



TestMaker - Selenium IDE

User Interface Design

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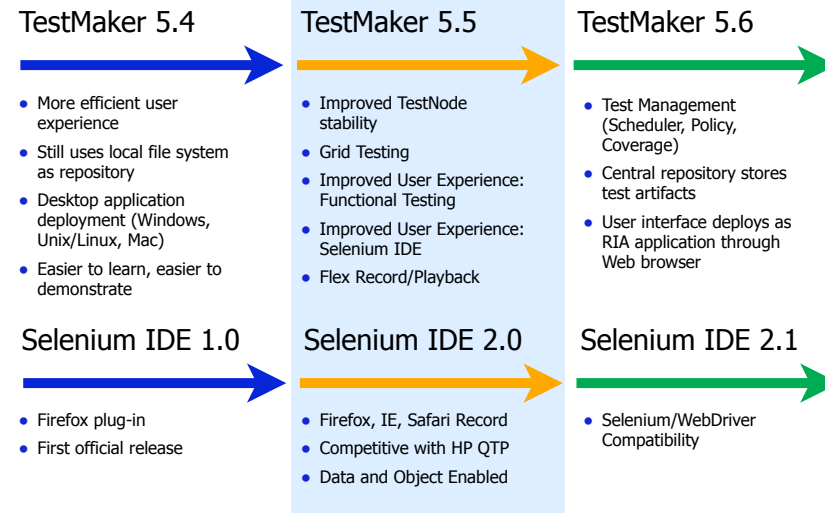
This is a user interface design proposal for an upcoming version of PushToTest TestMaker for Selenium IDE. Many TestMaker users need the following solution:

- 1) A competitive open source alternative to HP Quick Test Professional (QTP) for record/playback of Web application and Rich Internet Applications (RIA, using Ajax, Flex, Flash)
- 2) Record/playback within Microsoft Internet Explorer (MS IE) and Firefox
- 3) Test development productivity enhancements in TestMaker

This document is meant to convey a discussion between the TestMaker developers and community and the Selenium developers and community. It is a living document.

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Product Roadmaps



This proposes Selenium IDE 2.0 functional requirements and links the release to the TestMaker 5.5 and 5.6 roadmap. The goals include:

- 1) Introduce a new Ajax-based record/playback tool that is compatible with MS IE, Firefox, and Safari.
- 2) Flex record/playback is offered through the Adobe Flex Automation API and FlexMonkey.
- 3) Enable test operation experience drill-downs to rapidly determine the cause of an application issue.

TestMaker 5.5 delivers:


- 1) Selenium IDE 2.0 functions
- 2) Refactor the TestMaker TestNode architecture to provide a more stable, crash proof, and self-recovering operation.
- 3) Implement a test Grid engine to run tests on a group of available TestNodes automatically.

TestMaker 5.5 Goals

- ▶ Enhances Record/Playback
 - ▶ Web 1.0
 - ▶ Rich Internet Applications (RIA, using Ajax, Flex, Flash)
- ▶ Record in Microsoft Internet Explorer, Firefox, Safari
 - ▶ Implemented in Ajax using Extjs.com toolkit
- ▶ Attracts HP QTP Users To Switch to TestMaker/Selenium

TestMaker 5.5 delivers a compelling open-source alternative to HP QTP Users.

TestMaker 5.6 Goals

	PushToTest	
Products	TestMaker 5.6, Selenium, soapUI	QTP 10, QC, LoadRunner
Functional Tests	✓	✓
Load and Performance Tests	✓	✓
Test Management	✓	✓
Cost	\$50K-\$100K	\$300K-\$2 M
Cloud Testing	✓	
Modern App Support (Ajax)	✓	
Vertical Testing (SAP, Oracle Apps)		✓

TestMaker 5.6 provides a compelling open source alternative to HP QTP, LoadRunner, and Quality Center.

Comparison to HP QTP

	Selenium IDE 1.0	Selenium IDE 2 with TestMaker	HP QTP 10
Record/Playback	Firefox	MS IE, Firefox, Safari	MS IE
Verification	✓	✓	✓
Exception Handling		✓	✓
Data-Driven Testing		✓	✓
Custom UI Objects		✓	✓
Add-In Extensibility		✓	✓
Results		350+ charts	125 charts
Test Management Integration		Collabnet Team Forge	Quality Center (QC)

Detailed comparison at <http://www.pushtotest.com/docs/thecohenblog/web-testing-tools-comparison>

The QTP users I've met are looking for more than documentation and training on how to switch. They need an open source version of QTP. Selenium does a good job at deliver solutions to technical developers and testers. However, Selenium requires scripting knowledge. The majority of QTP users are building tests in "Keyword/Tree view" (not in Expert mode.) They depend on QTP to do the script creation for them.

Selenium's architecture makes it possible to deliver a competitive offering provided we keep the needs of today's QTP user in mind. See the above table for an initial list of feature improvements for Selenium IDE 2.

Find a detailed comparison of QTP and Selenium. See <http://www.pushtotest.com/docs/thecohenblog/web-testing-tools-comparison>

New Functions (IDE 2, TM 5.5)

- ▶ Record in IE, Safari, and Firefox
- ▶ Integrated Data Editor
- ▶ Reusable Test Objects
- ▶ User Transaction Definition for Advanced Reporting
- ▶ Record/Playback of Flex/Flash unit tests
- ▶ HtmlUnit Visual Playback for Easy Test Script Debugging
- ▶ Standard Report Logging Schema
- ▶ Test Scenario Support (Multiple Test Use Cases)
- ▶ CSS Selector Support

License Proposals

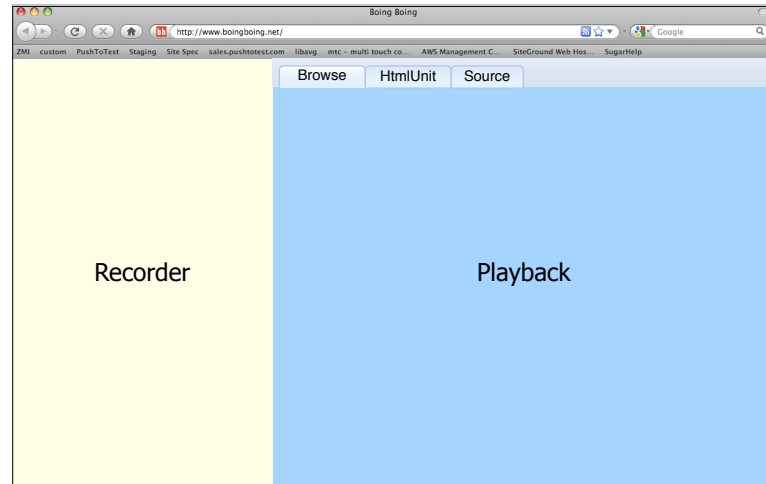
- ▶ PushToTest proposes to fund Selenium IDE 2.0 development and maintenance under GPL v2 license
- ▶ TestMaker GPL v2
- ▶ Selenium Core, RC, Grid continue under Apache 2.0

PushToTest distributes TestMaker source code under a GPL v2 license. Most people download the pre-built and certified TestMaker Command or TestMaker Enterprise product under a commercial license.

Selenium distributes Selenium Core, RC, and Grid under an Apache 2.0 license.

This proposal offers Selenium IDE 2.0 under a GPL v2 license.

Record/Playback Layout



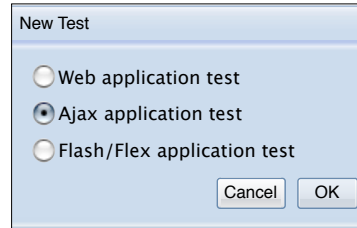
The Recorder function appears either in an embedded frame within the browser window (with its own drop-down menus) or in a floating window of its own. The Recorder controls record and playback. Playback happens in an embedded frame within the browser window. The Playback frame offers the following tabs:

Browse – displays the normal browser view of the application page

HtmlUnit – displays the WebClient.asXML() output with pretty-print formatting applied

Source – displays the browser's View Source view of the page. Remembers the vertical line number between page reloads.

Create A New Test



New Test

Web application test

Ajax application test

Flash/Flex application test

Cancel OK

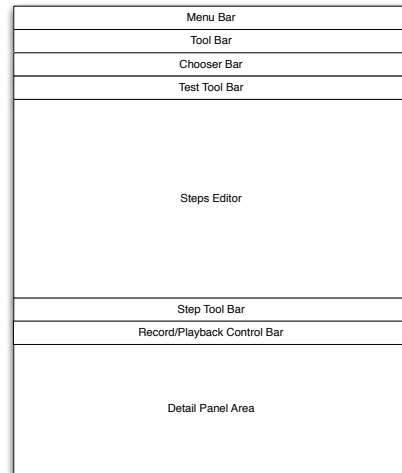
Selenium IDE 2 supports multiple recording syntax: Selenese, FlexMonkey. Others are possible in future releases.

When the user choose File -> New Test Case the Selenium IDE opens a modal dialog box for the user to identify the test case type:

- a) Web application test and Ajax application test save in the Selenese table format.
- b) Flash/Flex application test saves in the FlexMonkey format.

When the user chooses Ajax test Selenium IDE senses for a page reload within 10 seconds of a click event. When there is no reload, Selenium IDE automatically inserts a `waitForElementValue` command. It is up to the user to enter the element target.

Main Panel Layout



The Main Panel Layout provides user interface elements to record and playback tests and test suites.

Menu Bar – See slide 11

Tool Bar – Global tools to create a new test, create a new test suite, export a test, access the user guide, and exit Selenium IDE

Chooser Bar – Select an open Test Suite. A Test Suite contains one or more Test Cases.

Test Tool Bar – Displays icon to add a new Test Case to the current Test Suite.

Steps Editor – Displays Test Steps grouped by Test Case.

Step Tool Bar – Displays icons to add special test steps, including Insert Action, Insert Checkpoint, Start Transaction, End Transaction, and Add Data Source

Record/Playback Control Bar – Displays controls to start/stop record and playback

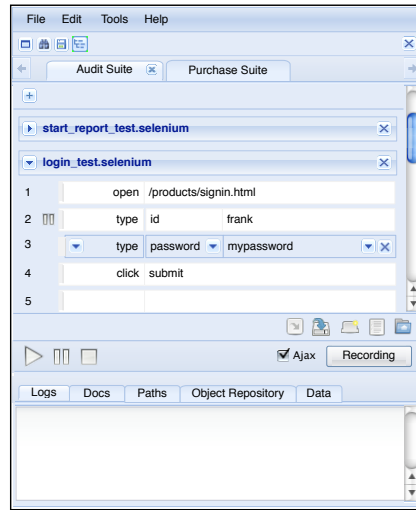
Detail Panel Area – Displays panels for working with XPath expressions, logs, data files, and test objects

Drop-down Menus

- ▶ File - New Test Case, New Test Suite, Export, Save, Save As..., Close
- ▶ Edit - Cut, Copy, Paste, Clear, Select All
- ▶ Options - Preferences
- ▶ Help - About Selenium IDE, User Guide, Selenium HQ

Exported files implement a jUnit-style TestCase class with setUp, runTest, and tearDown methods. Each is enabled to received a hashmap of input data fields. See the output of the Transformer in TestMaker 5.4 for an example template.

Record Tests and Scenarios



Startup of the Recorder displays a Untitled Test Suite containing one Untitled Test Case, and an insertion point at the top of an empty set of Steps.

Recording button indicates mode. In Recording mode the button displays "Recording!". Recordable actions (click, type, select) appear as new Steps in the currently selected Test Case. In Playback mode the button displays "Record".

Clipboard functions allow drag-and-drop and copy-paste. The Steps Editor uses Drag And Drop techniques described at <http://www.extjs.com/deploy/dev/examples/tree/reorder.html>

Step Tool Bar icons perform the following functions:

Insert Action – Adds a new empty Step.

Insert Checkpoint – Adds a Validation step. Validator chooser panel appears above currently selected Step.

Start Transaction

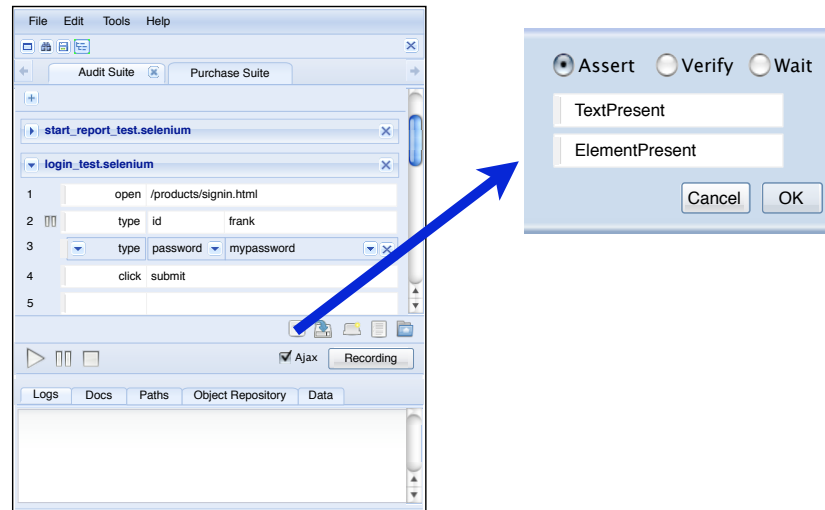
End Transaction

Add Data Source

File menu has the following commands:

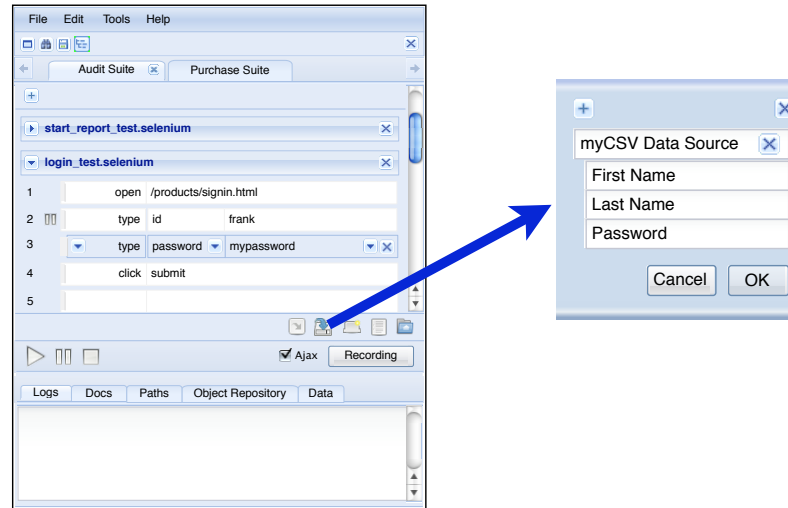
User may switch in and out of Ajax recording mode (with auto insert of waitForElement, setFrame, pause) by clicking the Ajax checkbox element.

Checkpoints



Click the Insert Checkpoint icon in the Step Editor Toolbar to view the Checkpoint Chooser. Select from Assert, Verify, Wait. Click OK to insert a new Step into the current selection point.

Data-Driven Tests



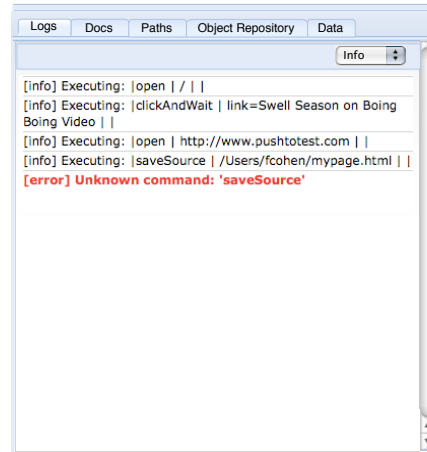
Click the Add Datasource icon to identify a Comma Separated Value (CSV) file, Relational Database (RDBMS), or data generating object to provide operational test data to a step.

The + icon adds a new data source.

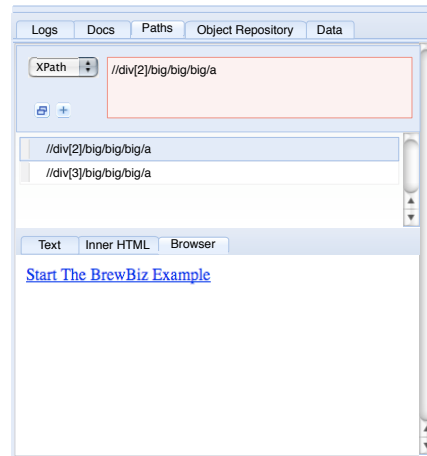
Clicking on a data field inserts a placeholder in the currently select step to receive the data field at test run time.

The x icon removes the data source.

Logging Panel



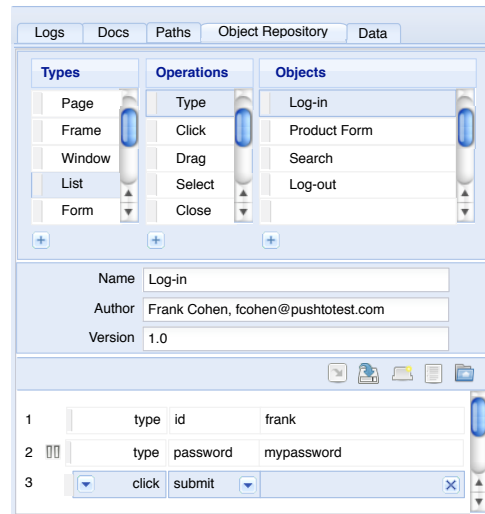
Paths Panel



Link, ID, Name, CSS
Selector, XPath, DOM,
Object

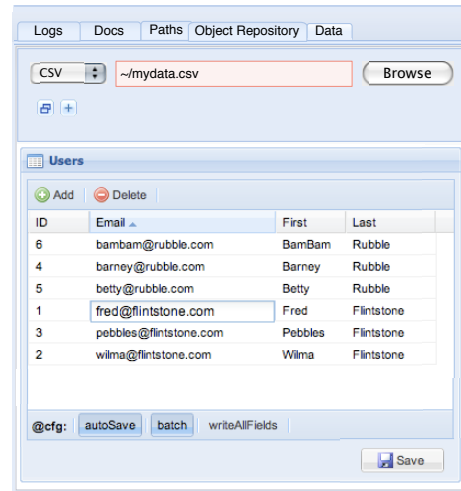
The Paths panel increases test developer productivity by enabling locator construction and experimentation. This is our homage to the XPointer add-on in Firefox.

Test Object Repository Editor



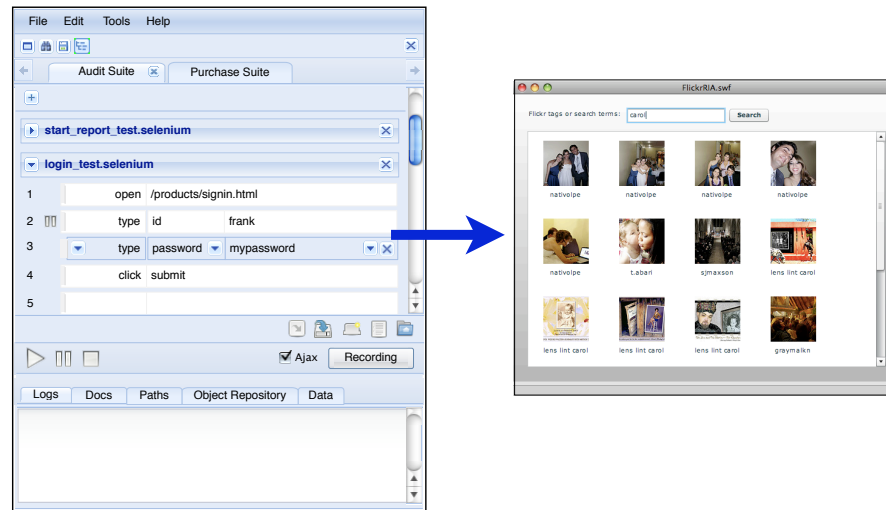
A macro editor for groups of Selenium commands. Enables an alternative to QTP Virtual Objects and third-party custom controls. Object definition is a simple XML format defined at <http://downloads.pushtotest.com/201001/objdef.xsd>. Objects are referred to by reference to a URL within the Selenium and Flex Monkey scripts.

Data Editor Panel



Live editing of CSV and RDBMS operational test data.

Flash (SWF)/Flex Testing



Flex Monkey record and playback function. <http://flexmonkey.gorillalogic.com/gl/stuff.flexmonkey.html>

IDE SDK

- ▶ This project must include documentation on how to implement changes to the IDE, including:
 - ▶ Adding additional Panels
 - ▶ Changing the IDE to support changes in the Test file schema
 - ▶ User extensions

Learn More

▶ <http://www.pushtotest.com/docs/forums/testmaker-6-discussion/422165897>