

BUSINESS
ASSURANCE
& TESTING



QEx AUTOMATION PLATFORM



MARKET NEED

Increasing application complexities and shorter release cycles have made it imperative to test new features whilst performing regression testing on the existing functions.

Testing requirement has to become more agile, testers must work with development teams on day-to-day project activities and thus teams must automate in the right way. Many organizations are turning to enterprise automation, which comes with promises of greater efficiency and cost savings that have made it the mantra of many CEOs since long now.

For achieving high levels of automation quickly, enterprises seek platform driven approach to customize test automation and help by overcoming automation backlog.





HOW CAN WE HELP?

HCL has developed a script-less comprehensive automation solution called 'QEx Automation Platform' for testing web, desktop and mobile applications.

HCL's QEx Automation Platform is a tool-agnostic solution, which provides complete and comprehensive automation capabilities. Created on industry standard tools; it enables repeatability, re-usability and the easy adoption of automation. It works with functional automation tools, including licensed tools such as Unified Functional Tester (UFT) and open-source tools such as Selenium. It also supports seamless integration with test management tools.

QEx AUTOMATION PLATFORM FEATURES

1. Easy-to-use automated software testing platform for multiple environments, devices and software applications, and any technology

QEx Automation Platform offers ease to develop and manage test automation projects. You can optimize robust test automation through QEx Automation Platform – for testing of any desktop, web or mobile application. Because today's applications and platforms are using many individual types of UI and continuously strives to offer full object recognition for any UI technology. As of now, it supports the platforms and UI technologies listed below:



Desktop: .NET, WinForms, WPF, Win32, VB, Java, Delphi, PowerBuilder, SAP, MFC, ActiveX, Siebel, Oracle and many more



Browsers: HTML, HTML5, JavaScript, Ajax, Silverlight, Flash, Flex, Air, ASP.NET, Google Web Toolkit, YUI library, Ext JS, Ext.Net, Java applet, jQuery, Sencha GXT, DHTMLX, and many more along with cross-browser testing for Internet Explorer, Firefox, Chrome and Safari



Mobile: Native iOS apps, native Android apps, Xamarin.iOS, Xamarin.Android, PhoneGap, mobile web testing for iOS, Windows Apps, web and hybrid apps

2. Broad acceptance – seamless integration and pure flexibility with a professional API for multiple teams, different skill sets and different responsibilities

QEx Automation Platform does not require any scripting language. Within the test development environment, testers create flexible automation test suite projects, but without the need for programming. The platform enables collaboratively automating with your team to succeed faster. You can now enable your business analysts and subject matter experts to participate in automation. Nonetheless, test suites and reports can be enhanced with user-specific automation code.

3. Quicker, more reliable test automation

QEx Automation Platform is supported through Unified Functional Tester (UFT) and Selenium, widely accepted automation tools in the market. It shrinks test cycle times and related costs and is a portable automation testing platform for web/desktop/mobile applications. The tests can be created in web browser without any scripting languages. They can be run directly in most modern web browsers. It empowers you through:

- **Fastest script creation:** Record tests on the Automation Platform or use 50+ pre-built keywords within the platform to create test script
- **Easiest script management:** Manage your objects the smarter way with central object repository, parameterize your script with point and click, use inbuilt recovery scenarios to handle exceptions and do much more on top of automation tools

4. Automate mobile testing

The Platform supports all mobile operating systems. Start automating your Android, iOS and Windows 8 app testing using your favorite tool – Robotium, Appium, Sikuli or cloud based tools like Perfecto, SeeTest, etc., which enables you to find bugs earlier and with less effort. The Platform comes to you with the below features:

- Support for automation of Web, Native and Hybrid apps – run your tests on actual devices
- Use of same methodology as web to create your mobile test – central object management, keyword driven, integrated data management and much more
- Use of image-based and object-based mobile automation mechanisms in same script – get the best of both worlds

5. Multi Browser Testing – With HCL Cloud

Run hundreds of parallel acceptance tests and cut down your testing time – we have deployed your favorite tools on HCL Cloud

- Run your tests with multiple combinations of browsers and operating systems in cloud
- Save yourselves the hassles of managing test infrastructure for parallel runs, we do it for you
- We give you clean VM on cloud every time you execute with HCL Cloud

6. Click & Go test reports – reproduce bugs and maintain tests

QEx Automation Platform test report files are PDF based. They are generated during test execution and reduce the time needed to determine what went wrong. In case of a failed execution the report automatically capture screenshots of the system under test to simplify bug identification.

7. Key advantage – Integrate with CI and test management

QEx Platform integrates with your existing CI (Jenkins, Bamboo) and test management tools (Rational Quality Manager, HP ALM, TestLink) seamlessly.

- Effortlessly integrates into your existing test setup
- Picks tests automatically from your test management tools (HP ALM/QC, TestLink) and sends the result back for easy management, logs defects automatically for failed test case and empowers your agile process with automation

What's in QEx Automation Solution?



QTP and Selenium

REDUCE TOOL COST AND ENABLE BUSINESS TEAMS TO CREATE TEST SCRIPTS

Through ability to create and execute QTP and Selenium test scripts helps

Reporting Dashboard

ANALYZE TRENDS

Through test report for test suits



DevOps Support

END-TO-END AUTOMATION SUPPORT

Through integration with DevOps tools like HP CDA

In-Process Automation

REDUCE CYCLE TIME

Through creation of automation script for In-process automation



Support for Cloud Server

REDUCE COST SIGNIFICANTLY

Through support for cloud server

QC Integration

USE SINGLE TEST REPOSITORY TO GET TEST REPORT

Through ability to update test execution data in QC with QTP report



Link Test Data

ELIMINATE TEST EFFORT TO MAINTAIN MULTIPLE TEST DATA SHEET

Through linked test data feature

Reusability

REDUCE TEST SCRIPT CREATION/ MAINTENANCE EFFORT

Through Reusable functions/ keywords for QTP and ease to manage them in UI



Web Browser Support

GET HIGH PORTABILITY AND ACCESSIBILITY

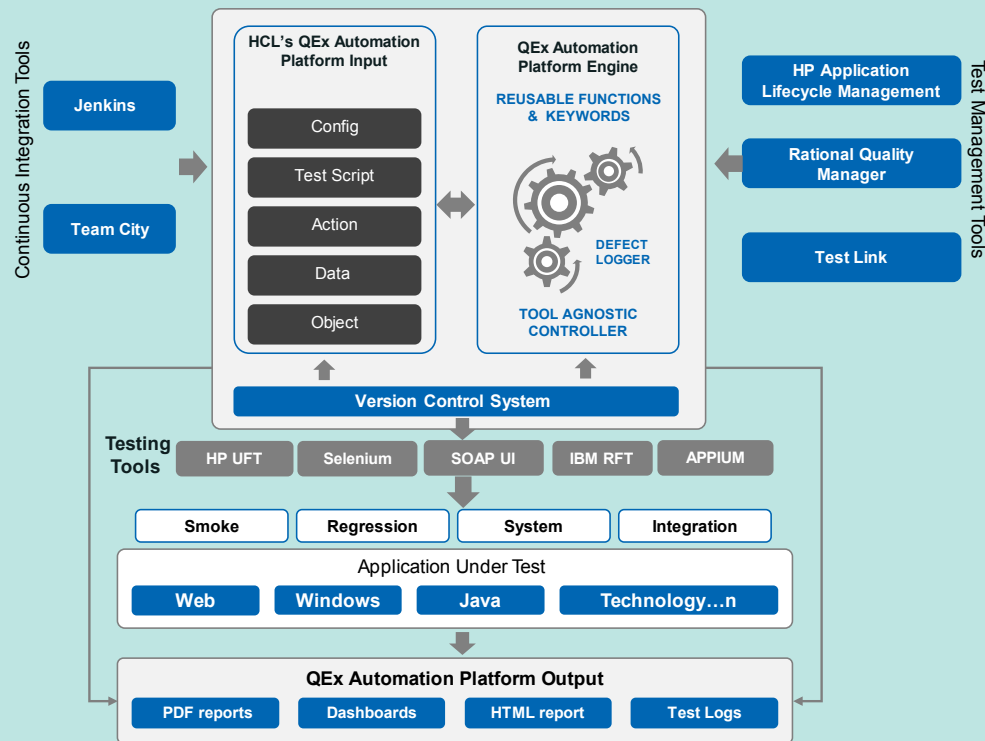
Through web browser support



HOW DOES IT WORK?

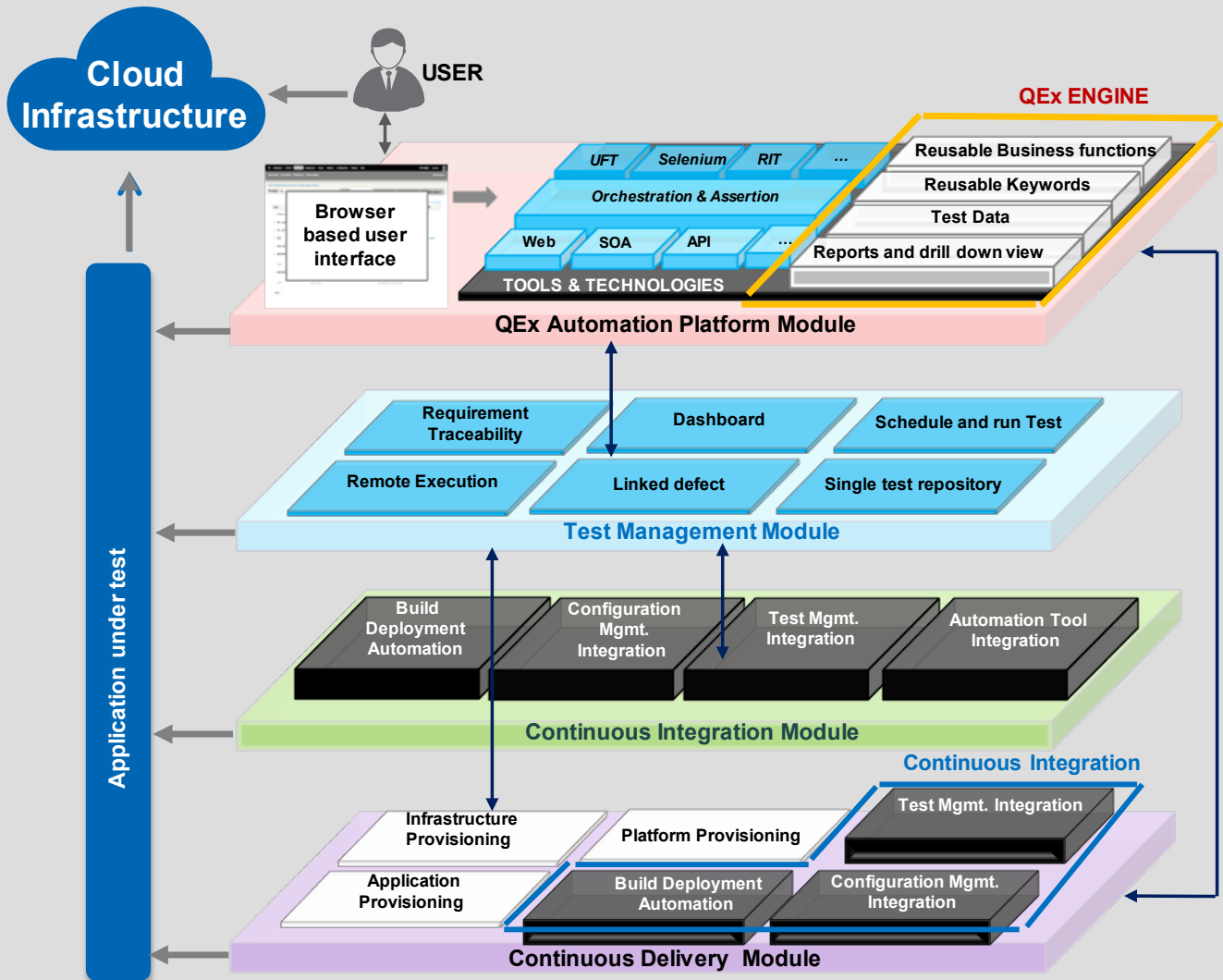
QEx Automation Platform brings you advantageous features such as re-usable test scripts, comprehensive need-based reporting, cost and time efficient platform building and modification, and alleviates the need for additional skilled personnel for testing.

As shown in the image, the tool-agnostic platform works seamlessly with functional automation tools, including licensed products such as Unified Functional Tester (UFT), open-source tools like Selenium, Appium, etc. It is a user-friendly solution which requires only basic knowledge of automation. The platform seamlessly integrates with test management systems including HP ALM/QC, TestLink and CI tools like Jenkins and TeamCity. It facilitates comprehensive reporting and detailed test logs; enables capability to support multiple iterations with multiple sets of data; supports scheduling of test scenarios; and packages reusable technology-specific and domain-specific library functions, to bring you significant output.



Picture: Functioning of QEx Automation Platform

QEx Automation Platform functions in a module based approach. The various modules work as plug-ins with the automation module and can enable you to opt for one or all features at a time. This customization can be provided through selecting the specific layer for the feature required in case all the features are not required in a scenario.



Picture: QEx Automation Platform module based approach



HOW DOES IT BENEFIT YOU?

QEx Automation Platform enables you to:

- Achieve over 90% automation in many cases
- Reduce effort: possibility to achieve over 90% of the manual execution effort
- Reduce manual regression test effort by 70% to increase coverage of product areas and over 50% script preparation effort through reusability of test cases
- Reduce test automation development cycle time by over 30%
- Realize faster ROI on test automation due to reduced automated test development time
- Save over 40% in automation maintenance cost
- Reduce SDLC cost by over 20% through Automation
- Enable complete flexibility with script-free testing for non-programmers
- Reduce effect in cross browser testing through concurrent execution of automated tests across browsers

It also enables strategic decisions in the project through custom dashboards and analytics, governance of multi-person test cases and improved productivity through collaborative automation and lower maintenance cost through reusability of test cases.

BUSINESS CASE

Here's a quick study on how HCL provided a scalable solution offering significant reduction in testing efforts and reusability of test cases for a large German Bank.

Business challenges

- Understand the vast application and the domain quickly, without any proper artifacts
- Consolidate verification and validation activities to reduce dependency
- Share and reduce infrastructure costs; economically manage resources
- Create a flexible and scalable model in line with growing needs
- Standardize tools and follow a stringent testing methodology
- Reduce time-to-market and cost while maintaining quality and performance
- Reduce delays and productivity losses due to lack of automated workflow to coordinate between test environment services, build and deployment teams, development and testing



Test automation approach

- Identified set of complex, medium and simple test cases for each of the applications for QEx Automation Platform evaluation
- Identified regression set for automation – collaboration with business analysts, statistical analysis of application logs for most used features
- Prioritized identified automation test-set based on business impact into core and functional regression test suites
- Prepared automation strategy and identification of Automation customizations requirement
- Developed reusable components, automated test cases, test data sets and parameterizations

Benefits

- Achievement of more than 97% automation for majority of applications
- Reduction of over 90% of the manual execution effort
- Reduced manual regression test effort by 70%
- Reduction of 40-60% script preparation effort through reusable generic and business functions
- Reduced test data set-up time significantly by using automation scripts
- Reduction in release cycles for production releases and weekend outages
- Faster realization of ROI on test automation due to reduced automated test development time
- Multi-platform, device and technology testing using in-house frameworks

WHO ARE WE?

We are HCL's Business Assurance and Testing Services. HCL's BATS is a centralized testing organization that services all verticals and horizontals in an enterprise. It is a one-stop shop for Quality Assurance and deployment needs of global organizations.

HCL's Business Assurance and Testing Services Differentiators

- A consistent software testing approach that can reduce the time and cost of managing testing programs
- A set of test building blocks and repeatable methodology to increase efficiency and allows for customization and enhancement
- Metrics which provide integrated tracking and the foundation for continuous testing improvement
- Catalog-based pricing for testing services for standard test services to augment test factory model; through catalog-based services, client will get more insight into the nature of services, value that they would be getting with the services and finally enhanced predictability
- Risk-based testing approach to ensure test activities prioritization based on risk





APPLICATION
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MOBILITY



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CONTENT &
SOCIAL



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