

HP MERCURY QC 3RD PARTY TOOL INTEGRATION

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Executive Summary

HP Mercury Quality Center is a Software Test Management tool, integrated set of software and services including key elements for QA activities such as requirement, defect management, automation and functional testing. In today's dynamic IT world of business technology optimization (BTO), test automation faces a number of obstacles including tool integration. Many companies are trying to leverage different tools to bring the bottom line up and increase testing productivity. This integration would bring an old technology to the new one, creates a synergy between different tools and most importantly save development and implementation time. In this document, we will present a unique integration process between two competitors, HP Mercury and IBM Rational tools. We are going to describe not only the integration process, but the entire framework solution, the mindset which will be the key element for any tool integrations with HP Mercury tool of choice.

Integration Overview

Obstacle

Company X has a significant investment in IBM Rational Robot. QA analysts have developed a standalone test automation framework for the project Y. The management decided to expand the coverage of test automation with emphasis on Test Management tool for producing better reporting, metrics and most importantly, improve Test Automation Framework to increase tools usage in the testing community. IBM Rational Robot does not integrated with HP Mercury Quality Center (The test management tool of choice a Company X) and current test cycles do not allow starting test automation from scratch using HP Mercury tool family. The test automation team has to expand automation coverage based on existing framework and integrate the tool with HP Mercury QC reporting and test execution features.

Problem Resolution

The integration capability in HP Mercury QC is well know as 2 way process. First, through a development of fundamental Add-in and use that as a part of the HP Mercury QC. The second, quicker and less expensive is through the Visual Application Programming Interface, know as VAPI. Neither of these resolutions

require a complex development approach and structure for a complete integration.

The integration process includes a several key elements:

1. Library environment and input parameters declaration.
2. Test tool launching process.
3. Report gathering process (from IBM Rational Robot).
4. Report integration with HP Mercury QC.

Library, environment and input parameters declaration

The VAPI integrator is available in Visual Basic Script (VBS), Java, and COM scripting languages. This particular solution been implemented using VBS despite the fact that IBM Rational Robot is VBS based product and the newest version is developed on Java.

Rational Robot is using proprietary library format known as .sbl and .sbh files. To declare and passed any variables, the VAPI integrator dynamically creates .sbl files with variables defined by the VAPI and/or Quality Center itself. These files, by nature, should set as permanent hub for a test under execution (TUE), in other words, the functions are the same, and variables are dynamic.

Test Tool Launching process (TTL)

The VAPI integrator has internal capabilities to launch any third party applications using the XTool.run OTA function. This function should be properly configured to launch and close IBM Rational Robot along with an error handling routing.

Report Gathering from IBM Rational Robot

TTL does not automatically provides a pass or fail result from the TUE. It returns only the launching result. It's important to build a receiving/listening mechanism to monitor a completion of the test. Every test script from IBM Rational Robot has capabilities to save execution results to an external file. The VAPI integrator is listening to a dynamically updated report file from IBM Rational Robot and programmatically determines when the test completes.

The Report Integration with HP Mercury Quality Center

When the TUE successfully complete, the VAPI integrator reads the completed report from IBM Rational Robot, parsing each and every line, and programmatically mapping the report values to appropriate QC field, including Pass/Fail result, description, expected and actual result, and a time stamp.

Test Automation Framework (TAF) Overview

The successful integration should be supported by a reliable and comprehensive automation framework, comprising test libraries, business processes and data.

Before the integration, the old framework structure was build around data pools (another proprietary IBM Rational Robot data format) which was quickly becoming a maintenance nightmare with framework expansion.

The improved framework would use every script and library from the old TAF (the most time consuming development process) and shift focus to the business process and data. From the maintenance standpoint, a relational database was chosen as an ultimate source to contain business processes, gather and distribute a data. With relational DB, the framework is capable of archiving and changing business processes seamlessly and efficiently. HP, formally Mercury, QC drives the execution process through data drivers (VAPI) as individual tests. IBM Rational Robot connects to the DB and applies the defined business process and data to the script.

Summary

HP's QC 3rd party tool integration has become a vital element in our Test Automation Infrastructure. The investments are not at risk anymore. With a VAPI integrator, QA will see a difference from HP's automated tools fully integrated with Quality Center, robust reporting capabilities, defect posting capabilities, requirements linkage and coverage, overnight test execution and planning. The QC 3rd party tool integration will bring yesterday's "off the shelf" technologies to produce today's outstanding results.