulated (1) Transparent

Notice that the two clicks in the canvas were recorded as "simulated" objects.

Notice also that the two pairs of clicks in the tools and colors sections were recorded as LClick (left click) in "Tools" and "Colors". However, there are no objects by these names. To find out where these pseudo objects came from, we need to look in the file MSPaint.objects.js (the name will be the name you gave the test project). The following excerpt from the MSPaint.object.js shows the start of the definition of the "Colors" object:

```
1  var saved_script_objects={
2  >>  "Colors":{
3  >>  "locations": [
4  >>>  {
5  >>>>  "locator_name": "Location",
6  >>>>  "location": {
7  >>>>>  "location": "4.4.4.1.4",
8  >>>>>  "window_name": "param:window_text",
9  >>>>>  "window_class": "param:window_class"
10 >>>>  }
11 >>>  },
12 >>>  {
13 >>>>  "locator_name": "LocationPath",
14 >>>>  "location": {
15 >>>>>  "window_name": "param:window_text",
16 >>>>>  "window_class": "param:window_class",
17 >>>>>  "path": [
18 >>>>>>  {
19 >>>>>>>  "object_name": "param:object_name",
20 >>>>>>>  "object_class": "param:object_class",
21 >>>>>>>  "object_role": "param:object_role"
22 >>>>>>>  },
23 >>>>>>>  {
24 >>>>>>>>  "object_name": "param:object_name",
25 >>>>>>>>  "object_class": "param:object_class",
26 >>>>>>>>  "object_role": "ROLE_SYSTEM_WINDOW"
27 >>>>>>>>  },
28 >>>>>>>>  {
29 >>>>>>>>>  "object_name": "param:object_name",
30 >>>>>>>>>  "object_class": "AfxControlBar42u",
31 >>>>>>>>>  "object_role": "param:object_role"
32 >>>>>>>>>  },

```

(8) Press Ctrl+3 to end the recording.

2.7 Technologies

This section focuses on specific technologies supported by Rapise.

2.7.1 Adobe Flex

Purpose

Rapise includes support for Adobe Flex applications executed

- inside Adobe Flash Player in Internet Explorer or Firefox
- and Adobe Integrated Runtime (AIR).

Flex versions 3 and 4 are supported.

Usage

To test Flex applications, you must have **Flex Builder** installed. Link your application with

FlexAdapter.swc (part of Rapise) and **automation_agent.swc** and **automation.swc** (part of Flex Builder).

The compiler arguments for FlexBuilder 3 should look like:

```
-include-libraries "C:/Program Files/Adobe/Flex Builder 3/sdks/3.2.0/frameworks/
libs/
automation_agent.swc" "C:/Program Files/Adobe/Flex Builder 3/sdks/3.2.0/
frameworks/libs/
automation.swc" "C:/Program Files/Inflectra/Rapise/Extensions/Flex/FlexAdapter/
bin/FlexAdapter.swc"
```

The compiler arguments for FlashBuilder 4 should look like:

```
-include-libraries "C:/Program Files/Adobe/Flash Builder 4/sdks/4.0.0/
frameworks/libs/
automation_agent.swc" "C:/Program Files/Adobe/Flash Builder 4/sdks/4.0.0/
frameworks/libs/
automation.swc" "C:/Program Files/Inflectra/Rapise/Extensions/Flex/FlexAdapter/
bin/FlexAdapter.swc"
```

Note: You can avoid linking with third-party libraries if your application is browser-based and you will use [FlexLoader](#).

Adobe Flash Player

Adobe Flash Player has restricted security settings for SWFs opened from the file system. To enable testing of such SWFs, their corresponding folders must be listed in the **FlashPlayerTrust** directory. You can find the FlashPlayerTrust directory here:

```
<system>Macromed\Flash\FlashPlayerTrust
```

to enable testing just for the current user, use this FlashPlayerTrust directory:

```
<ApplicationData>Macromedia\Flash Player\#Security\FlashPlayerTrust
```

To register your SWF just create a file with the name "*<name of your SWF>.cfg*" and put it in this directory. In the file, write a path to the SWF folder.

Note: If you do not have *FlashPlayerTrust* directory in one of locations listed above then you will have to create missing directories yourself.

Adobe AIR

To record and playback tests for Adobe AIR application you need to run the application manually. E.g.:

```
"C:\Program Files\Adobe\Flex Builder 3\sdk\3.2.0\bin\adl.exe" C:\Program Files\Inflectra\Rapise
\Samples\AdobeFlex3\AUTFlexAIR\bin-debug\AUTFlexAIR-app.xml
```

Sample Applications and Test

Two sample Flex 3 applications are available with the Rapise installation. They can be found at:

```
<Rapise install dir>/Samples/AdobeFlex3/AUTFlexFP/b
```

and

```
<Rapise install dir>/Samples/AdobeFlex3/AUTFlexAIR/.
```

The binaries and source are both provided.

One sample Flex 4 applications is available with the Rapise installation. It can be found at:

```
<Rapise install dir>/Samples/AdobeFlex4/AUTFlexFP4/.
```

The binaries and source are both provided.

Sample tests for the sample applications can be found in `<Rapise install dir>/Samples/AdobeFlex3` and `<Rapise install dir>/Samples/AdobeFlex4`. To select the target for testing edit the following line in `AdobeFlex.user.js` file:

```
/**
 * Select flex target for testing.
 */
var testTarget = "FlexIE"; // "FlexAIR", "FlexFirefox", "FlexIE"
```

Note: If you choose AIR target, please, do not forget to run the sample application before executing the test.

See Also

- [Tutorial: Testing Adobe Flex Applications](#)

2.7.2 Cross Browser Testing

You can run your recording in a different browser than the one in which it was recorded.

Selecting a new Playback Browser

First, open the script for your test using the [Test Files Dialog](#). Locate the line where `g_load_libraries` is initialized.

Under the Hood

It is possible to have more control about cross browser execution using available APIs and configuration variables. You can also run the recording in multiple browsers in succession. Both options require modification of the script. The necessary modifications are described below. First, open the script for your test using the [Test Files Dialog](#). Locate the line where `g_load_libraries` is initialized.

If you recorded your script in IE you will see:

```
g_load_libraries=["%g_browserLibrary:Internet Explorer HTML%"];
```

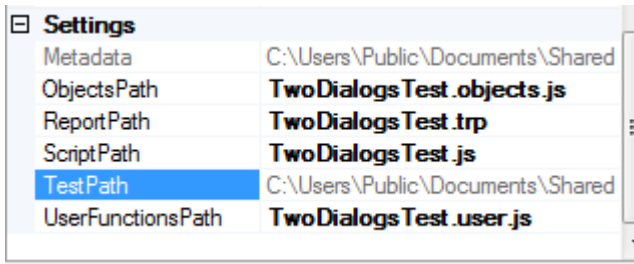
If you recorded it in Firefox, you will see:

```
g_load_libraries=["%g_browserLibrary:Firefox HTML"];
```

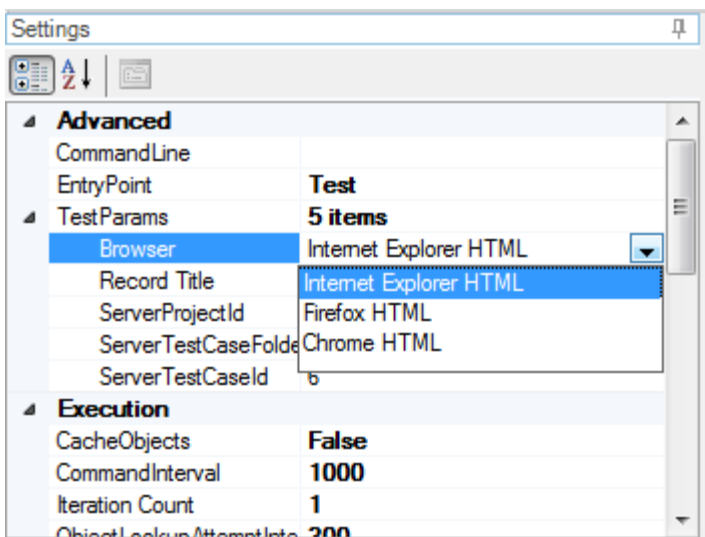
This line tells Rapise to use the browser library specified in the special **g_browserLibrary** variable setting, and if no value is set, default to the named browser (Internet Explorer or Firefox in this example).

Changing the Playback Browser

In the File explorer pane of Rapise, choose the **Settings** tab:



Expand the **Test Params** option and click on the **Browser** dropdown list:



Change the browser to either Firefox, Internet Explorer or Chrome.

Once you have changed this setting, [Playback](#) the script normally and it will playback in the selected browser.

Changing this setting will effectively set the value of the **g_browserLibrary** global variable.

Playback in Multiple Browsers - SpiraTest

Executing a test in multiple browsers is slightly more complicated. We recommend that you use **SpiraTest 'Test Sets'** where you may define multiple test cases pointing to the same Test with a different **g_browserLibrary** parameter value.

The separate help document "**Using SpiraTest with Rapise**" provides specific instructions on using Rapise with SpiraTest to handle the specific case of cross-browser testing as well as more general support for parameterized testing.

See the [SpiraTest Integration](#) topic for more general information on using Rapise with SpiraTest.

Playback in Multiple Browsers - SubTests

As another option, it is also possible to use [sub-tests](#) to organize multi-browser testing where a single test executes itself in different browsers one after another.

1. Record [base](#) test. Put all the recorded actions into a User-defined function and place it into **<testname>user.js** file. For example, function `Login()` inside file **MyTest.user.js**.
2. [Create Sub-Test](#) for **IE** re-using objects and functions from the base test
3. Modify script file in sub-test as follows:

```
function Test()
{
  // Re-use 'Login()' scenario from parent test
  Login();
}

g_load_libraries=["Internet Explorer HTML"];
```

4. Create Sub-Test for **Firefox** re-using objects and functions from parent test
5. Modify script file in subtest as follows:

```
function Test()
{
  // Re-use 'Login()' scenario from parent test
  Login();
}

g_load_libraries=["Firefox HTML"];
```

As a result you have a test for 2 browsers: **IE** and **Firefox**. Each browser is defined by a library in a corresponding sub-test. Rapise contains the [Cross Browser](#) sample using this approach.

2.7.3 Qt Framework

Purpose

Rapise includes support for testing applications written using the Qt Framework written using QWidget controls.

Usage

Rapise fully supports the test automation of Qt based applications. To ensure that Rapise can access the UI elements and properties in the Qt application, MSAA (Microsoft Active Accessibility) support for your Qt application must be enabled. This provides additional information on Qt UI elements to automation software like Rapise and can be accomplished by shipping and loading the "Accessible Plug-in" included in the Qt SDK (Software Development Kit) with the Qt application under test (see below).

Loading Accessible Plug-in for your Qt application:

1. Copy the "**accessible**" directory (and all its contents) from the **Qt SDK** (used to build the application under test) installation folder to the folder of the automated application (e.g. "**Program Files/Your-Application/plugins**"). If you do not have access to the Qt SDK which the Qt application is developed with, please contact the developer of the application and request the "accessible" directory from him.
2. Create a file called "**qt.conf**" (or append if the file already exists) in the root directory of the automated application (e.g. "**Program Files/Your-Application**") with following content (copy and paste the following two lines):

```
[Paths]
Plugins = plugins
```

2.7.4 Java AWT/Swing

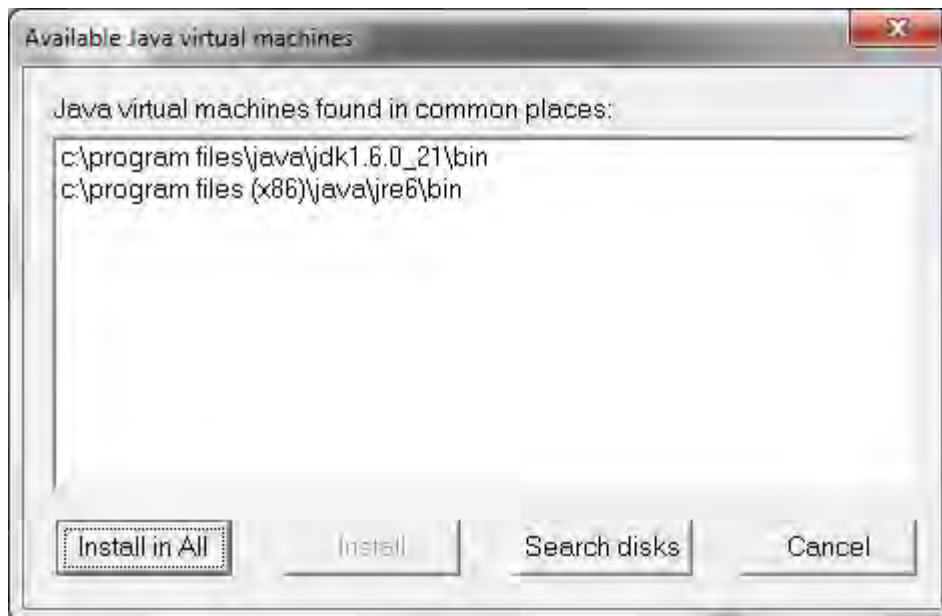
Purpose

Rapise supports the testing of Java applications using either the Abstract Window Toolkit (AWT) or Swing graphic user interface toolkits. For maximum flexibility, Rapise can connect to your choice of JVM.

Usage

In order to use a particular Java Virtual Machine (JVM) with Rapise you need to install Java Bridge into it. Installation process consists of several simple steps:

1. Click the Options icon in the Tools group of the main Rapise ribbon. That will bring up the [Options dialog](#).
2. Click on the Tools > Java Settings button. This will launch the Java Bridge installation dialog:



3. Choose target JVM in the list of available Java machines and press Install button
4. Verify that installation is successful

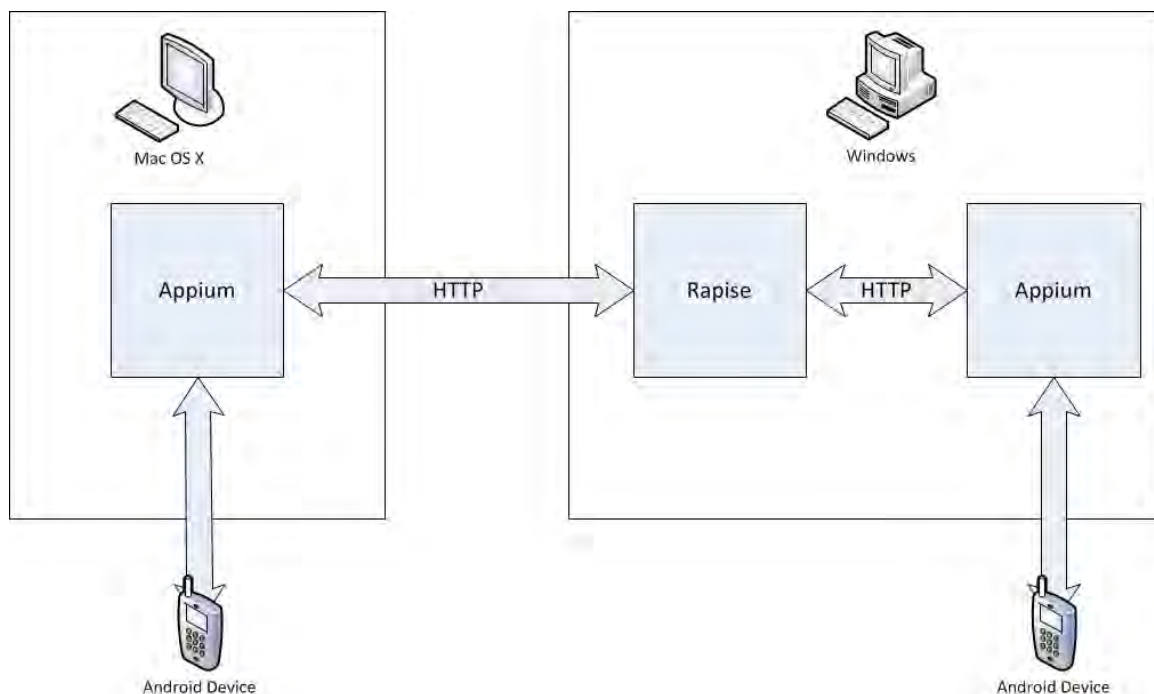
2.7.5 Mobile Testing

Purpose

Rapise lets you record and play automated tests against native applications on a variety of mobile devices using either [Apple iOS](#) or [Android](#). Rapise gives you the flexibility to test your applications on either real or simulated devices.

This section explains **how to setup your environment for mobile testing**, once that is done, you can then go to [the section that explains the process](#) for using Rapise to actually perform [mobile testing](#).

Rapise uses a third-party open-source tool called **Appium** (<http://appium.io>) that is used to actually host the mobile devices and Rapise essentially communicates to the device via. Appium:



Testing Architectures

Rapise runs on Windows computers (PC) and Android devices (both real and simulated) can be tested on either an Apple Macintosh (Mac) computer or a PC. Conversely, iOS devices (both real and simulated) can only be tested on an Apple Macintosh (Mac) computer. So this means that there are three separate possible testing environments that you may need to setup:

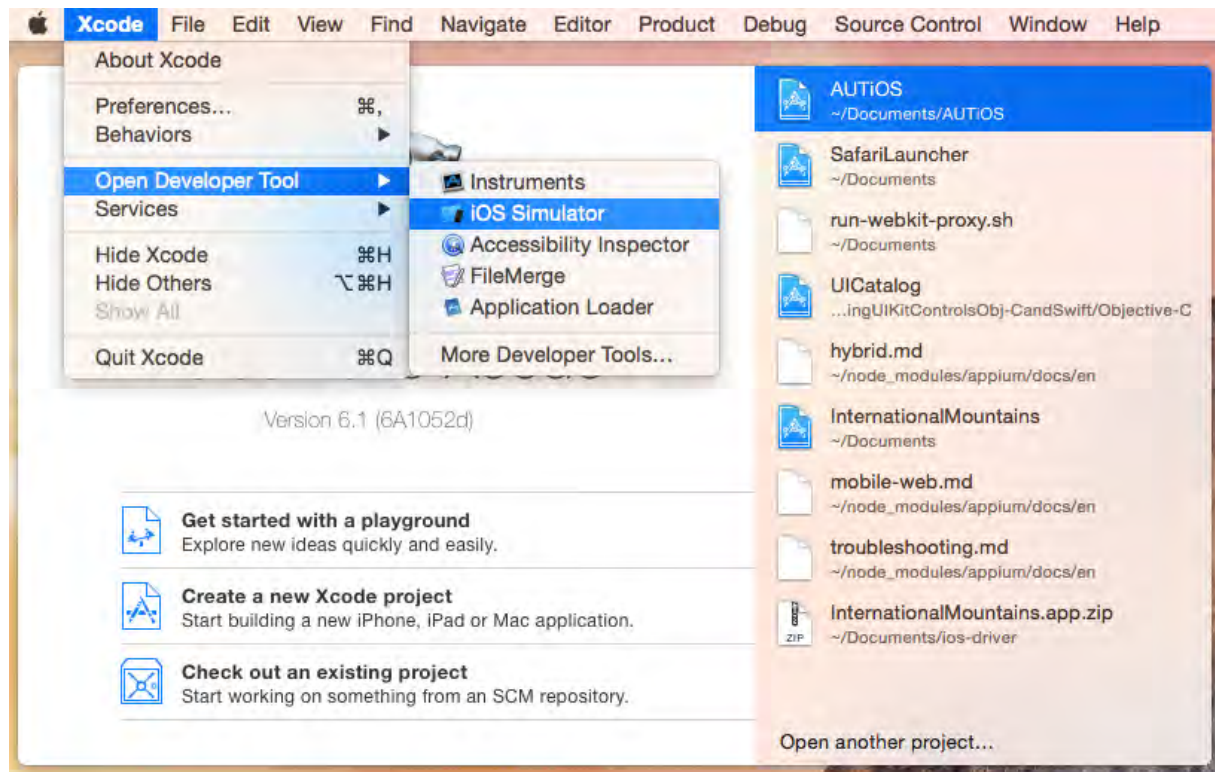
- **Using a Mac to Host iOS Devices.** It will be necessary to install **Appium** and **Apple Xcode** onto the Mac and connect to Appium over the network from Rapise running on your PC.
- **Using a Mac to Host Android Devices.** It will be necessary to install **Appium** and **Android Studio** onto the Mac and connect to Appium over the network from Rapise running on your PC.
- **Using a PC to Host Android Devices.** You can either install **Appium** and **Android Studio** onto a separate PC or you can simply use the same PC that is running Rapise. The only difference will be

whether the URL used to connect to Appium is a localhost URL or one pointing to the other PC.

The steps for setting each of these will be described separately below:

1) Using a Mac to Host iOS Devices

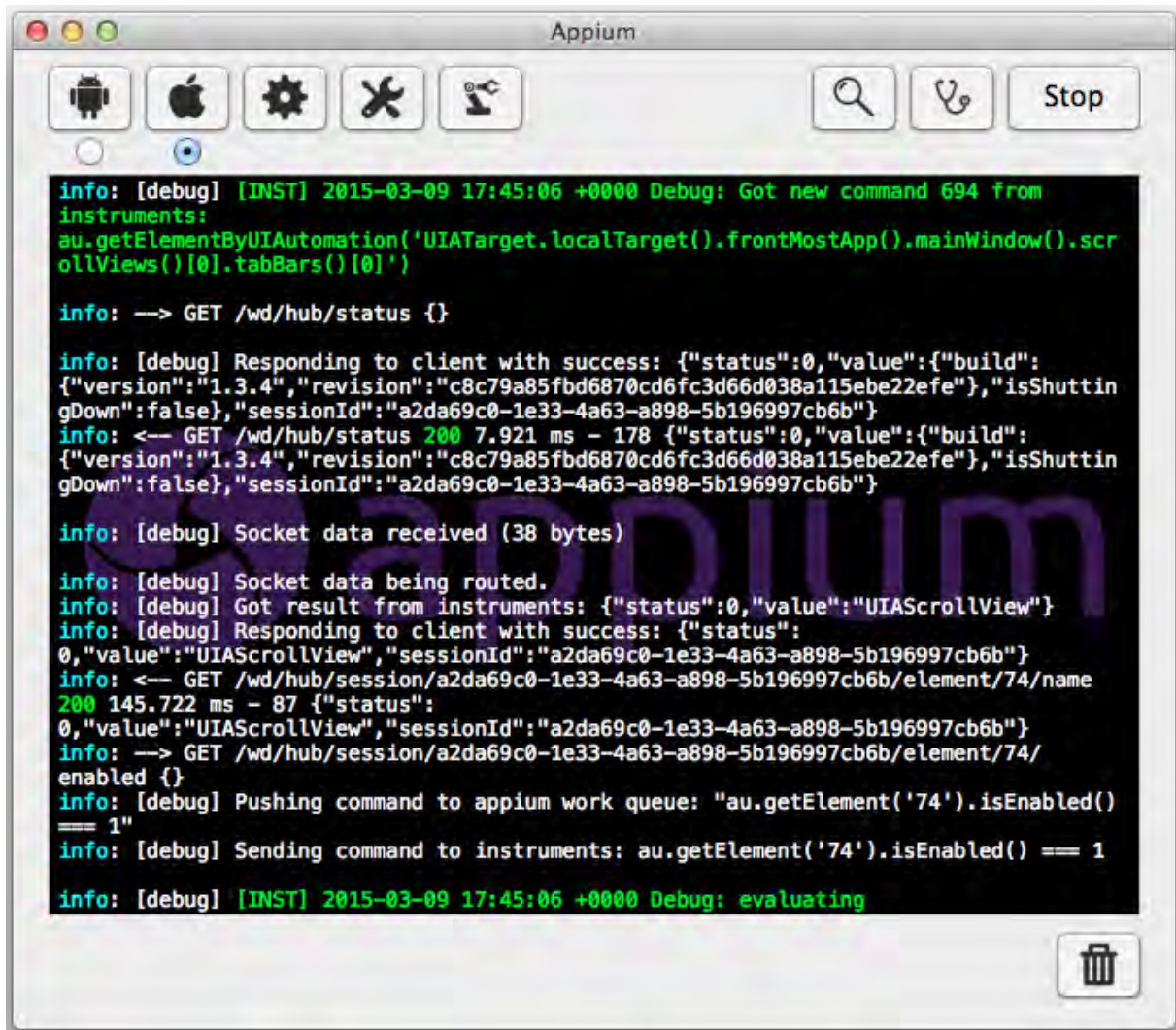
The first thing you need to do is install Xcode from the Apple Mac app store. Make sure you include the **iOS SDK**, and also the **iOS Simulator** if you intend to test simulated iOS devices.



(Please refer to the Apple tutorial <https://developer.apple.com/library/ios/referencelibrary/GettingStarted/RoadMapiOS/> if you are writing your first iOS application and need an introduction into how to develop for iOS).

Since configuring Xcode to build and deploy an application to a physical or simulated iOS device is quite involved, we have created a [separate topic that explains the process](#).

Once you have the iOS environment configured, you need to do is go to the **Appium** website (<http://appium.io>) and install the latest version of Appium. Once it is installed, you need to select the option for **iOS** and click the Play button to start the Appium server:



The screenshot shows the Appium application window. At the top, there are icons for Android, Apple, settings, a wrench, and a magnifying glass, along with a 'Stop' button. The main area is a terminal window displaying the following log output:

```
info: [debug] [INST] 2015-03-09 17:45:06 +0000 Debug: Got new command 694 from
instruments:
au.getElementByUIAutomation('UIATarget.localTarget().frontMostApp().mainWindow().scr
ollViews()[0].tabBars()[0]')

info: --> GET /wd/hub/status {}

info: [debug] Responding to client with success: {"status":0,"value":{"build":
{"version":"1.3.4","revision":"c8c79a85fbd6870cd6fc3d66d038a115ebe22efe"},"isShuttin
gDown":false},"sessionId":"a2da69c0-1e33-4a63-a898-5b196997cb6b"}
info: <-- GET /wd/hub/status 200 7.921 ms - 178 {"status":0,"value":{"build":
{"version":"1.3.4","revision":"c8c79a85fbd6870cd6fc3d66d038a115ebe22efe"},"isShuttin
gDown":false},"sessionId":"a2da69c0-1e33-4a63-a898-5b196997cb6b"}

info: [debug] Socket data received (38 bytes)

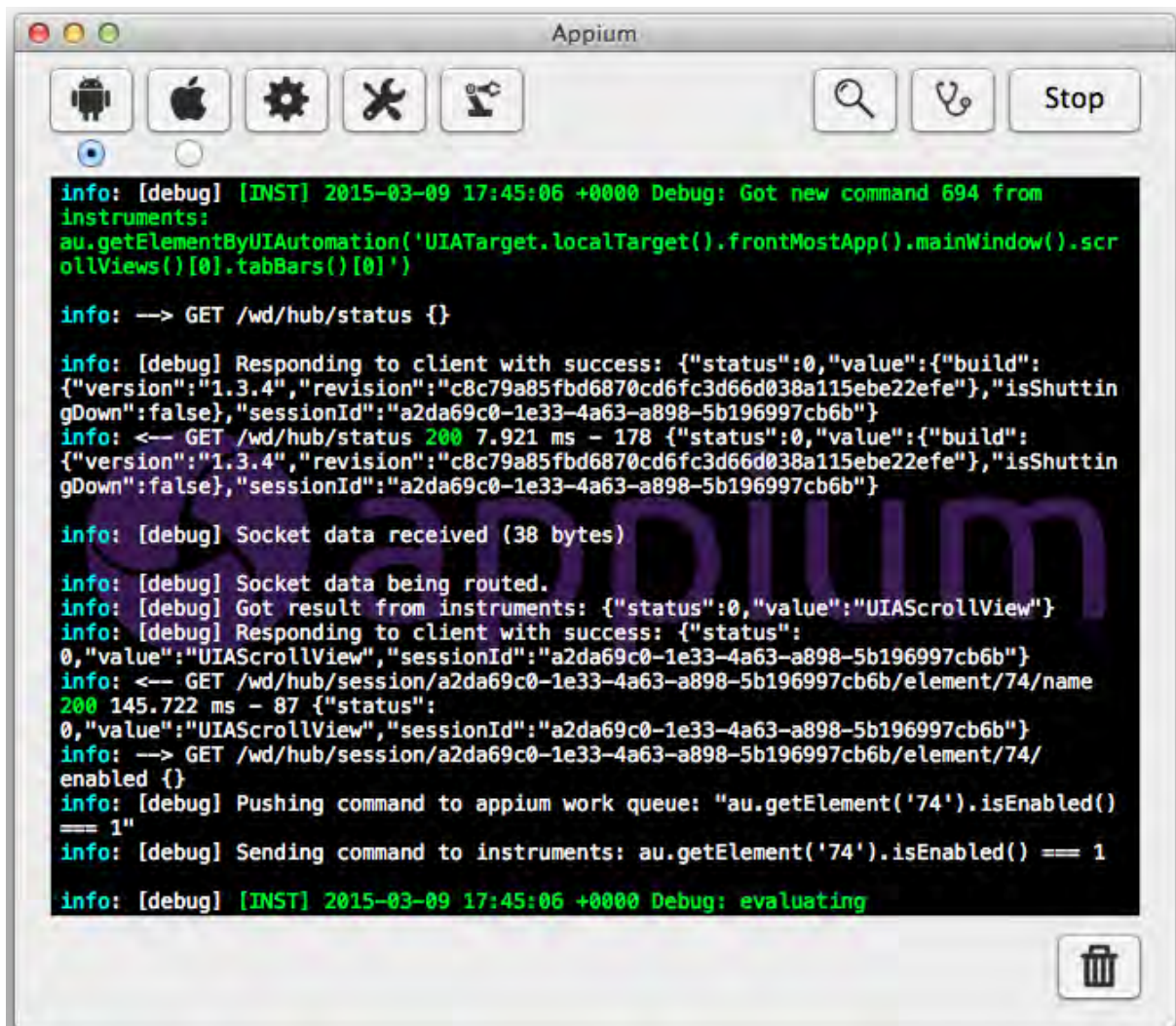
info: [debug] Socket data being routed.
info: [debug] Got result from instruments: {"status":0,"value":"UIAScrollView"}
info: [debug] Responding to client with success: {"status":
0,"value":"UIAScrollView","sessionId":"a2da69c0-1e33-4a63-a898-5b196997cb6b"}
info: <-- GET /wd/hub/session/a2da69c0-1e33-4a63-a898-5b196997cb6b/element/74/name
200 145.722 ms - 87 {"status":
0,"value":"UIAScrollView","sessionId":"a2da69c0-1e33-4a63-a898-5b196997cb6b"}
info: --> GET /wd/hub/session/a2da69c0-1e33-4a63-a898-5b196997cb6b/element/74/
enabled {}
info: [debug] Pushing command to appium work queue: "au.getElement('74').isEnabled()
=== 1"
info: [debug] Sending command to instruments: au.getElement('74').isEnabled() == 1

info: [debug] [INST] 2015-03-09 17:45:06 +0000 Debug: evaluating
```

You are now ready to start [mobile testing of your iOS device](#).

2) Using a Mac to Host Android Devices

The first thing you need to do is go to the **Appium** website (<http://appium.io>) and install the latest version of Appium. Once it is installed, you need to select the option for **Android** and click the Play button to start the Appium server:



The screenshot shows the Appium application window. At the top, there are icons for Android, Apple, settings, a wrench, and a hand. On the right, there are search, refresh, and Stop buttons. The main area is a terminal window with a black background and green and white text. The log shows the following sequence of events:

```
info: [debug] [INST] 2015-03-09 17:45:06 +0000 Debug: Got new command 694 from
instruments:
au.getElementByUIAutomation('UIATarget.localTarget().frontMostApp().mainWindow().scr
ollViews()[0].tabBars()[0]')

info: --> GET /wd/hub/status {}

info: [debug] Responding to client with success: {"status":0,"value":{"build":
{"version":"1.3.4","revision":"c8c79a85fbd6870cd6fc3d66d038a115ebe22efe"},"isShuttin
gDown":false},"sessionId":"a2da69c0-1e33-4a63-a898-5b196997cb6b"}
info: <-- GET /wd/hub/status 200 7.921 ms - 178 {"status":0,"value":{"build":
{"version":"1.3.4","revision":"c8c79a85fbd6870cd6fc3d66d038a115ebe22efe"},"isShuttin
gDown":false},"sessionId":"a2da69c0-1e33-4a63-a898-5b196997cb6b"}

info: [debug] Socket data received (38 bytes)

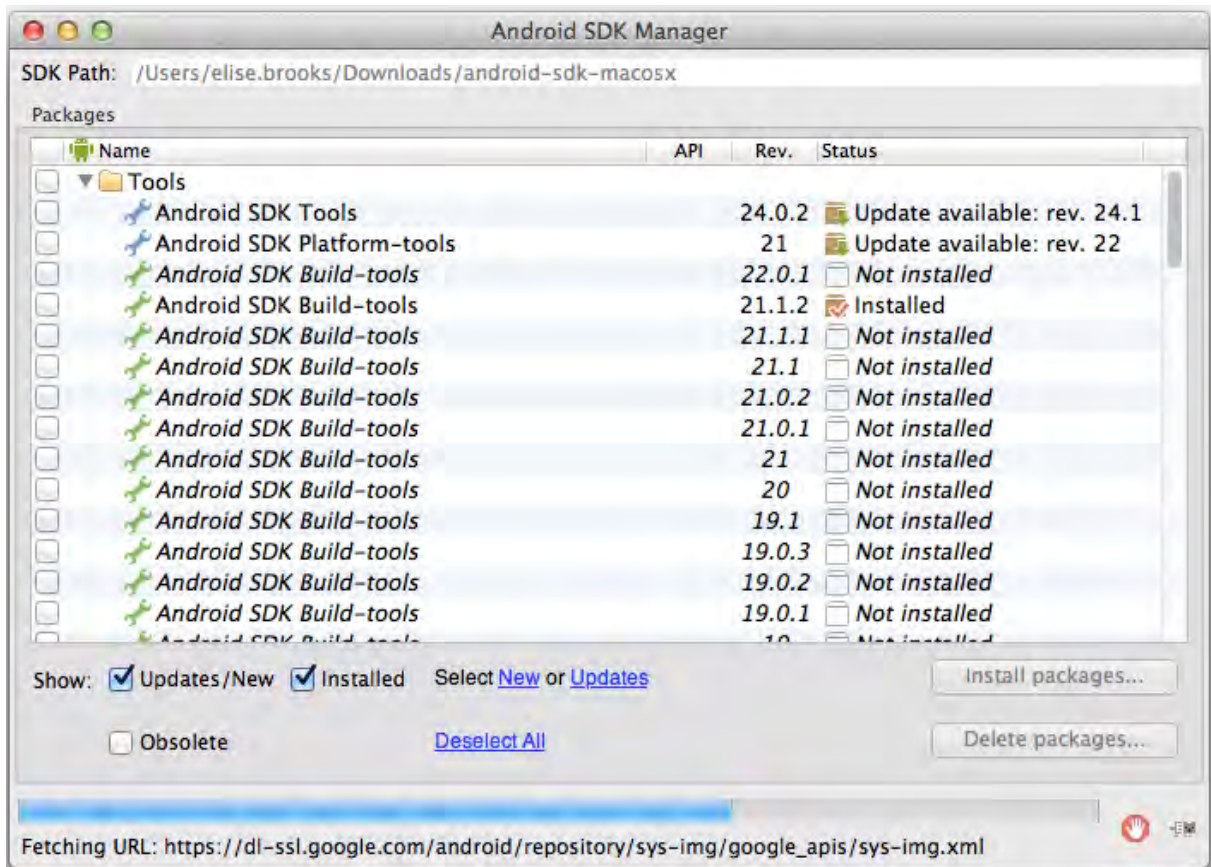
info: [debug] Socket data being routed.
info: [debug] Got result from instruments: {"status":0,"value":"UIAScrollView"}
info: [debug] Responding to client with success: {"status":
0,"value":"UIAScrollView","sessionId":"a2da69c0-1e33-4a63-a898-5b196997cb6b"}
info: <-- GET /wd/hub/session/a2da69c0-1e33-4a63-a898-5b196997cb6b/element/74/name
200 145.722 ms - 87 {"status":
0,"value":"UIAScrollView","sessionId":"a2da69c0-1e33-4a63-a898-5b196997cb6b"}
info: --> GET /wd/hub/session/a2da69c0-1e33-4a63-a898-5b196997cb6b/element/74/
enabled {}
info: [debug] Pushing command to appium work queue: "au.getElement('74').isEnabled()
== 1"
info: [debug] Sending command to instruments: au.getElement('74').isEnabled() == 1

info: [debug] [INST] 2015-03-09 17:45:06 +0000 Debug: evaluating
```

Once that is installed, you will then need to download and install the latest version of Java SE Development Kit (JDK) from the Oracle website (<http://www.oracle.com/technetwork/java/javase/downloads/index.html>). Once that has been installed, make sure that the JAVA_HOME environment variable has been set.

Once that is installed, you will then need to install the Android SDK (you may already have it installed if you are doing Android development). You can download it from: <https://developer.android.com/sdk>.

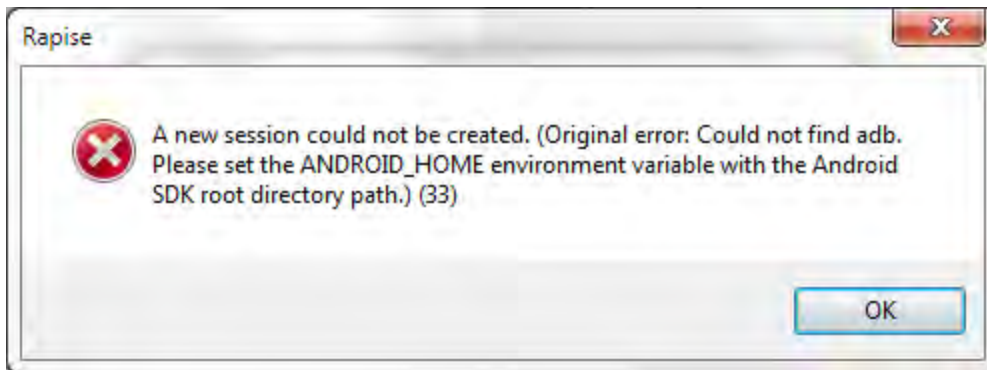
Once it has installed, you will use the **Android SDK Manager** to download and install the necessary packages:



If you are going to be testing a physical Android device, you will need to do the following:

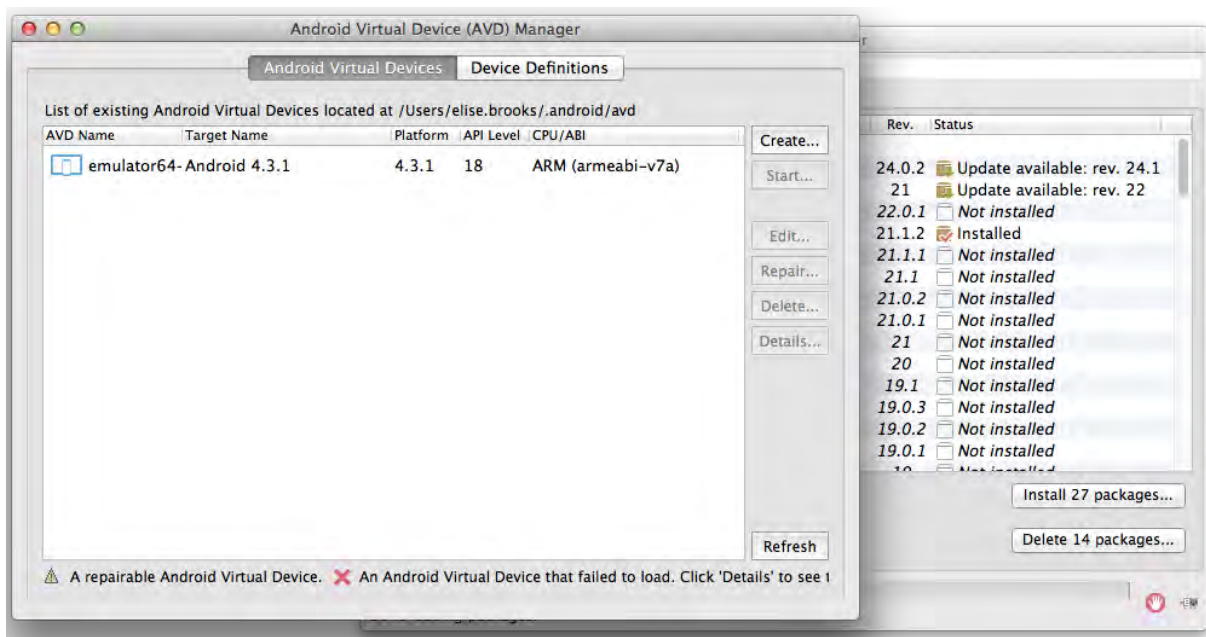
1. Make sure you have **enabled Developer mode** in the Android device itself:
 - a. Open Settings> About on your Android phone or tablet.
 - b. If you have a Samsung Galaxy S4, Note 8.0, Tab 3 or any other Galaxy device with Android 4.2, open Settings> More tab> About and tap it.
 - c. If you have Galaxy Note 3 or any Galaxy device with Android 4.3, go to Galaxy Note 3 from Settings> General> About and tap the Build version 7 times.
 - d. Now scroll to Build number and tap it 7 times.
 - e. After tapping the Build Number 7 times, you will see a message "You are now a developer!" If you have a Galaxy S4 or any other Samsung Galaxy device with Android 4.2, the message reads as follows- "Developer mode has been enabled".

Now when you try and [connect to the device](#) using the [Rapise mobile spy](#), you may get the following message:



This means you need to use a MacOS X Shell window to add a **environment variable** called **ANDROID_HOME** and set it to the path of the installed Android SDK (typically something like `/Users/my.user/Downloads/android-sdk-macosx`).

If you want to test using the Android simulator, make sure you have installed it using the SDK manager. Then you can launch (from the main menu of the Android SDK Manager) the **Android Virtual Device (AVD) Manager**:

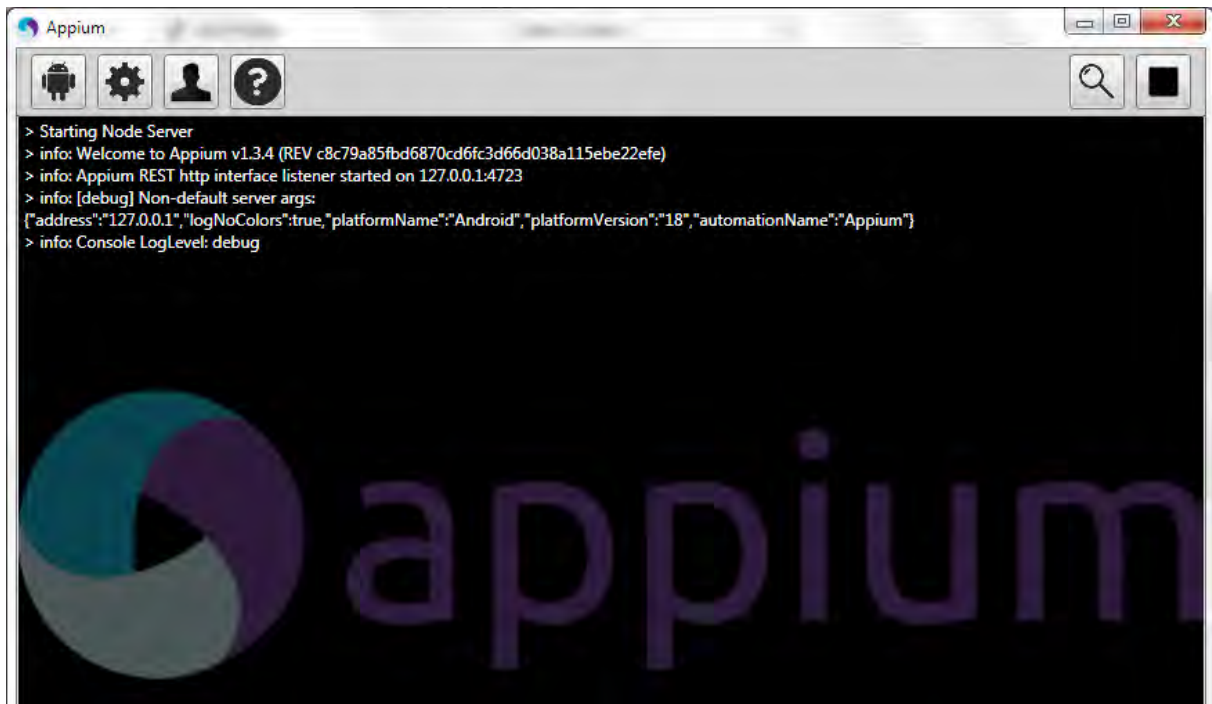


In this case you can just create the Android Virtual Device, Start it and then connect to it using Rapise.

You are now ready to start [mobile testing of your Android device](#).

3) Using a PC to Host Android Devices

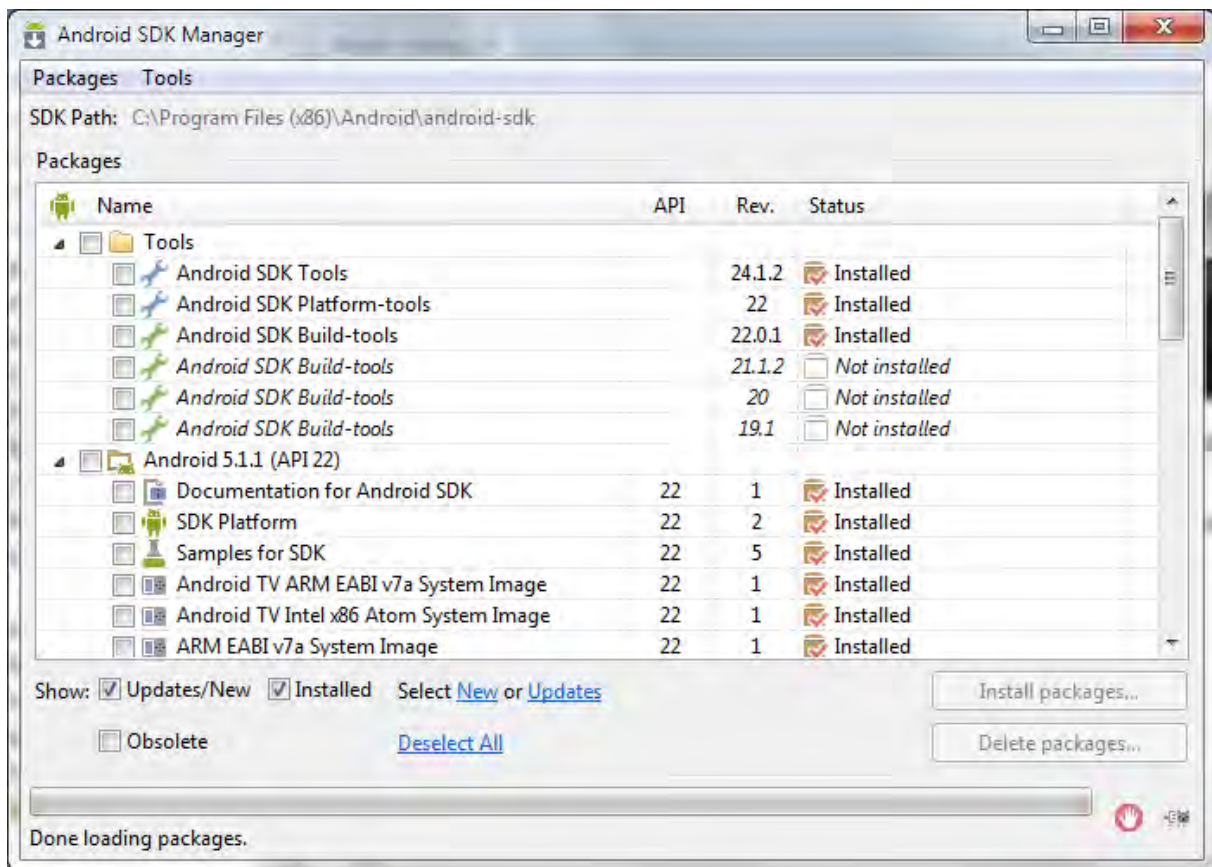
The first thing you need to do is go to the **Appium** website (<http://appium.io>) and install the latest version of Appium. Once it is installed, you can start it up and click the Play button to start the Appium server:



Once that is installed, you will then need to download and install the latest version of Java SE Development Kit (JDK) from the Oracle website (<http://www.oracle.com/technetwork/java/javase/downloads/index.html>). Once that has been installed, make sure that the JAVA_HOME environment variable has been set.

Once that is installed, you will then need to install the Android SDK (you may already have it installed if you are doing Android development). You can download it from: <https://developer.android.com/sdk>.

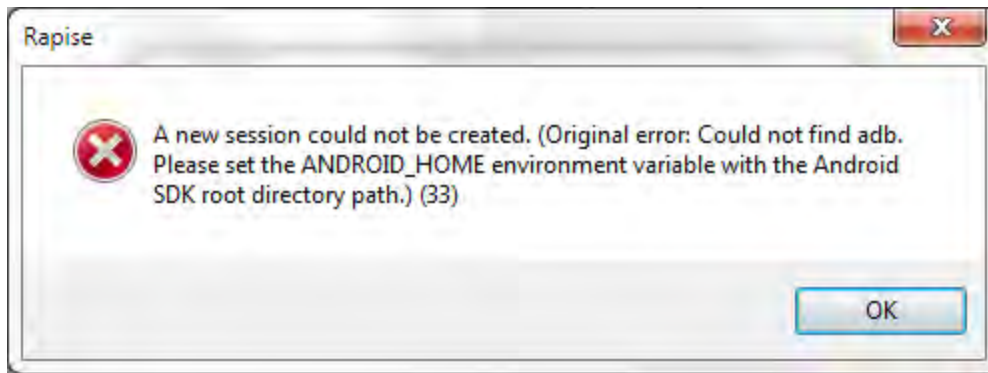
Once it has installed, you will use the **Android SDK Manager** to download and install the necessary packages:



If you are going to be testing a physical Android device, you will need to do the following:

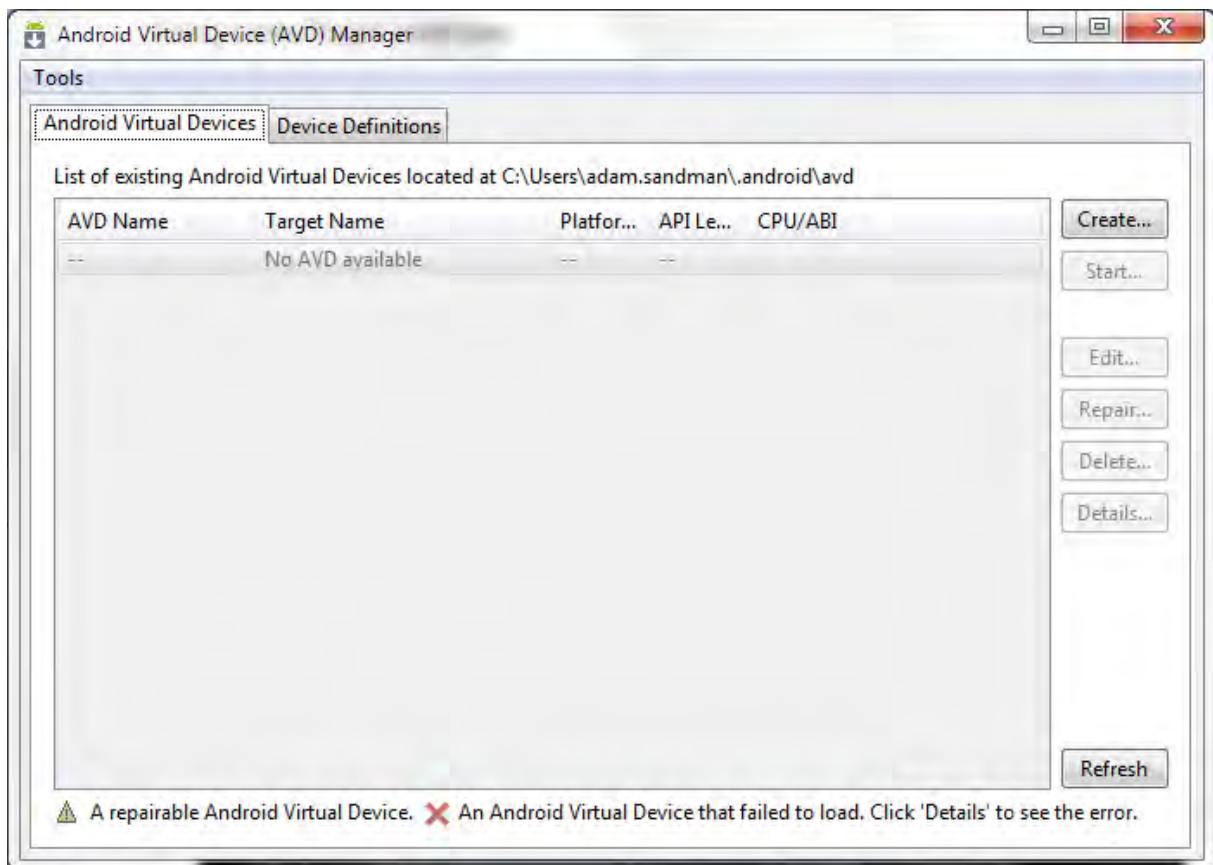
2. Locate the **Google Android USB drivers** that came with the Android SDK (`C:\Program Files (x86)\Android\android-sdk\extras\google\usb_driver`) and when you connect your Android device to the PC, choose to install these drivers rather than the standard ones.
3. Make sure you have **enabled Developer mode** in the Android device itself:
 - a. Open Settings> About on your Android phone or tablet.
 - b. If you have a Samsung Galaxy S4, Note 8.0, Tab 3 or any other Galaxy device with Android 4.2, open Settings> More tab> About and tap it.
 - c. If you have Galaxy Note 3 or any Galaxy device with Android 4.3, go to Galaxy Note 3 from Settings> General> About and tap the Build version 7 times.
 - d. Now scroll to Build number and tap it 7 times.
 - e. After tapping the Build Number 7 times, you will see a message "You are now a developer!" If you have a Galaxy S4 or any other Samsung Galaxy device with Android 4.2, the message reads as follows- "Developer mode has been enabled".

Now when you try and [connect to the device](#) using the [Rapise mobile spy](#), you may get the following message:



This means you need to use the Windows control panel to add a **System environment variable** called **ANDROID_HOME** and set it to the path of the installed Android SDK (typically `C:\Program Files (x86)\Android\android-sdk`).

If you want to test using the Android simulator, make sure you have installed it using the SDK manager. Then you can launch (from the Windows Start Menu) the **Android Virtual Device (AVD) Manager**:



In this case you can just create the Android Virtual Device, Start it and then connect to it using Rapise.

You are now ready to start [mobile testing of your Android device](#).

See Also

- [Mobile Testing](#), for an overview of mobile testing with sub-sections on testing using [iOS](#) and [Android](#).
- [Mobile Testing Tutorial](#) - for a simple introduction to mobile device testing.
- [Mobile Settings Dialog](#) - for information on setting up the different **mobile profiles** for the mobile devices you will be testing
- [Mobile Object Spy](#) - for information on how Rapise connects to the device and lets you view the objects in the application being tested
- [Mobile Testing: iOS Setup](#) - the steps for setting up Xcode and the iOS SDK for testing iOS devices

2.7.5.1 Mobile Testing: iOS Setup

Purpose

This section describes how to setup Apple Xcode for developing and deploying iOS applications to a real or simulated device so that they can be tested by Rapise.

Make sure you have already installed XCode and the iOS SDK onto your Apple Mac as described in the [Mobile Testing parent topic](#).

This topic describes the process for building and deploying the sample AUTiOS application that comes with Rapise, however it can be used equally well with your in-house application.

1) Get the AUTiOS Source Code

When you install Rapise, the sample AUT for iOS (AUTiOS) is placed in the following folder on your PC:

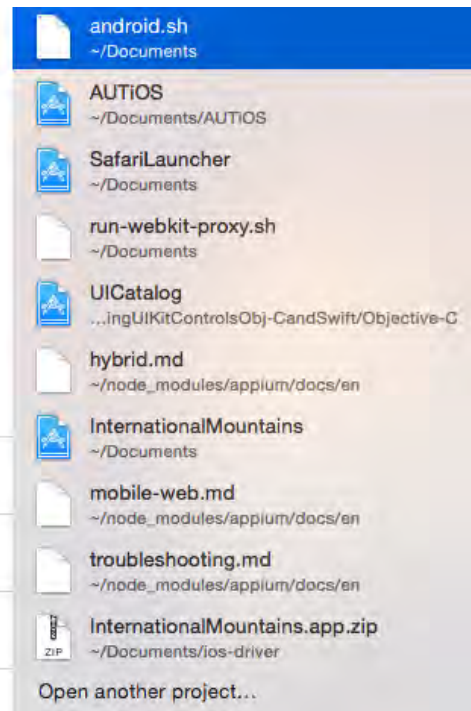
```
C:\Users\Public\Documents\Rapise\Samples\UsingMobile\AUT\AUTiOS
```

You will need to **copy this folder across onto your Mac** so that you can open it in Xcode.

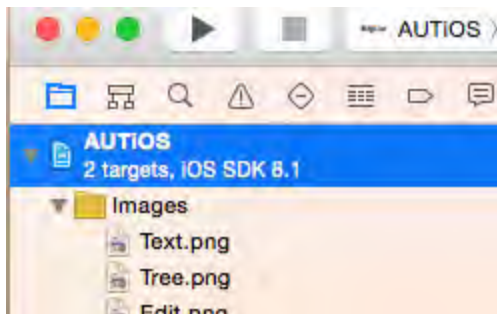
Once you have done that, launch Xcode on the Mac:



-  **Get started with a playground**
Explore new ideas quickly and easily.
-  **Create a new Xcode project**
Start building a new iPhone, iPad or Mac application.
-  **Check out an existing project**
Start working on something from an SCM repository.



Open the AUTIOS project and select the root node:



Before you can actually build and deploy this project, you will need to register for an **Apple ID** and setup an Apple Developer account. You should check with your company to see if they have already joined the **Apple iOS Developer Program**, if not, you will need to join yourself and become a member. You can learn more about this at the Apple developer website: <https://developer.apple.com>.

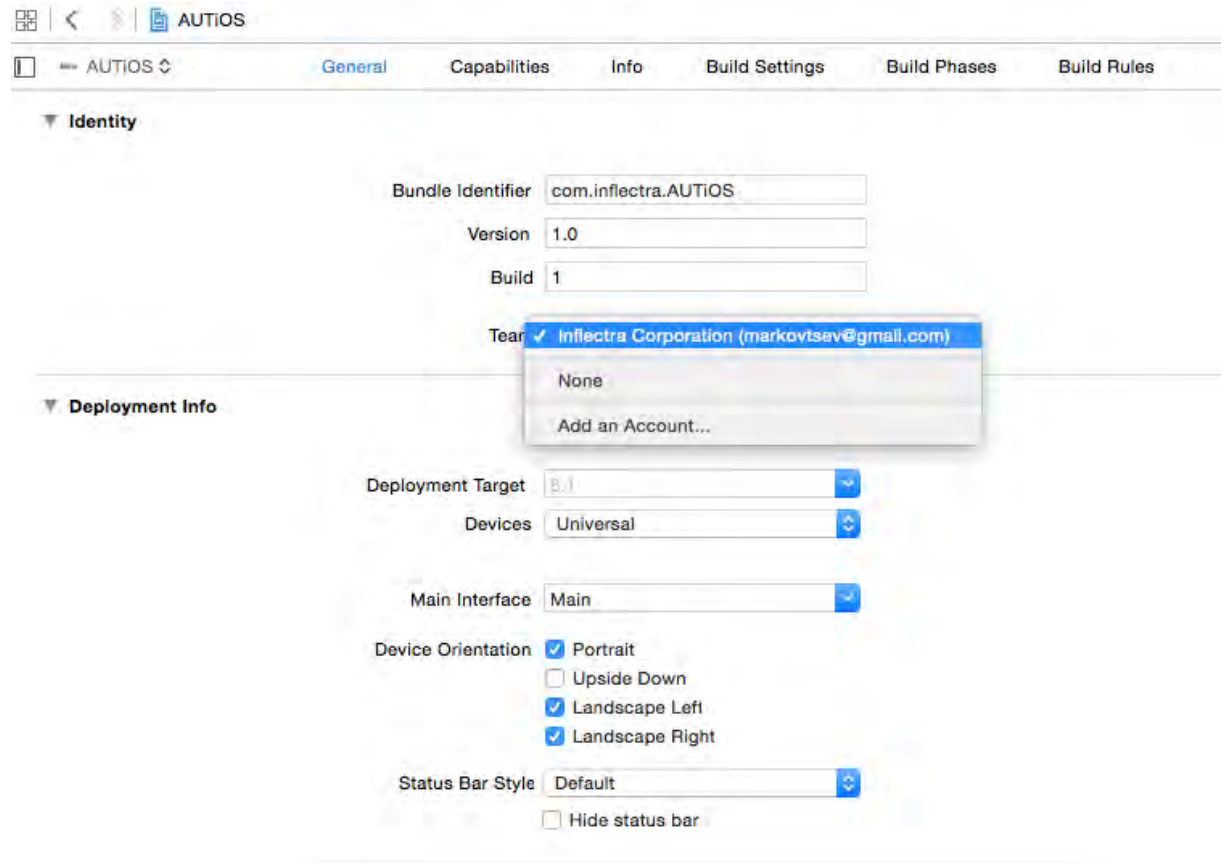
2) Join Your iOS Development Team

Assuming that either you or your company already has signed up for the iOS Developer Program, you will need to ask the administrator of your account (it might be you) to send an invitation to you if you are not already a member. The link for accepting such an invitation is typically:

<https://developer.apple.com/programs/start/jointeam/index.php?success=%2Fios%2Finvitation%2Faccept.action>

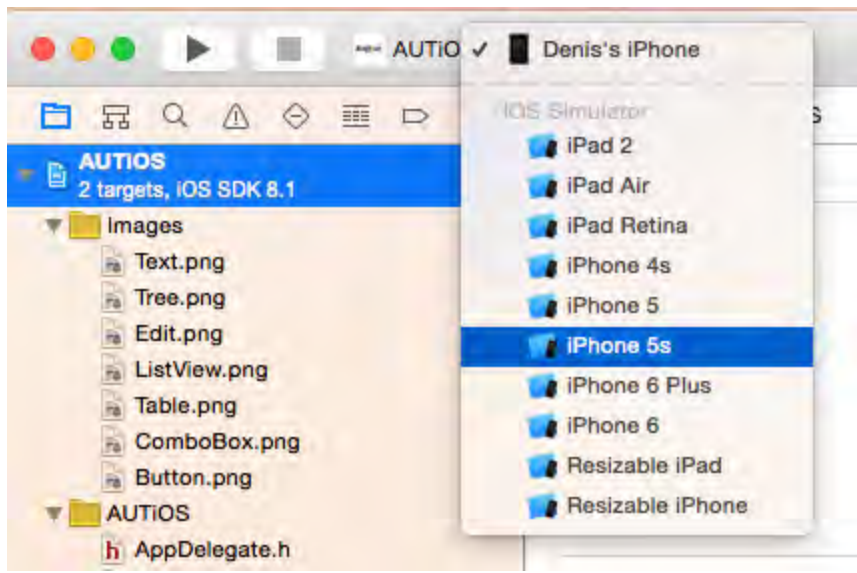
Click on this link and accept the invitation.

Meanwhile, back in XCode Use the 'Add an Account...' to login with your **Apple ID**:

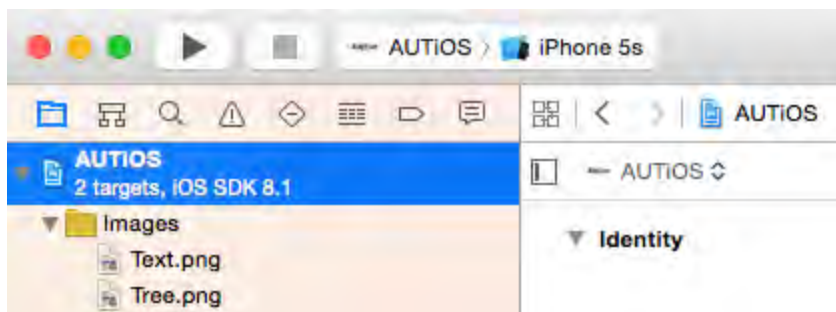


3) Building and Deploying on a Simulated Device

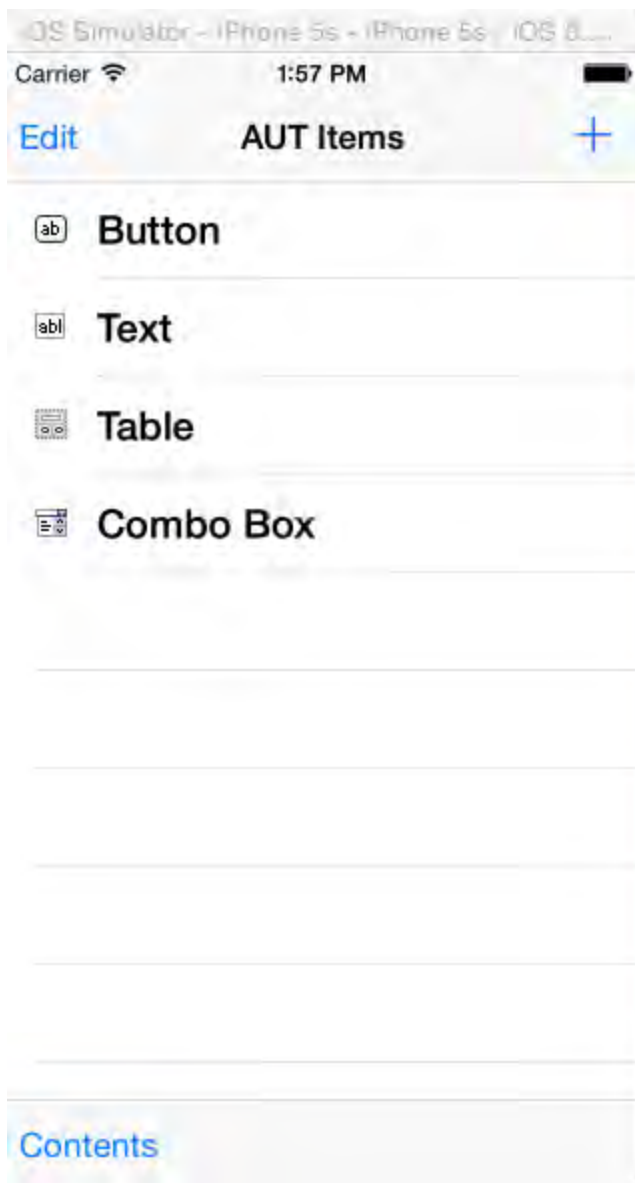
Now that you have signed into Xcode using your developer account, you can select a simulated device and run the project on it:



Once you have selected the simulated iOS device you want to use, click the **Product > Build** option to build the app for the targeted device. You can use the **Run** option to make sure that the app actually launches on this device before testing it with Rapise.



Assuming that this is successful, you will see the AUTIOS running in the iOS Simulator:



If you are only going to use Simulated devices (not recommended) then you can skip the next section and just continue with setting up **Appium**, as described in the main [Mobile Testing topic](#).

4) Building and Deploying on a Physical Device

Login with your **Apple ID** to <http://developer.apple.com>

Choose Certificates, Identifiers & Profiles:

The screenshot shows the Apple Developer portal interface. At the top, there is a navigation bar with the Apple logo and the word "Developer". Below this, there are tabs for "People", "Programs & Add-ons", and "Your Account". The organization name "Inflectra Corporation" is displayed below the navigation bar. The main content area is titled "Developer Program Resources" and is divided into two sections: "Technical Resources and Tools" and "App Store Distribution".

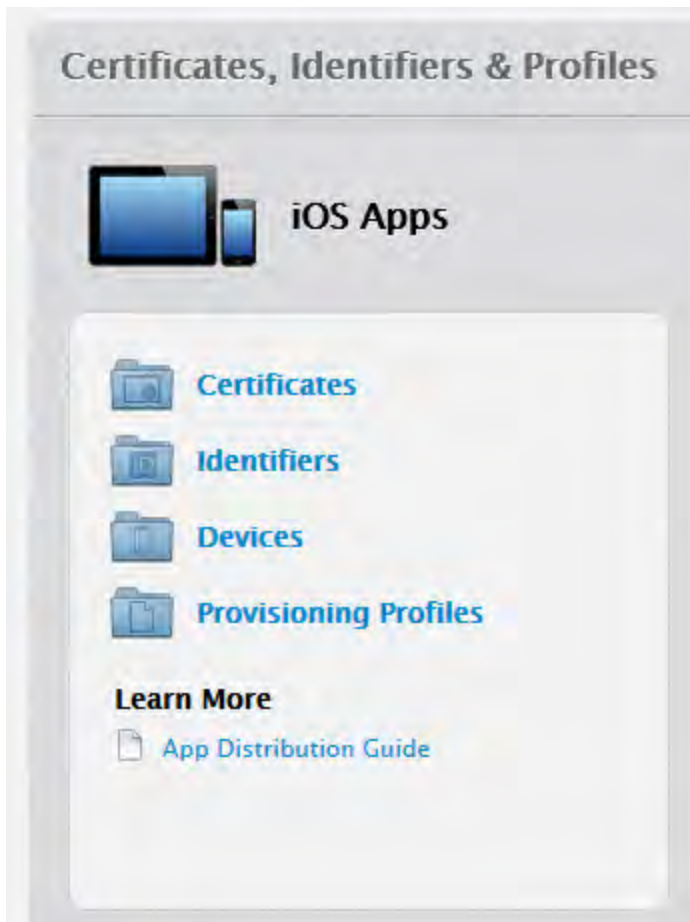
Technical Resources and Tools

- Dev Centers**: Quickly access a range of technical resources. [iOS](#) | [Mac](#) | [Safari](#)
- Certificates, Identifiers & Profiles**: Manage your certificates, App IDs, devices, and provisioning profiles.

App Store Distribution

- App Store Resource Center**: Learn about how to prepare for App Store Submission.
- iTunes Connect**: Submit and manage your apps on the App Store.

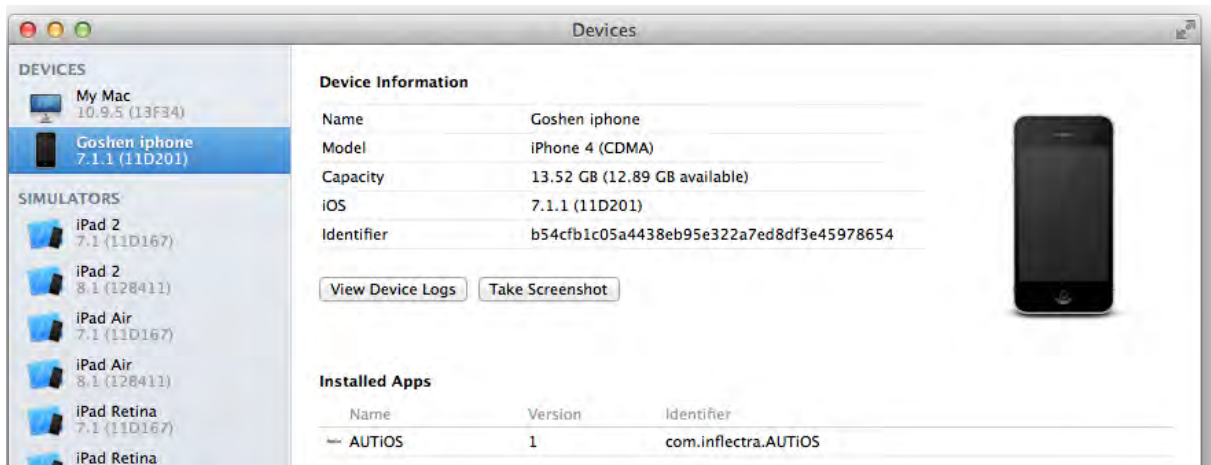
Select Devices:



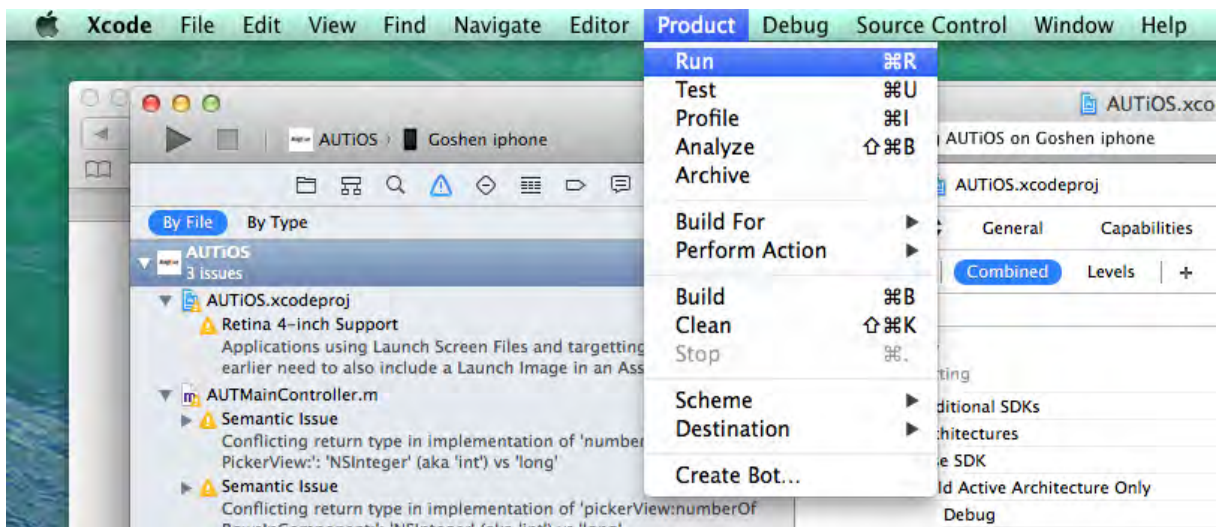
Add your device's UDID to the list of registered iOS devices in the developer account:



You can find out the UDID by connecting it to the Mac and viewing the device inside Xcode.



Then, back in Xcode choose your physical device, and use the **Product > Build and Run** option to test that the app launches on the device:



Example

You can find the iOS sample tests and sample Application (called AUTIOS) in your Rapise installation at the following locations:

Sample iOS Tests:

- C:\Users\Public\Documents\Rapise\Samples\UsingMobile\AppiOS (testing a native App)
- C:\Users\Public\Documents\Rapise\Samples\UsingMobile\WebiOS (testing a web app)

Sample Application (AUTIOS)

- C:\Users\Public\Documents\Rapise\Samples\UsingMobile\AUT\AUTIOS

See Also

- [Mobile Testing](#), for an overview of mobile testing with sub-sections on testing using [iOS](#) and [Android](#).
- [Mobile Testing Tutorial](#) - for a simple introduction to mobile device testing.

- [Mobile Settings Dialog](#) - for information on setting up the different **mobile profiles** for the mobile devices you will be testing
- [Mobile Object Spy](#) - for information on how Rapise connects to the device and lets you view the objects in the application being tested

2.7.6 Web Testing

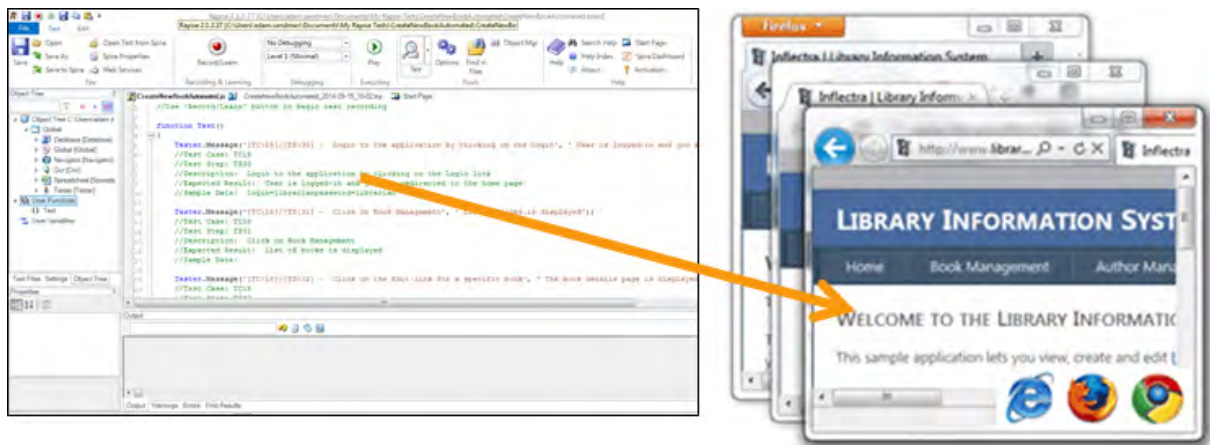
Purpose

Rapise lets you record and play automated tests against web applications on a variety of web browsers including Firefox, Internet Explorer and Google Chrome. Rapise lets you record or create your tests against one browser and then play the same test back against all of the other browsers.

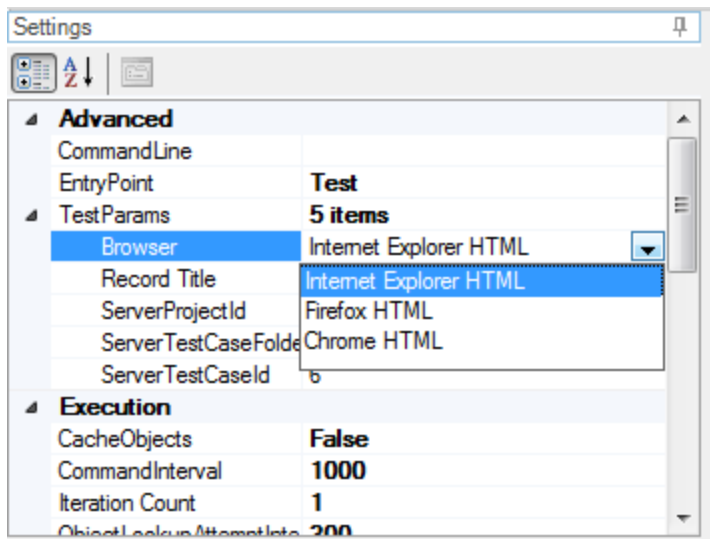
Rapise provides comprehensive support for testing Web applications. Rapise supports cross-browser testing. It uses the web browser Document Object Model (DOM) to interact with the current web page. The various web browsers on the market have various differences in DOM implementation. In many cases these differences are not significant. But sometimes they require special handling. Rapise tries to overcome the differences and make the recorded scripts as universal as possible:

Cross Browser Testing

When developing and testing a web application you naturally need to test it with different web browsers and of course (based on bitter experience) multiple version of each web browser. With Rapise you can record a test script using one browser and then play it back using Mozilla Firefox, Google Chrome or Microsoft Internet Explorer:



With Rapise, you can run your recording in a different browser than the one in which it was recorded simply by changing the specified browser in the playback settings:



In addition, it is possible to have more control over the cross browser execution using the available APIs and configuration variables. You can also run the recording in multiple browsers in succession using either a Rapise [sub-test](#) or simply executing the test from our [SpiraTest test management](#) system and passing through different parameter values.

DOM API

In addition to the usual [recording](#), [learning](#) and [playback](#) that is similar to testing other technologies (desktop, mobile, etc.) there are some unique functions that are available on all recorded web objects:

Upon learning a web element in Rapise, you get an object of type **HTMLObject**. Each **HTMLObject** provides set of functions to facilitate the cross-browser access to web element parents and children.

DOM Function	Description
DoDOMChildAt	Returns n-th child (zero-based).
DoDOMChildrenCount	Returns number of children elements for this one.
DoDOMFindParentWithAttribute	Returns parent element (if any) with given attribute matching given string or 'regex'
DoDOMGetAttribute	Returns specified attribute.
DoDOMNextSibling	Returns next sibling element for this one.
DoDOMParent	Returns parent element having this element.
DoDOMPrevSibling	Return previous sibling element for this one.
DoDOMRoot	Returns Root element having this element.

See Also

- [Web Spy](#) - How to use the Web Spy to inspect web pages and dynamically query for HTML elements
- [XPath](#) - An explanation of the XPath language, how it can be used to dynamically query objects in web application and some examples
- [CSS](#) - An explanation of how to use CSS selectors (common in frameworks such as jQuery) to dynamically query objects in web applications
- [Web Testing Tutorial](#) - a basic example of how to record, learn and playback tests using a our sample web application

2.7.6.1 XPath

Purpose

When testing web applications you will often need to use XPath to query the browser DOM for elements based on the scenario under test. This section explains how you can use XPath queries with Rapise to make your browser testing more flexible and adaptive to changes on the screen.

XPath Fundamentals

XPath uses path expressions to select nodes in an XML document such as HTML. The node is selected by following a path or steps. The most useful path expressions are listed below:

Expression	Description
<i>nodename</i>	Selects all child nodes of the named node
/	Selects from the root node
//	Selects nodes in the document from the current node that match the selection no matter where they are
.	Selects the current node
..	Selects the parent of the current node
@	Selects attributes

In the table below we have listed some path expressions and the result of the expressions:

Path Expression	Result
bookstore	Selects all the child nodes of the bookstore element
/bookstore	Selects the root element bookstore Note: If the path starts with a slash (/) it always represents an absolute path to an element!

Path Expression	Result
bookstore/book	Selects all book elements that are children of bookstore
//book	Selects all book elements no matter where they are in the document
bookstore//book	Selects all book elements that are descendant of the bookstore element, no matter where they are under the bookstore element
//@lang	Selects all attributes that are named lang
//book[@lang='English']	Selects all book elements that have a lang attribute equal to 'English'
//book[text()='Oliver Twist']	Selects all book elements that have the text 'Oliver Twist' as their inner content (i.e. <book>Oliver Twist</book>)

Rapise XPath Extensions

Web pages sometimes use HTML frames. The XPath works inside the frame contents. Rapise has a special syntax (that is not part of standard XPath) to combine multiple XPath statements into a single line:

```
//frame[@name='main']@@@//a[3]
```

The special statement:

```
@@@
```

Is used as a separator for XPath statements pointing to constituent frames. The top-level frame is found by name 'main'

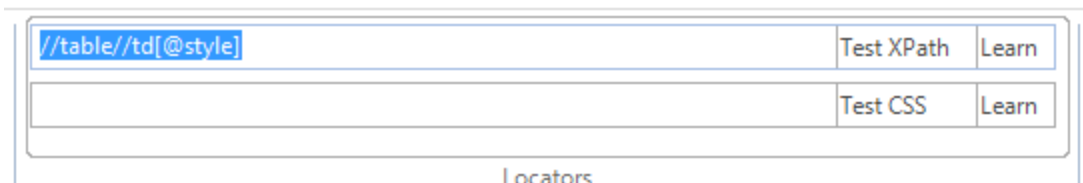
```
//frame[@name='main']
```

Then the frame's contents are searched for the third <a> element (i.e. 3rd link on a page).

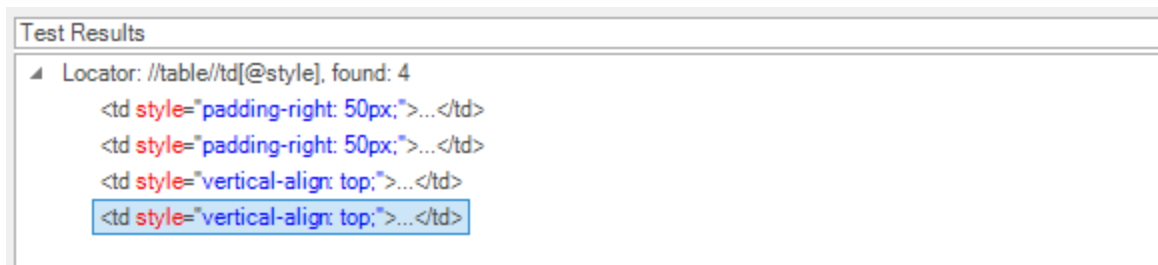
There are several different ways to use XPath queries in Rapise

Using Web Spy

To most easily use XPath queries in Rapise, we recommend using the Web Spy tool:



If you enter in the XPath query at the top, when you click **Test XPath** it will display all of the DOM elements that match the query:



You can now refine the query to only find the items you want to test.

Learning Objects

When you have created the query in the Web Spy that returns the HTML elements that you were expecting, you can click on the **Learn** button to learn that object. What this will do is create a new Rapise object in the [Object Tree](#) that maps to this specific XPath. That means that the "object" in Rapise is effectively a pointer to this specific XPath query.

For example, if you want to find a specific book in a grid of books, you can search by its name using XPath and the `text()` XPath expression described above, then learn this object as "Oliver_Twist" so that you can access it in your code as `SeS("Oliver_Twist")`. Every time you call a function on "Oliver_Twist", Rapise will use the learned XPath expression and use that to evaluate which HTML element in the web page to access.

Dynamic Queries

In addition to learning objects based on specific XPath, there are a set of general functions that can be used to query for objects in the web page:

```
SeS('Book_Management').DoDOMQueryXPath('tr/td[text()="Oliver Twist"]');
```

Will dynamically query for any HTML element that is a child of the learned "Book Management" object that matches the XPath. In this example it will look for any table cell in a table row that has the content of the book name.

2.7.6.2 CSS

Purpose

When testing web applications you will often want to use Cascading Style Sheets (CSS) selectors to query the browser DOM for elements based on the scenario under test. This section explains how you can use CSS selectors with Rapise to make your browser testing more flexible and adaptive to changes on the screen.

CSS is an alternative to [XPath](#) that is often better at selecting multiple elements from across different parts of the DOM Tree, unlike XPath which is strictly hierarchical. However since CSS is not always able to uniquely locate an object, when Rapise is used in recording mode, it will learn objects automatically using XPath.

CSS Fundamentals

In CSS, selectors are patterns used to select the element(s) you want to style. Here are the different operators that you can use in CSS selectors:

Selector	Example	Example description	CSS
<u>.class</u>	.intro	Selects all elements with class="intro"	1
<u>#id</u>	#firstname	Selects the element with id="firstname"	1
<u>*</u>	*	Selects all elements	2
<u>element</u>	p	Selects all <p> elements	1
<u>element,element</u>	div, p	Selects all <div> elements and all <p> elements	1
<u>element element</u>	div p	Selects all <p> elements inside <div> elements	1
<u>element>element</u>	div > p	Selects all <p> elements where the parent is a <div> element	2
<u>element+element</u>	div + p	Selects all <p> elements that are placed immediately after <div> elements	2
<u>element1 ~element2</u>	p ~ ul	Selects every element that are preceded by a <p> element	3
<u>[attribute]</u>	[target]	Selects all elements with a target attribute	2
<u>[attribute=value]</u>	[target=_blank]	Selects all elements with target="_blank"	2
<u>[attribute~=value]</u>	[title~=flower]	Selects all elements with a title attribute containing the word "flower"	2
<u>[attribute =value]</u>	[lang=en]	Selects all elements with a lang attribute value starting with "en"	2
<u>[attribute^=value]</u>	a[href^="https"]	Selects every <a> element whose href attribute value begins with "https"	3
<u>[attribute\$=value]</u>	a[href\$=".pdf"]	Selects every <a> element whose href attribute value ends with ".pdf"	3
<u>[attribute*=value]</u>	a[href*="w3school s"]	Selects every <a> element whose href attribute value contains the substring "w3schools"	3
<u>:active</u>	a:active	Selects the active link	1
<u>::after</u>	p::after	Insert content after every <p> element	2
<u>::before</u>	p::before	Insert content before the content of every <p> element	2
<u>:checked</u>	input:checked	Selects every checked <input> element	3
<u>:disabled</u>	input:disabled	Selects every disabled <input> element	3
<u>:empty</u>	p:empty	Selects every <p> element that has no children (including text nodes)	3
<u>:enabled</u>	input:enabled	Selects every enabled <input> element	3
<u>:first-child</u>	p:first-child	Selects every <p> element that is the first child of its parent	2
<u>::first-letter</u>	p::first-letter	Selects the first letter of every <p> element	1

Selector	Example	Example description	CSS
::first-line	p::first-line	Selects the first line of every <p> element	1
:first-of-type	p:first-of-type	Selects every <p> element that is the first <p> element of its parent	3
:focus	input:focus	Selects the input element which has focus	2
:hover	a:hover	Selects links on mouse over	1
:in-range	input:in-range	Selects input elements with a value within a specified range	3
:invalid	input:invalid	Selects all input elements with an invalid value	3
:lang(<i>language</i>)	p:lang(it)	Selects every <p> element with a lang attribute equal to "it" (Italian)	2
:last-child	p:last-child	Selects every <p> element that is the last child of its parent	3
:last-of-type	p:last-of-type	Selects every <p> element that is the last <p> element of its parent	3
:link	a:link	Selects all unvisited links	1
:not(<i>selector</i>)	:not(p)	Selects every element that is not a <p> element	3
:nth-child(<i>n</i>)	p:nth-child(2)	Selects every <p> element that is the second child of its parent	3
:nth-last-child(<i>n</i>)	p:nth-last-child(2)	Selects every <p> element that is the second child of its parent, counting from the last child	3
:nth-last-of-type(<i>n</i>)	p:nth-last-of-type(2)	Selects every <p> element that is the second <p> element of its parent, counting from the last child	3
:nth-of-type(<i>n</i>)	p:nth-of-type(2)	Selects every <p> element that is the second <p> element of its parent	3
:only-of-type	p:only-of-type	Selects every <p> element that is the only <p> element of its parent	3
:only-child	p:only-child	Selects every <p> element that is the only child of its parent	3
:optional	input:optional	Selects input elements with no "required" attribute	3
:out-of-range	input:out-of-range	Selects input elements with a value outside a specified range	3
:read-only	input:read-only	Selects input elements with the "readonly" attribute specified	3
:read-write	input:read-write	Selects input elements with the "readonly" attribute NOT specified	3
:required	input:required	Selects input elements with the "required" attribute specified	3
:root	:root	Selects the document's root element	3
::selection	::selection	Selects the portion of an element that is selected by a user	
:target	#news:target	Selects the current active #news element (clicked	3

Selector	Example	Example description	CSS
		on a URL containing that anchor name)	
.valid	input:valid	Selects all input elements with a valid value	3
.visited	a:visited	Selects all visited links	1

One limitation (as compared to XPath) is that there is not a way to select an element based on its contents. So it would not be possible to locate a cell in a grid (for example) based on the contents of the cell. For that you would need to use XPath.

Rapise CSS Extensions

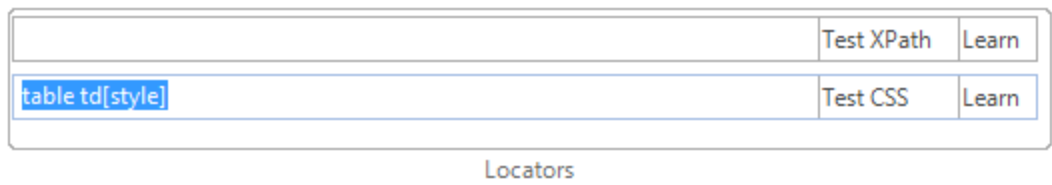
Since Rapise uses XPath as its primary means of locating an HTML element, when you **Learn** an object using CSS, Rapise will prefix the Locator (listed under the XPath property for that object in the [Object Tree](#)) with `css=` to let Rapise know that the locator is actually using a CSS selector.

```
css=html > body > form#ct101 > div:nth-of-type(3) > div:first-of-type > div:first-of-t
```

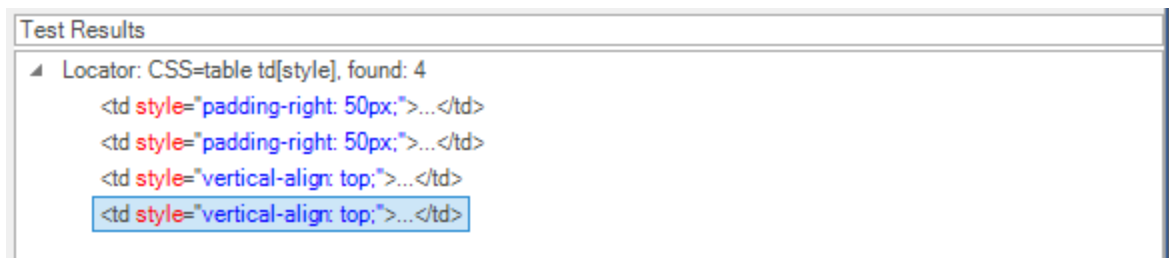
There are several different ways to use CSS selectors in Rapise

Using Web Spy

To most easily use CSS selectors in Rapise, we recommend using the Web Spy tool:



If you enter in the CSS selector at the top, when you click **Test CSS** it will display all of the DOM elements that match the selector:



You can now refine the query to only find the items you want to test.

Learning Objects

When you have created the query in the Web Spy that returns the HTML elements that you were expecting, you can click on the **Learn** button to learn that object. What this will do is create a new Rapise object in the [Object Tree](#) that maps to this specific CSS. That means that the "object" in Rapise is effectively a pointer to this specific CSS selector.

For example, if you want to find a specific book in a grid of books by its CSS class, style, ID or other attribute, you can search using the appropriate CSS selector, then learn this object as "Book_1" so that you can access it in your code as `SeS (" Book_1 ")`. Every time you call a function on "Book_1", Rapise will use the learned CSS selector and use that to evaluate which HTML element in the web page to access.

Dynamic Queries

In addition to learning objects based on specific CSS selector, there are a set of general functions that can be used to query for objects in the web page:

```
SeS('Book_Management').DoDOMQueryCss('tr td[data=book1]');
```

Will dynamically query for any HTML element that is a child of the learned "Book Management" object that matches the CSS selector. In this example it will look for any table cell in a table row that has the attribute data="book1".

2.8 Extensibility

The **Extensibility** section is for experienced Rapise users who want to extend capabilities of the tool.

2.8.1 Tutorial: Custom Library

In this section, you will learn how to create a **Custom Library** and add support for a third-party GUI control to Rapise. We will be using a demo application called **CustomControlApp**. Our Custom Library will be simple. It will allow to Record and Learn objects of **CustomListboxControl** type and also Playback actions for this type of objects. This tutorial is complemented by a ready test **CustomControlTest** which you'll be able to examine and run.

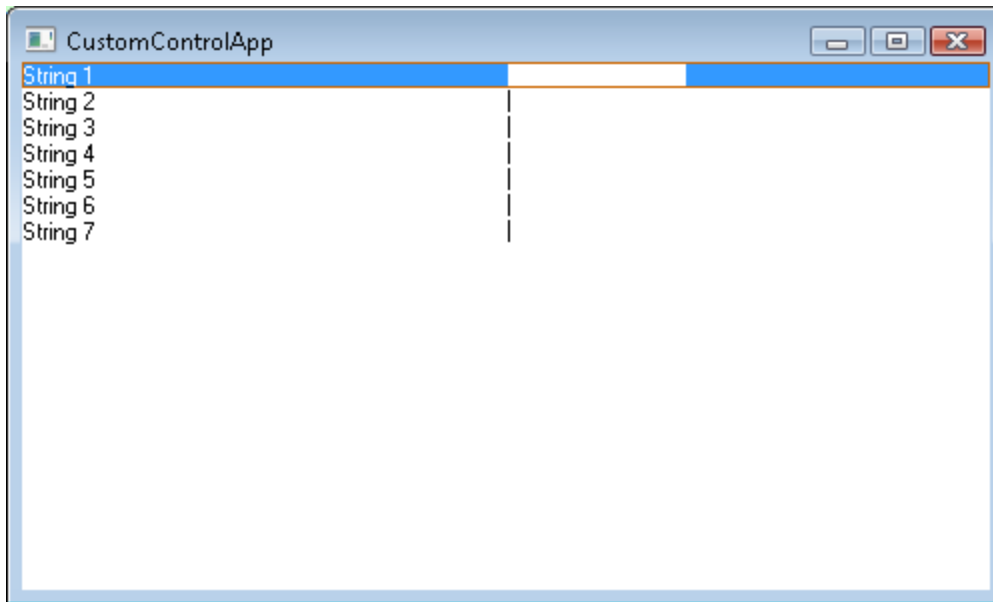
Tutorial Data

- CustomControlApp folder: C:\Program Files\Inflectra\Rapise\Samples\Extensibility\CustomLibrary\CustomControlApp. You may build this application yourself in Microsoft Visual Studio (C++) or use ready executable: <CustomControlApp folder>\Release\CustomControlApp.exe
- CustomControlTest folder: C:\Program Files\Inflectra\Rapise\Samples\Extensibility\CustomLibrary\CustomControlTest
- CustomLibrary file: C:\Program Files\Inflectra\Rapise\Samples\Extensibility\CustomLibrary\CustomLibrary.js

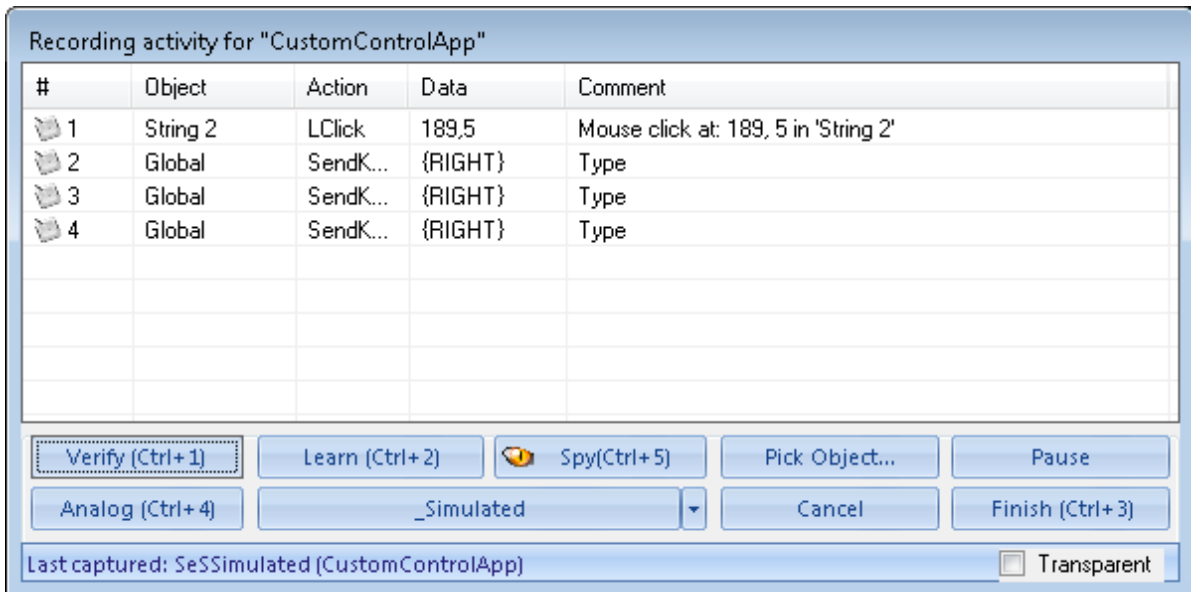
If you prefer active experimentation learning style you may first skip to subsection 9 and after playing with the ready test and library start reading from the beginning.

1. Application Under Test

CustomControlApp contains an object of type CustomListboxControl. The control is similar to a single-select listbox, but each line item has a corresponding **progress bar** indicator indicating a current value. Using the left/right cursor keys you can change the value of the currently focused item.



If you will try to record a test for CustomControlApp using just Generic library you'll see that CustomListboxControl is treated as Simulated Object and all interactions with it are recorded as mouse clicks and key presses. For some tests such functionality is sufficient, but if you want to be able to recognize CustomListboxControl as a list, get its items, select an item by name, set value for a particular item you need to create a Custom Library.



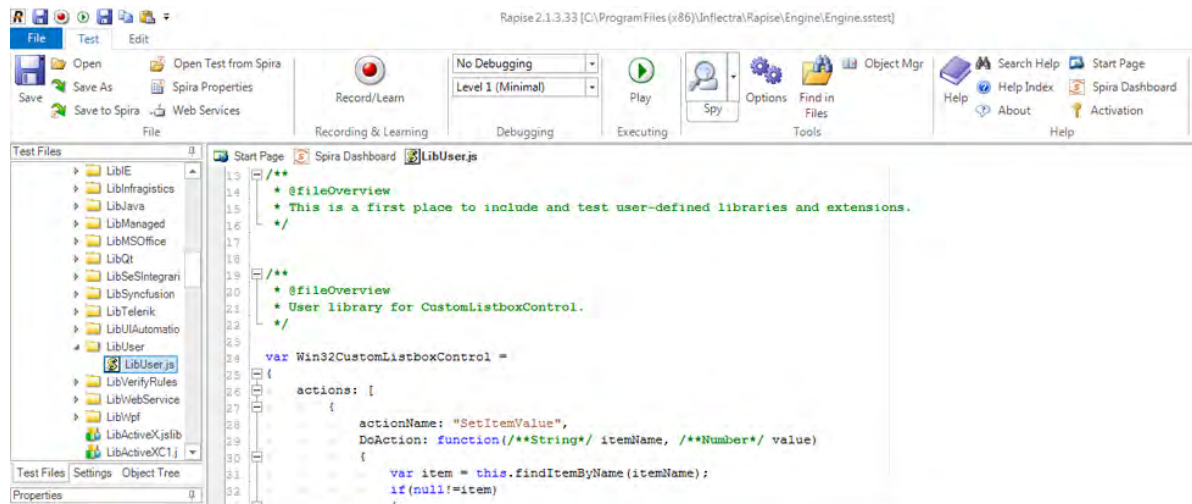
2. LibUser

A good place to start implementing a Custom Library is empty LibUser library included into Rapise. All Rapise libraries live in *C:\Program Files\Inflectra\Rapise\Engine\Lib* folder and LibUser is not an exception. LibUser library consists of two files:

1. *C:\Program Files\Inflectra\Rapise\Engine\Lib\LibUser.jslib* which is a library declaration file.
2. *C:\Program Files\Inflectra\Rapise\Engine\Lib\LibUser\LibUser.js* which is a library definition file.

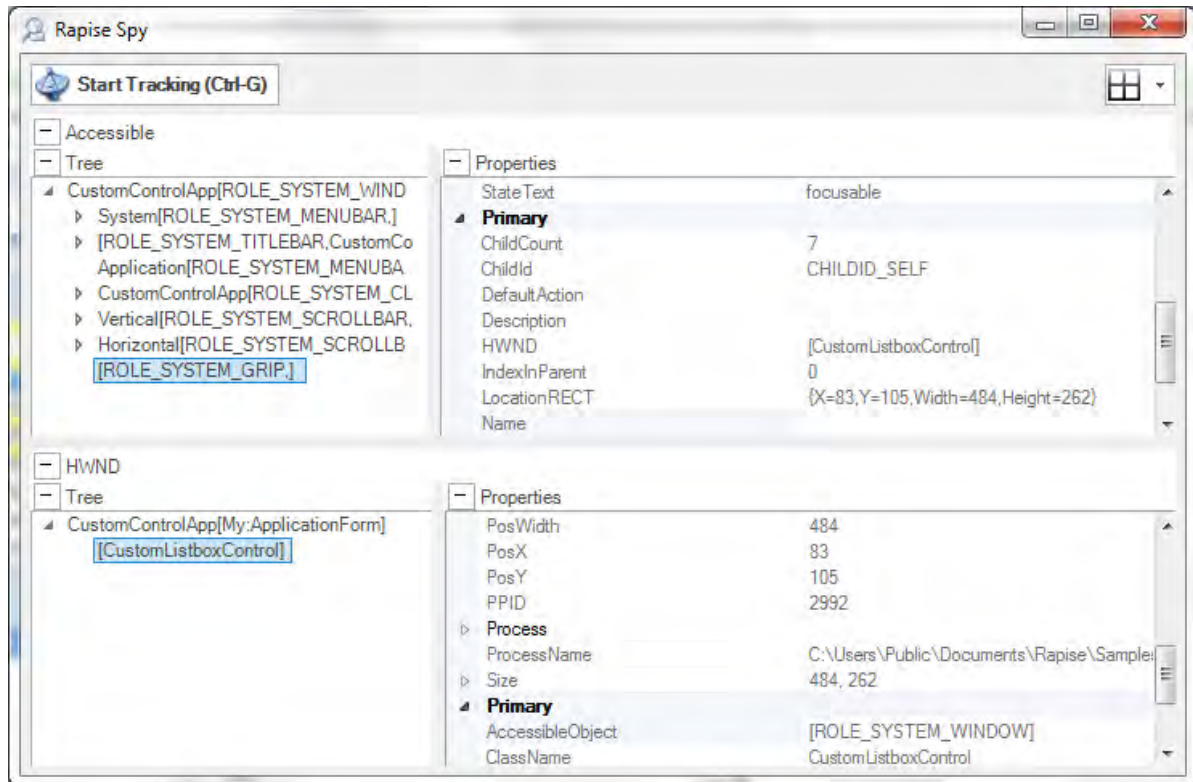
3. Open Engine.sstest

Open the [Engine.sstest](#) project in Rapise (it is usually located in the `C:\Program Files (x86)\Inflectra\Rapise\Engine` folder). Then find `LibUser.js` in the project tree and open it. You are about to start implementing a Custom Library to support `CustomListboxControl`.



4. Analyze CustomListboxControl in Spy

Launch `CustomControlApp` and open [Spy](#). Using the **Accessible** option in the Spy tool, spy on the `CustomListboxControl`. It is easy to see that `CustomListboxControl` has the following accessibility tree: `ROLE_SYSTEM_WINDOW` top node contains `ROLE_SYSTEM_LIST` child that in its turn may contain zero to many `ROLE_SYSTEM_SLIDER` nodes.



5. Create Matcher Rule for CustomListboxControl

With knowledge of CustomListboxControl accessibility tree we can create a **matcher rule** that will make CustomListboxControl recognizable by Rapise. Write the following code into LibUser.js:

```
new SeSMatcherRule(
{
  object_type: "CustomListboxControl",
  object_flavor: "List",
  behavior: [Win32ItemSelectable, Win32CustomListboxControl],
  role: "ROLE_SYSTEM_WINDOW",
  or_rules: [
    {
      role: "regex:ROLE_SYSTEM_LIST",
      save_to: "list",
      or_rules: [
        {
          role: "ROLE_SYSTEM_SLIDER",
          zero_to_many: true,
          save_to: "items"
        }
      ]
    }
  ]
});
```

Each matcher rule (instance of SeSMatcherRule) is a tree like structure that describes a particular GUI control type. Each node in this tree is a rule object that is defined by the following simplified grammar:

```
or_rules: (rule)+
```

```
and_rules: (rule)+
rule:
  role
  [save_to]
  [zero_to_many]
  [or_rules]
  [and_rules]
```

- **object_type**: the string that uniquely identifies this matcher rule and designates type of the control
- **object_flavor**: visual type of the control, it is used to show an appropriate icon in the [Object Tree](#) and to filter actions and properties in composite behavior patterns (like in Adobe Flex, see FlexActions.js)
- **behavior**: array of behavior patterns that define object actions, properties and events.
- **role**: accessibility role of the corresponding node in the accessibility tree of the control. The role equals to a Role of the accessible element as displayed in the Spy.
- **or_rules**: array of rules (defining child nodes) joined with logical OR. Any OR rule can be satisfied to consider child nodes matched.
- **and_rules**: array of rules (defining child nodes) joined with logical AND. All AND rules must be satisfied to consider child nodes matched.
- **save_to**: SeSObject created for accessibility tree node corresponding to this rule is assigned to the field with "save_to" name of the top level SeSObject. I.e. if rule has save_to: "items" element then you can access learned element using SeS('ObjID').items. In many cases such named fields are used in behavior patterns.
- **zero_to_many**: if this property is present in the rule and set to 'true' then it means that parent rule may contain from zero to many of child nodes that match this rule.

6. CustomListboxControl Behavior

After defining the matcher rule we can proceed to **behavior patterns**. Behavior patterns operate with **SeSObject** contents, so they should not be aware about accessibility tree of the underlying GUI control and thus the same behavior pattern can be assigned to different matcher rules. There are a plenty of behavior patterns defined in SeSBahavior.js. After looking at those patterns it is possible to notice that Win32ItemSelectable pattern is the one that perfectly suites for capturing selection accessibility events and for selecting list items. This pattern contains OnSelect event that is called during recording when an item is selected in list and DoSelectItem action used to select desired item during playback.

But using just Win32ItemSelectable behavior pattern is not sufficient. It does not support recording of progress bar value change events and it does not support setting progress bar value during playback. That is why we need to define new behavior pattern: Win32CustomListboxControl. Look at its code:

```
var Win32CustomListboxControl =
{
  actions: [
    {
      actionName: "SetItemValue",
      DoAction: function(**String*/ itemName, /**Number*/ value)
      {
        var item = this.findItemByName(itemName);
        if(null!=item)
        {
          item.getTopObject().instance.HWND.SetForegroundWindow();
          item.instance.Value = value;
          return true;
        }
      }
    }
  ]
}
```

```

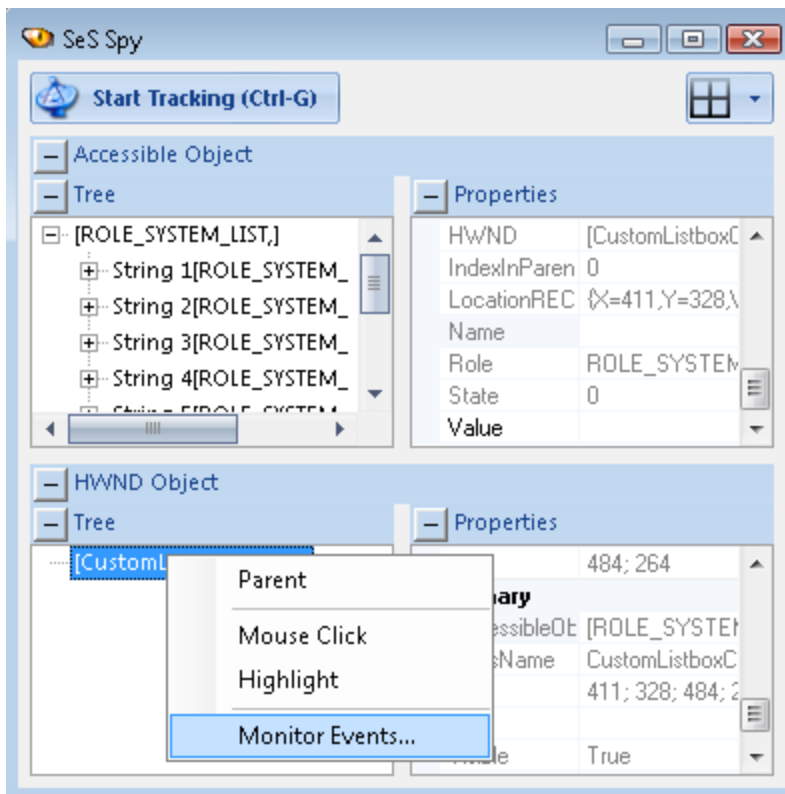
        }
        return false;
    }
},
{
    actionName: "GetItemValue",
    DoAction: function(**String*/ itemName)
    {
        var item = this.findItemByName(itemName);
        if(null!=item)
        {
            return item.instance.Value
        }
        return null;
    }
}
],
events:
{
    OnValueChanged: function(**SeSObject*/ param)
    {
        var itemName = param.name;
        if(!Log2("OnValueChanged:"+itemName));
        var item = this.findItemByName(itemName);
        if(null!=item)
        {
            var value = item.instance.Value;
            RegisterAction(this, param.name, "SetItemValue",
parseInt(value), "Set item:''+param.name+' to '+value+' in '"+this.name+'");
        }
        return;
    }
}
};

```

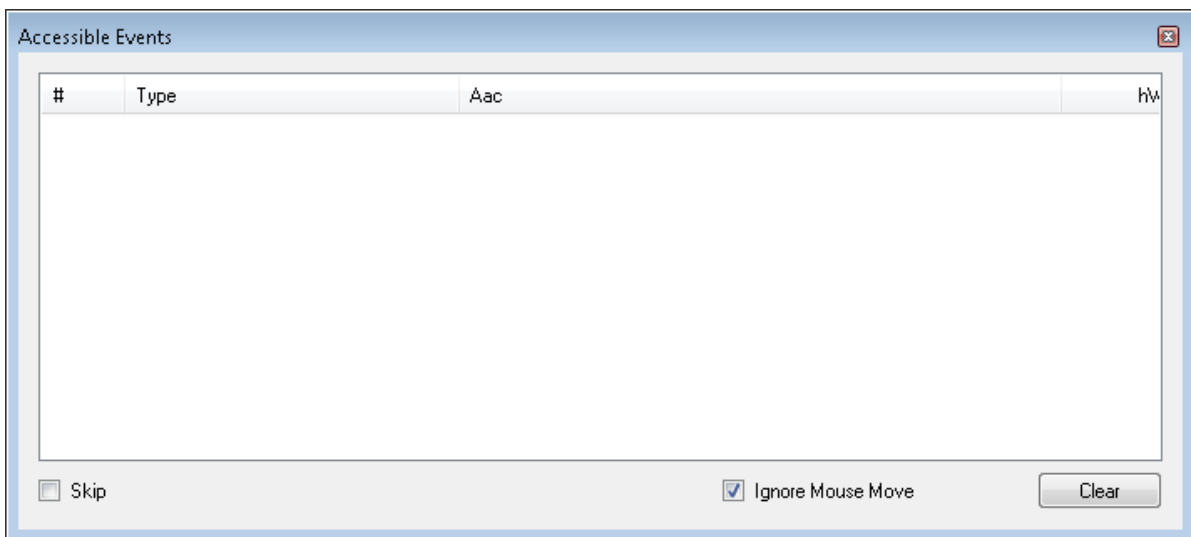
During recording process OnValueChanged function captures progress bar change events and calls RegisterAction function that adds SetItemValue action to the test.

7. CustomListboxControl Specific Accessibility Events

What accessibility events are fired when a user changes the progress bar value? You can use Spy to find out. Launch CustomControlApp and open Spy window. Spy on CustomListboxControl. Choose Monitor Events...



You will see Accessible Events dialog:



Select an item in CustomControlApp and advance its progress bar using right key. Accessible Events dialog will show you captured events:

#	Type	Aac	hWnd	
1	EVENT_SYSTEM_FOREGROUND	ROLE_SYSTEM_WINDOW/sizeable moveable focusable	0x00170a38	0x0
2	EVENT_OBJECT_FOCUS	ROLE_SYSTEM_CLIENT/focusable	0x00170a38	
3	EVENT_OBJECT_FOCUS	ROLE_SYSTEM_LIST/focused focusable	0x0007188c	
4	EVENT_OBJECT_SELECTION	ROLE_SYSTEM_SLIDER/selected focused focusable selectable	0x0007188c	
5	EVENT_OBJECT_FOCUS	ROLE_SYSTEM_SLIDER/selected focused focusable selectable	0x0007188c	
6	EVENT_OBJECT_VALUECHANGE	ROLE_SYSTEM_SLIDER/selected focused focusable selectable	0x0007188c	
7	EVENT_OBJECT_VALUECHANGE	ROLE_SYSTEM_SLIDER/selected focused focusable selectable	0x0007188c	
8	EVENT_OBJECT_VALUECHANGE	ROLE_SYSTEM_SLIDER/selected focused focusable selectable	0x0007188c	
9	EVENT_OBJECT_NAMECHANGE	ROLE_SYSTEM_CURSOR/floating	0x00000000	

Skip
 Ignore Mouse Move

You can see that changing progress bar leads to generation of `EVENT_OBJECT_VALUECHANGE` events.

Not all accessibility events are processed and propagated by Rapise engine. `EVENT_OBJECT_VALUECHANGE` is one of such events. To consume this event and make an appropriate call to `OnValueChanged` of `Win32CustomListboxControl` you need to add and register **custom accessibility event handler**:

```
function CustomRegisterAccessibleEvent(evt, etxt)
{
    if (etxt.indexOf("EVENT_OBJECT_VALUECHANGE") >= 0)
    {
        var ao;
        try
        {
            ao = evt.AccessibleObject;
            if (!SeSisValidObject(ao)) return false;
        }
        catch (e)
        {
            Log("Error getting event object: "+e.Description+" / "+etxt);
            return false;
        }

        var ro = SeSCacheAccessibleObject(ao);
        if (ro && ro) Log3("CustomListboxControl: " + ro.toString());

        if (ro != null && ("OnValueChanged" in ro))
        {
            ro.OnValueChanged();
        }

        return true;
    }
    return false;
}

g_customEventHandlers.push(CustomRegisterAccessibleEvent);
```

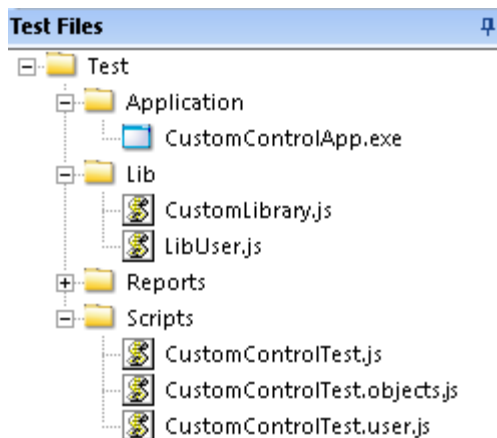
8. Record and Playback

Now you are ready to record and playback a test. Just remember that in Select an Application to Record dialog you need to uncheck Auto library and select User and Generic libraries.

Library	Description
<input checked="" type="checkbox"/> User	Default user-defined library
<input type="checkbox"/> Console	Console Application
<input checked="" type="checkbox"/> Generic	Generic library contains basic definitions for most comm...
<input type="checkbox"/> MSOffice	Microsoft Office with Accessibility

9. CustomControlTest

This tutorial is complemented by a ready test CustomControlTest which you can examine and run. Open CustomControlTest in Rapise and place contents of CustomLibrary file into LibUser.js file (C:\Program Files\Inflectra\Rapise\Engine\Lib\LibUser\LibUser.js). LibUser.js is added to CustomControlTest, so you can populate it with CustomLibrary code right in Rapise.



Tip: It is possible to launch CustomControlApp right from Rapise, just double click on CustomControlApp.exe in the project tree.

10. Wrap-up: Implementation Sequence

Full support for a custom object requires support for Record, Learn and Playback. Let's go over created library and specify the purpose of each component in it.

- **Matcher Rule:** - it is used to recognize the object inside an application, required for Record, Learn and Playback.
- **Events in Behavior Patterns:** handling events is required for Record.
- **Actions in Behavior Patterns:** actions are used to examine or change state of the control, required for Playback.
- **Custom Accessibility Event Handler:** required for Record if some important events are not

processed by Rapise engine as needed.

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