

COMPARE

HP QTP TO SELENIUM/TESTMAKER

Web Record/Playback for Functional Tests and Load and Performance Tests

December 2009

Web Testing

Many testers, developers and IT managers ask PushToTest to compare HP QuickTest Professional (QTP) to PushToTest TestMaker with Selenium IDE. PushToTest provides open source test automation solutions for organizations needing to improve the reliability and reduce service interruptions in their Web applications, Rich Internet Applications (RIA, using Ajax, Flex, Flash,) Web services, and Business Process Management services. PushToTest is the Open Source Test (OST) expert for dozens of tools. This comparison document helps organizations looking for an inexpensive open source solution that works with their latest applications.

High Level Comparison

| | HP QTP 10 | TESTMAKER 5.4/SELENIUM 1.0 |
|---|---|---|
| Technical experience required to be successful | ☆ | ☆☆☆ |
| Web 1.0 Record/Playback | ✓ | ✓ |
| Rich Internet Application (RIA, Using Ajax) Support | | ✓ |
| Drill down to root cause of functional issues/crashes | ☆☆☆ | ☆ |
| Record Tests | MS IE 6, 7, 8 | Firefox 2, 3 |
| Playback Tests | MS IE 6, 7, 8 | MS IE 5, 6, 7, 8, Firefox 2, 3, Opera, Safari, Chrome |
| Data-driven Testing | ✓ | ✓ |
| Reusable Test Components | ✓ | |
| Agile software development lifecycle (SDLC) support | | ✓ |
| Add-ons available | ☆☆☆ | ☆ |
| Language Support | VBScript | Selenese, Java, Ruby, Perl, PHP, Python, C#, Groovy |
| Functional Testing, Load Testing, Service Monitoring from one test script | | ✓ |
| Run tests in the Cloud, in your QA lab, or both | | ✓ |
| Price | \$6000 USD Per Seat, Plus \$1500 Annual Maintenance | Free (GPL 2, Apache 2) |

Detailed Comparison

| BENEFIT COMPARISON | HP QTP 10 | TESTMAKER 5.4/SELENIUM 1.0 |
|---|--|--|
| Improve collaboration between workgroups with shared function libraries, object management and flexible asset storage | Sharing enabled with Quality Center (QC.) | Sharing enabled with svn and other repository integration. |
| Helps implement Agile methodology. | Built around Waterfall SDLC where QA testers test after software is completed. | Built for Agile SDLC, including Test First methodology, Continuous Integration, and Unit Testing. Popular with Developers and Testers. |
| Collapse test documentation and creation to a single step for agile testing | Record/playback with Web object recognition. QTP is not an agile tool. | Record/playback to build use cases, test suites, test cases. Good for Agile Test-First methodology. |
| Fix defects faster by fully documenting and replicated defects for developers | QTP offers native Quality Center (QC) integration. QC offers good Test Management capabilities. | Selenium and TestMaker provide common framework for QA Testers, Developers, and IT Operations to work together. |
| Set a test development process and propagate it throughout the organization | QTP with Quality Center (QC) offers Test Management for test process propagation in your organization. | Selenium and TestMaker offer test process support for your organization. |
| Make test modifications “on the fly” during test execution | ✓ | |

| TECHNICAL DETAILS | HP QTP | SELENIUM & TESTMAKER |
|---|--|--|
| Skill Level Required | Basic Testing Knowledge plus light test scripting | Basic Testing Knowledge plus scripting experience in Selenese language |
| Record and Playback | Records to actions using VBScript. | Records to commands using Selenese and dynamic scripting languages. |
| Event or Time based Test Recording and Playback | Time-based recordings often fail on playback in dynamic Web environments. Requires addition of Checkpoints to synchronize test script to application under test. | Event-oriented test scripts for Web I.O applications. Manual addition of validation/wait commands in asynchronous Ajax application environments. |

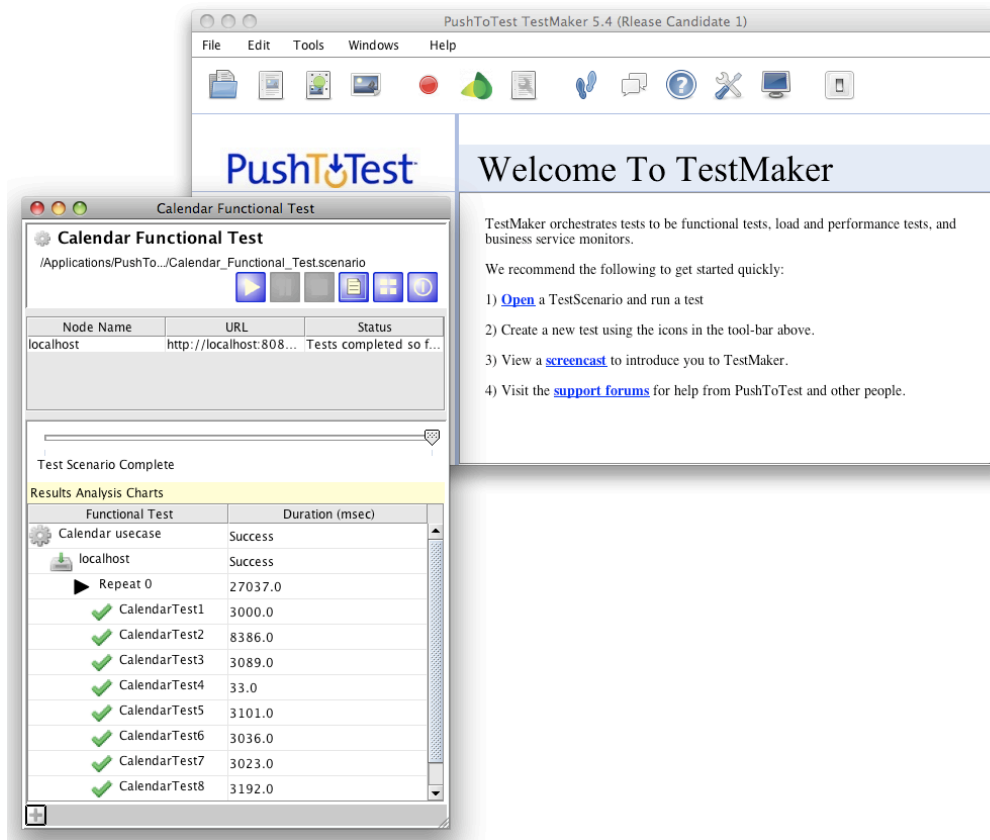
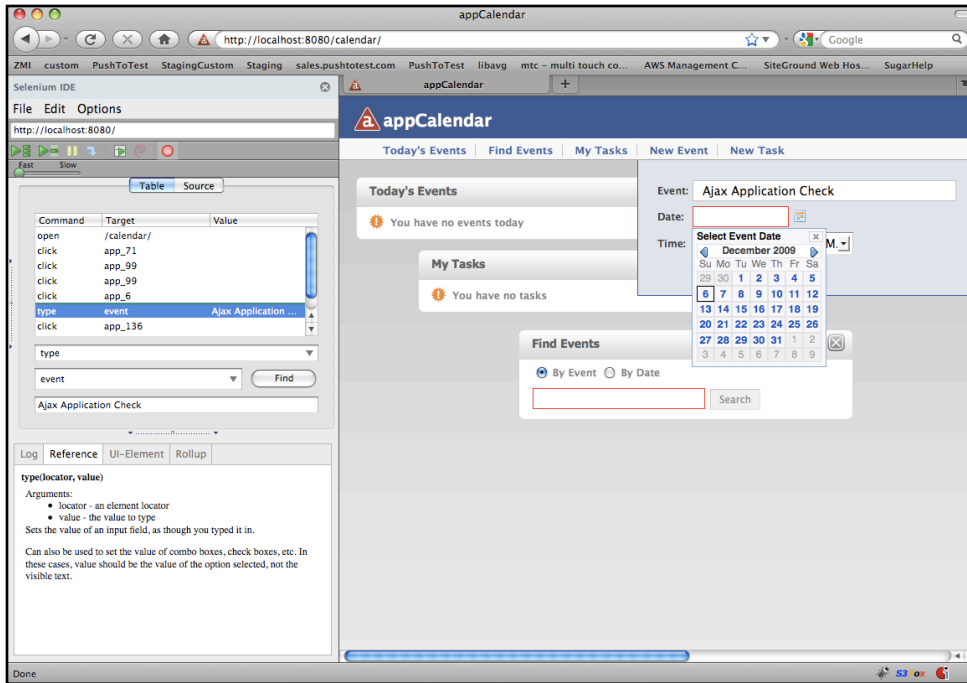
| TECHNICAL DETAILS | HP QTP | SELENIUM & TESTMAKER |
|--|--|---|
| Rich Internet Application (RIA) support for Ajax | Poor | Good |
| Supported Languages | VBScript | Selenese, Java, Ruby, Perl, PHP, Python, C#, Groovy |
| Extensible | Large group of value added extension packages for QTP. | Large open source community of committers and participants. |
| Verification | Checkpoints synchronize test to application under test, and validate application values and state. | Assertion and verification commands to test and validate the application under test. |
| Drill down to root cause of functional issues/ crashes | Point and click to drill down to application-level error messages. | No point-and-click, easy viewing of logs for exception reports and stack traces. |
| Verification of Ajax applications | Poor. Architecture not designed for Ajax data models, event models, and protocols. | Good. Architecture readily supports Ajax data models, event models, and protocols. |
| Exception handling | Known as “Recovery” in QTP. Handles application crash and message dialog recording. | Simple request/response and error logging. |
| Test tool integration (hooks) into application under test. | QTP hooks into memory space of applications under test. Some application crashes take QTP down too. | n/a |
| Test tool integration (hooks) with Web browser. | QTP hooks into memory space of Web browser. Requires QTP compatibility with Web browser. Works best in MS IE. No support for Firefox 3, Opera, Safari, Chrome. | Selenium playback requires browser-bot running in supports Web browser. Supports MS IE 5, 6, 7, 8, Firefox 2, 3, Opera, Safari, Chrome |
| Data-driven testing | QTP features help users created Microsoft Excel workbook that can be accessed from within QTP test context. | TestMaker provides operational test data to Selenium test script from CSV, Relational Databases, and data generating objects. |
| Automating custom and complex UI objects | Customized user interface objects and other complex objects may not be recognized properly by QTP. | Exported Selenium tests have full use of object technology in Java, Ruby, and other script languages, including loops, complex data structures, conditional execution and branches. |

| TECHNICAL DETAILS | HP QTP | SELENIUM & TESTMAKER |
|--|---|---|
| Reusable Test Components | QTP Virtual Object concept enables users to add some degree of support for UI and complex objects. Not always possible, depends on application construction. | Supports combining recorded tests into larger test use cases and test suites, including data and session sharing between tests. |
| Add-in Extensibility | Add-ins for third-party and custom controls built in Web, .NET, Java, and Delphi. | No extensibility Add-On system |
| Results | QTP generates result file for test cases at the end of a test. Results file is in XML tree format. Shows Pass, Fail counts, error messages, and sometimes supporting information to determine underlying failure. Users frequently need to re-execute test cases to observe the failure. | TestMaker generates results files for test use case, test case, test suite, transactions. Results files in XML format. Shows Pass, Fail counts, error messages, and command step execution times. |
| Quality Center (QC) Integration | Yes, natively | Yes with PushToTest TestMaker QC Integration option. |
| Multiple Language and Tool Support | Records tests of Web and Desktop Applications | Repurposes tests created by Selenium, soapUI, Mozmill, Windmill, and several other test tools. |
| Support of Agile Software Development Life Cycles (SDLC) | Poor because of QTP's focus on recording tests over constructing reusable test units. | Strong from Selenium support of building reusable test cases, and TestMaker's component methodology. |
| Support of Agile Techniques | Little thought given to continuous integration and iterative test development. | TestMaker and Selenium designed to build reusable test components that plug into continuous integration environments for iterative test development. |
| Novice/Expert Modes | QTP Keyword View is default. Useful for beginners, but is most widely used mode. Displays automation steps as a descriptive tree of actions and functions. Tree contains column listing the action or function name, parameters, and comments. Expert mode displays for editing the underlying VBScript script. | One mode only. |

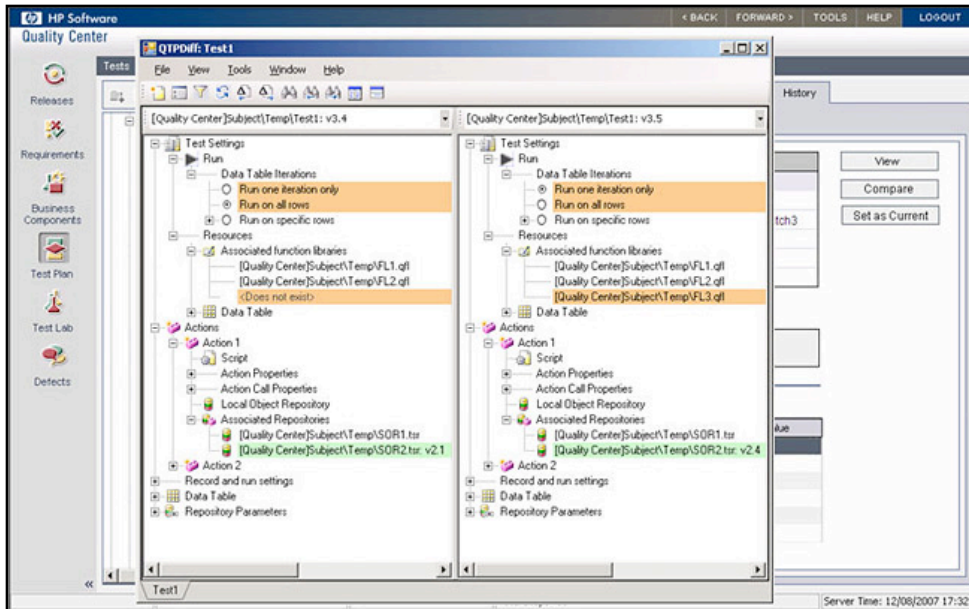
| TECHNICAL DETAILS | HP QTP | SELENIUM & TESTMAKER |
|-------------------------------------|---|---|
| Language Support for Objects | QTP uses VBScript. VBScript supports classes but not polymorphism and inheritance. VBScript does not implement all of Visual Basic for Applications (VBA) classes, keywords, features. No support for integrated debugger, event handler, and forms editor. HP added a QTP VBScript debugger, but it disappoints those used to debuggers found in IDEs. | Exported Selenium tests have full use of object technology in Java, Ruby, and other script languages, including loops, complex data structures, conditional execution and branches. |
| Operating Environment Compatibility | QTP requires Windows ActiveX environments. | MS IE 5, 6, 7, 8, Firefox 2, 3, Opera, Safari, Chrome |
| Supported environments | QTP has optional add-on modules (at additional cost) for: Web, Java, .Net, WPF, SAP, Oracle, Siebel, PeopleSoft, Delphi, Power Builder, Stingray, Terminal Emulator, Flex | TestMaker and Selenium have standard support for Web, RIA, .NET, Java, Ruby, Groovy, Perl, PHP, Python, Flex/Flash/AMF, SOAP, REST, Ajax (GWT, YUI, JQuery, Appcelerator) |
| Support Availability | HP Professional Services, Mercury User Guides, some third party support. However, we often find comments like this about QTP, “I couldn’t find any “real-world” reviews and my guess is that you may be having the same problem.” | Google search on “Selenium TestMaker” results in 33,800 references. Estimated 250,000 TestMaker users. |

Screen Shots

Selenium 1.0 and TestMaker 5.4



HP Quick Test Professional (QTP) 10



| Item | Operation | Value | Documentation |
|------------------------|---------------|---------------------|--|
| Demographics Info | | | Call the Demographics Info action. |
| Membership Preferences | | | Call the Membership Preferences action. |
| Membership Preference | | | |
| Membership Preference | | | |
| Mem_Type | Select | DataTable("memty... | Select radio button <the value of the specified Data Table c... |
| Mem_Type | GetROProperty | selected | Retrieve the current value of the selected property for the "... |
| IF Statement | | Mem_Type = "paid" | Check whether (Mem_Type = "paid") is true. If so: |
| Paid_Mem | | | Call the Paid_Mem action. |
| ELSE IF Statement | | Mem_Type = "free" | Otherwise, Check whether (Mem_Type = "free") is true. If so: |
| Free_Mem | | | Call the Free_Mem action. |
| ELSE Statement | | | Call the Preferred action. |
| Preferred | | | |

Prepared by Frank Cohen (fcohen@pushtotest.com), PushToTest, December 5, 2009

QTP requirements stated at <http://tinyurl.com/nndjpv>

QTP pricing stated at <http://tinyurl.com/yamr54t>

In addition to this comparison check <http://www.qtp10.com/2009/08/qtp-vs-selenium.html>

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