Wipro's QC Accelerator Test Process Automation

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In today's world, Customers would prefer an enterprise test management system which would help to manage multiple projects test artefacts and thousands of users. This would enable them to measure the maturity of products which undergo testing during multiple testing releases and take appropriate decision measures based on test execution and defects details.

*HP's Test Management tool "**Quality Center (QC)**" is one of the popular commercial Test Management tools which have been used by more than 60% of the customers in their respective projects.*

*This white paper describes the Wipro developed solution "**QC Accelerator**" which will help to generate various customized Dashboard reports from HP's Test management Tool "**Quality Center(**QC)".*

Introduction

Testing plays a very crucial role before deploying the product/application in the product environment. The quality of testing has to be measured to ensure the product/application meets the necessary criteria. HP's "**Quality Center (QC)**" is one of the most popular Test Management Tools which would help to manage various test artefacts like Requirements, Test plans, Test cases and Defects etc. The dashboard feature of HP Quality center would provide various Testing metrics reports like Test execution coverage on a daily basis, critical defects that have been captured against different functionality etc. But the different types of Dashboard Reports that have to be generated vary from customer to customer. For Example, to track the efforts of resources for a particular activity EX: Test cases design and Test execution, Effectiveness of testing, Effectiveness of Testing teams and defect prediction models etc. require customized reporting. Based on various internal testing teams and customer demands, Wipro has come out with a utility called "**QC Accelerator**" to generate various customized Dashboard reports from HP QC.

QC Accelerator Solution Features

QC Accelerator is a utility developed by Wipro, which helps to generate the customized reports from HP Quality Center (HP ALM), in order to provide the senior management a snapshot view of the current status of the Testing Project (Program) under review. The reports are designed to give the leadership team a quick

understanding of the progress of development (in particular referring to the Testing status), thereby allowing them to take deployment decisions (GO/NO-GO) in the near future.

Below are the key drivers to develop this utility:

1. Custom reports generation based on various requirements.
2. Senior management personnel would prefer the consolidated test status in a single mouse click.

Salient features:

QC Dashboard Reports

QC Accelerator provides various out of box Dashboard Reports, Single and Cross- Projects Dashboard Reports. These Dashboard reports can be exported to Excel/PDF formats. They can also be sent via E-mail.

Export/Import functionality

Through QC Accelerator one can export test cases, defects and test results which are stored in QC to Excel. After performing the necessary modifications in excel the test cases containing steps will be updated and imported back to QC with the help of QCA. This support bulk uploads of test cases import to QC.

Defects Reporting

QC Accelerator will retrieve the failed test cases from QC and for the selected failed test cases, defects can be raised to QC. This feature will help the testing teams to save around 20% of testing efforts.

Executing QTP scripts from QC

QC Accelerator will fetch the QTP scripts which are integrated with QC for the selected Test sets. Selected QTP scripts can be executed directly from QC Accelerator.

QC Accelerator Architecture

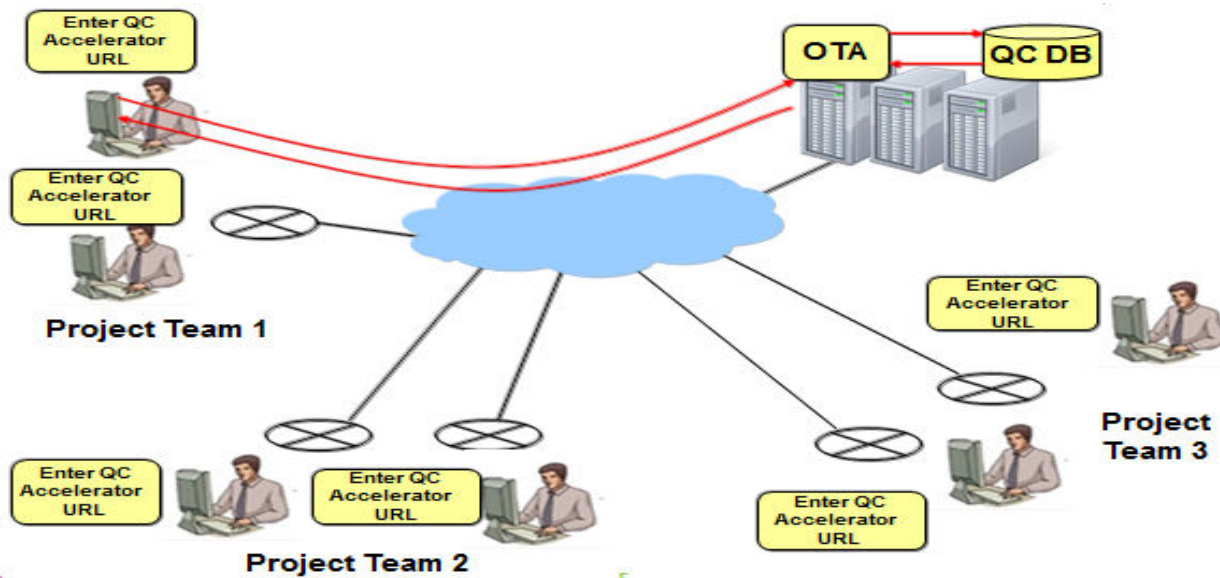The following diagram displays the QC Accelerator Architecture.

Fig 1: QC Accelerator

Technical details for a web based utility

Architecture	Web based application (ASP.Net / J2EE – based on client's needs)
Database	Allows 2 forms: Local DB to store cached data synchronized at regular intervals Real-time connectivity with ALM to provide real-time reports.
Connectivity	Uses OTA API (REST API) to connect to ALM Uses SQL queries to retrieve data directly from ALM database, for some complex reports

Client-side requirements	Web browser (IE8+, FireFox, Chrome)
Hosting requirements (Server side)	Web server Database server The exact specifics (such as OS & Web server type) are flexible and can be customized, based on customer requirements)

QC Accelerator Benefits

QC Accelerator offers various benefits to its users. These are:

- Customized Reports for Senior management

- Reduces manual efforts

- Automated Reports generation can be scheduled for various time intervals within a day.

- Reports can be exported to Excel or PDF

- Reports can be sent via E-mail

- Ease of use

Successful Implementation of QC Accelerator

Wipro has successfully implemented QC Accelerator for many leading organizations. Some of the case studies are mentioned below-

Customer	CustomizationScope	Benefits	Comments
Leading Insurance client in Europe	47 different single and cross projects reports customization Scheduler to automate the reports generation at different time intervals Export reports to Excel and PDF formats Send dashboard reports via E-mail	Better process to help client to generate uniform dashboard reports across projects. Cross Projects generation helps to compare the Test Execution, Defects status across projects. Automation of different Dashboard reports generation.	VB/.NET utility
Leading Bank in South Africa	15 different single and cross projects reports customization Export reports to Excel Send dashboard reports via E-mail	Better process to help client to generate uniform dashboard reports across projects. Cross Projects generation helps to compare the Test Execution, Defects status across projects.	VB/.NET utility
Leading Insurance client in UK	8 different single and cross projects reports customization Export reports to Excel Send dashboard	Better process to help client to generate uniform dashboard reports across projects. Cross Projects generation helps to compare the Test	VB/.NET utility

	reports via E-mail	Execution, Defects status across projects.	

Conclusion

QC Accelerator utility has proved to be an effective solution for different industry customers as seen from the case studies. The most significant benefit of using the tool is automated dashboard reports generation. Using this tool, various customized reports and other features like Import/Export of Test cases, defects can be performed.

About the Author

Tarun Bharti is a Senior Test Consultant in Wipro Technologies. He holds an B.E in Telecommunication Engineering from Bangalore University and MBA from St. Josephs College of Business Administration having around 19 years of industry experience.

About Wipro Technologies

Wipro is the first PCMM Level 5 and SEI CMMi Level 5 certified IT Services Company globally. Wipro provides comprehensive IT solutions and services (including Systems Integration, IS Outsourcing, Package Implementation, Software Application Development and Maintenance) and Research & Development Services (hardware and software design, development and implementation) to corporations globally.

Wipro's unique value proposition is further delivered through our pioneering offshore Outsourcing Model and stringent quality processes of SEI and Six Sigma.