CA Agile Requirements Designer for HP ALM QC

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Import and optimize test cases and requirements from HP ALM QC and automatically generate the smallest set of tests needed for 100 percent coverage. These tests are provisioned directly to HP ALM QC and are "matched" to the data needed to execute them, providing testers with everything they need to deliver fully tested software on time and within budget.

Executive Summary

Challenge

Rigorous testing is central to the delivery of quality software, but testing remains too slow and manual. Testers are usually provided with ambiguous and incomplete requirements, from which they manually derive test cases. This is a time consuming process, which typically leads to just 10 to 20 percent functional coverage, while rampant over-testing is the norm. Testers often lack the data they need and bottlenecks arise as they manually create it or search for it among large production databases. When a change is made to the requirements, testing costs and bottlenecks quickly mount, as the existing test cases and data have to be updated by hand.

Opportunity

CA Agile Requirements Designer (formerly Grid Tools Agile Designer) for HP ALM QC provides a complete, integrated solution designed to help deliver modern applications to market earlier, while reducing the cost and significantly improving the efficiency of testing. Existing requirements and test cases can be imported from HP ALM QC and are optimized, automatically creating the smallest set of test cases and data needed to achieve maximum test coverage. De-duplicating existing test cases eliminates redundant over-testing, so that you can test more in fewer tests and deliver fully tested software earlier and at less cost.

The data needed to execute every possible test is mined automatically from multiple back-end systems in minutes, while powerful synthetic data generation will create any data needed for rigorous testing. The data is exported directly into HP ALM QC, "matched" to the exact tests it can run, avoiding the bottlenecks created by manual data provisioning, and providing testers with everything they need to deliver quality software on time and within budget.

When the requirements change, test cases and data are updated automatically. The impact of the change across an entire system is identified and any new tests needed for maximum coverage are created automatically. Testers only re-test what they need to, shortening testing time and avoiding the delays created by manual test maintenance, so that you can deliver quality software which reflects constantly changing user needs.
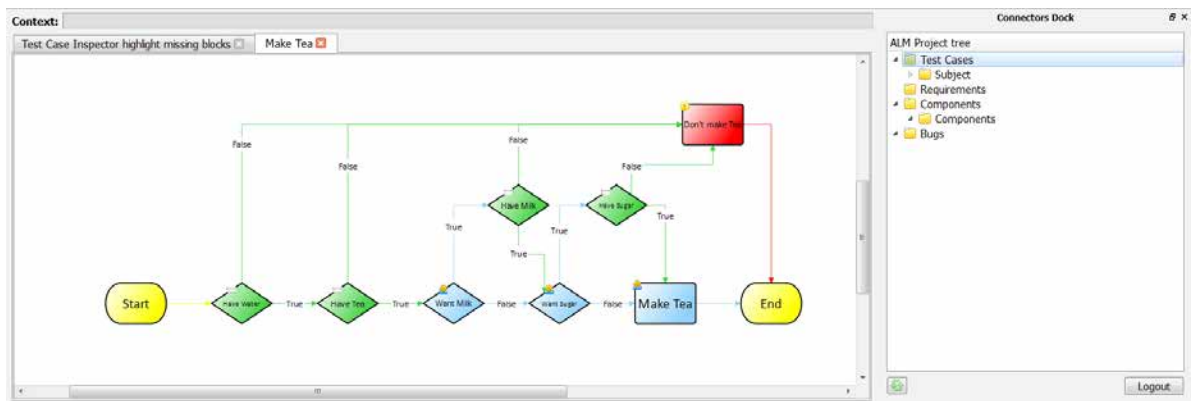
Benefits

▪ Achieve maximum coverage in the fewest tests possible, to deliver quality software earlier and for less.

▪ Shorten the average test cycle by 30 percent by de-duplicating existing test cases.

▪ Detect defects earlier, where they require far less time and resources to fix.

▪ Avoid the costly rework and delays created by ambiguous requirements.

▪ Rapidly provision the right data to the right place to avoid testing bottlenecks.

▪ Respond to changing user needs by automatically updating tests and data when requirements change.

Section 1:

Build Better Requirements

Existing requirements and test cases from HP ALM QC can be imported directly and converted into complete, unambiguous logic flows. This provides greater clarity between testers, users, business analysts and developers, avoiding the defects which arise from ambiguity in requirements, and the costly rework they create. CA Agile Requirements Designer will attach accurate cost and complexity metrics to each requirement, so that you can forecast development time and cost before you start.

Figure A.

Requirements, business components and test cases can be imported from HP ALM QC and mapped to unambiguous flowcharts

- Automatically build an unambiguous, active flowchart directly from your existing test cases and requirements.

- Visualize complex logic and improve collaboration with clear process models and use cases.

- Provide the business with accurate cost and complexity metrics for each requirement.

From two days to update test cases after a change is made to the requirements to five minutes[1]

Raise your test coverage by an average of 80%[2]

Cut over testing by up to a factor of four[2]

Section 2:

Test More in Fewer Tests

CA Agile Requirements Designer will optimize the imported HP ALM QC test cases, building the smallest set of test cases needed to cover 100 percent of functionality. Any redundant, duplicate or invalid test cases are removed, eliminating wasteful over-testing and shortening the average test cycle by 30 percent. CA Agile Requirements Designer allows you to:

- Ensure maximum coverage with the minimum set of test cases.

- Detect defects earlier, where they require far less time and resources to fix.

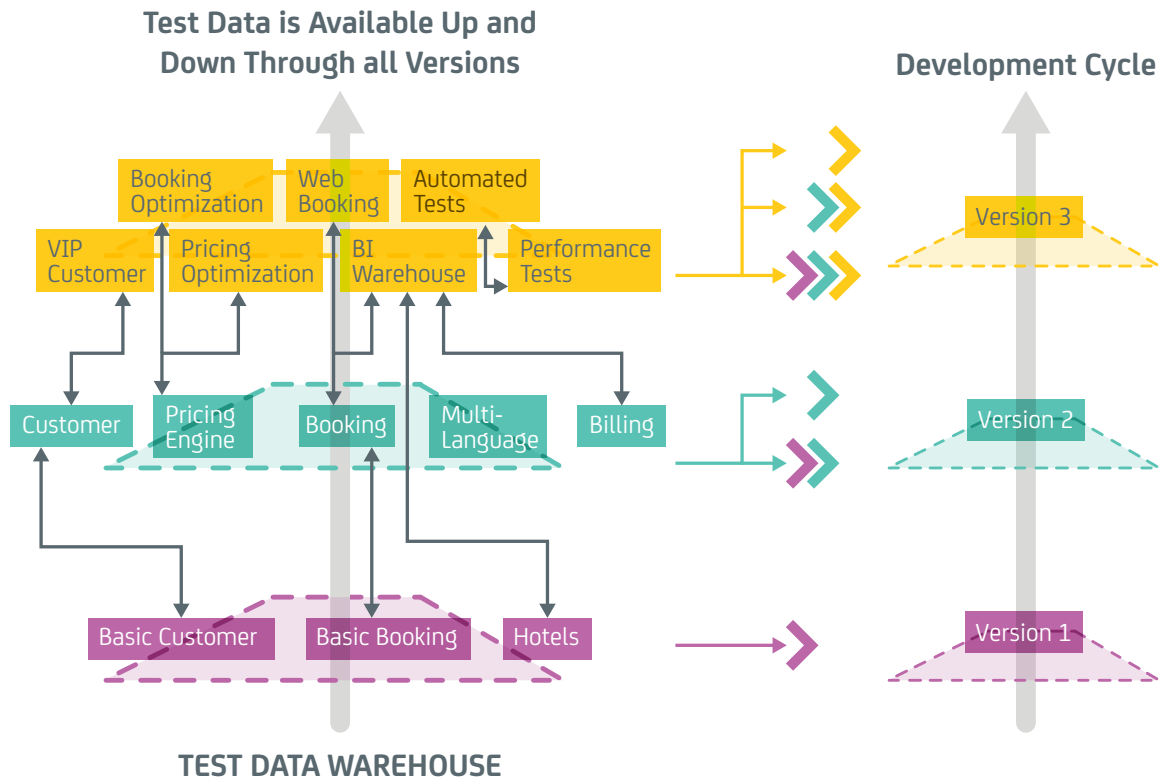- Prioritize critical test cases for better risk-based testing.

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Section 3:

Find and Make the Right Data

CA Agile Requirements Designer significantly reduces the amount of time spent finding the right data for testing. The data needed to execute every possible test can be quickly found among multiple back-end systems using automated data mining. Where no data exists for a particular test, it can be created automatically using powerful synthetic data generation. The data is linked to the tests which it can run and can be exported directly into HP QC, providing testers with all the data they need to deliver fully tested software on time and within budget.

Figure B.

Data stored in the test data warehouse is updated to reflect changes to the requirements and is available across versions in parallel.

Test Data is Available Up and Down Through all Versions

Development Cycle

TEST DATA WAREHOUSE

As it is delivered, data is cloned, allowing multiple teams to use it in parallel, without disrupting each other's data. Powerful version control means that relevant data sets automatically reflect changes made to the requirements, so that multiple releases and versions can be developed in parallel. With CA Agile Requirements Designer, you can:

▪ Automatically find or make test data, based on the test cases which need to be run.

▪ Link test cases to the right data and export them straight into HP Quality Center.

▪ Share, request and re-use data using a self-service Web portal for improved efficiency.

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Section 4:

Manage Changing Requirements

Making a change to requirements is quick and simple with CA Agile Requirements Designer. Any broken tests are automatically removed or repaired and any new test cases needed to retain maximum coverage are created. This eliminates the bottlenecks created by manual test maintenance, allowing testers to deliver valuable software which reflects constantly changing user requirements. Using CA Agile Requirements Designer, you can:

▪ Automatically identify and repair test cases broken by changes in the requirements.

▪ Update tests automatically when a change is made to requirements and eliminate the bottlenecks created by manual test maintenance.

▪ Create any new tests needed to maintain 100 percent coverage in minutes.

Section 5:

CA Agile Requirements Designer for HP BPT

CA Agile Requirements Designer for HP Business Process Testing (BPT) connects test case design and test data provisioning. It allows you to quickly find and make the right sets of test data and link it to test cases, virtual messages and expected results. You can create a library of test cases and data that can be shared, requested and reused through a self-service web portal. By re-using and sharing data between teams you will be able to develop faster and reduce the cost of testing. With CA Agile Requirements Designer for HP BPT, you can:

▪ Quickly and easily import HP BPT models into CA Agile Requirements Designer and convert them to unambiguous, active flow charts.

▪ Provide a standardized, script-free approach to provisioning the right data to test cases.

▪ Share test components and test data between test teams, in parallel, for increased efficiency.

An End-to-End Testing Solution

CA Agile Requirements Designer further enables the environments needed for rigorous testing to be provisioned, eliminating the delays and costs associated with system constraints and allowing projects to efficiently move from design to deployment.

Virtual end-points can be overlaid onto the requirements and test cases themselves, allowing testers and developers to specify exactly what in a system needs to be virtualized. Through the integration with CA Test Data Manager and CA Service Virtualization, the virtual services needed to execute 100 percent of possible test cases can be created, allowing distributed test and development teams to deliver quality software on time and within budget. This will allow you to:

- Provide parallel access to interdependent services and components to eliminate the delays created by cross-system dependencies and constraints.

- Identify exactly what in system requirements will need to be virtualized for rigorous testing and create on demand test and development environments.

- Import and create the optimum set of test cases, virtual assets and test data and manage them from within HP ALM QC, creating a fully integrated dashboard for end-to-end testing and development.

Learn how **CA Agile Requirements Designer** can help you achieve more automation and with the right test data.

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1 Grid-Tools audit at a large financial services company
2 Grid-Tools' audits on customer test cases