

CASE STUDY

Continuous Integration Testing with Open Source Test Automation

About the Client

The Allstate Corporation (Client) is the largest publicly held personal lines property and casualty insurer in America. Client encompasses approximately 70,000 professionals made up of employees, agency owners and staff. Client is reinventing protection and retirement to help approximately 16 million households insure what they have today and better prepare for tomorrow.

**Business Need**

One of the development groups is responsible for the development and maintenance of a custom Java application. About 400 developers are geographically located across the globe working on different lines of businesses (auto, property, boat, motorcycle etc.). The biggest challenge was the code merges and code conflicts affecting the application functionality.

The process developer team perform functional unit testing for the areas they are responsible, but really does not address the issue. Junits are also executed during each new build, but they do not emulate with real interface, hence cannot find functional conflicts or integration issues. As a result QA was confronted with the functional and integration issues. Client wanted to introduce continuous Integration (CI) Testing to improve the code quality before it rolls out to QA.

Microexcel's Solution & Approach

A complete end-to-end solution is developed using open source components like Selenium, ANT and Jenkins, giving Client the ability to Implement Continuous Integration (CI) Test Capability as part of the Software Development discipline. This is a one of a kind solution where in non-technical resources such as business analysts and manual testers can develop and maintain test cases. Developers can also build their unit test plans as they use to in an excel sheet. Developed solution will take these functional tests as an input and will run the tests in an automated fashion, no further coding or scripting required.

An end-to-end smoke test bed was developed by studying application functionality, business rule combinations and various integration points across the system.

Current State

The Smoke test bed triggers automatically on Jenkins server each time once the application build is successfully complete. In addition to this all the functional unit test for that specific release/build will be triggered. This execution takes place on multiple browsers (IE, Firefox and Chrome) simultaneously. Test execution results will be published/ emailed to the entire team. The biggest advantage being the entire test suite version controlled; smoke test will run across all the branches of code and functional unit tests can run on specific branch of code.



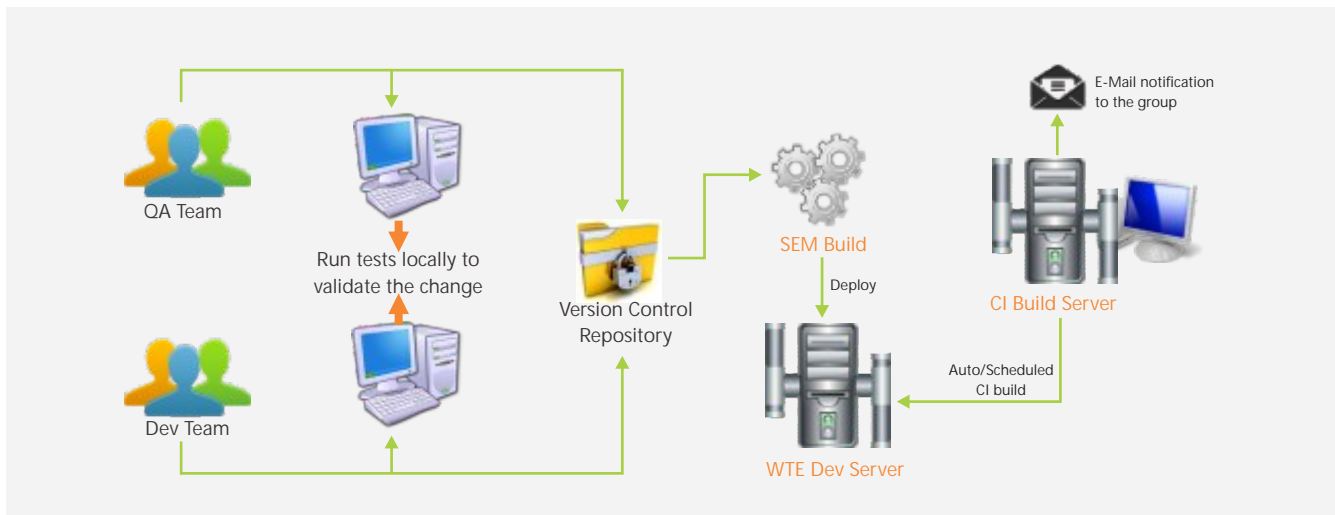
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Continuous Integration (CI) test process step-by-step

- The solution developed gives an ability to a developer, to quickly create an excel based unit test script (based on Unit Test Plan – UTP) and execute it in an automated fashion against their newly developed code locally ensuring that the system meets all the requirements, increasing the focus on quality.
- Once the test completes successfully, developers will check in the newly developed code to the version control repository along with the UI based unit test.
- Once the application build is created successfully with all the newly developed merged code, the CI server will trigger all the unit tests (created by all developers) validating the code deployed. Results will be published/emailed to the respective team members.
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Benefits

- ✓ Zero total cost of ownership for the tools without compromising on the features.
- ✓ Easy to construct test cases and do not require any knowledge of Java or Selenium, just the knowledge of Excel.
- ✓ Saves the Amount of time developers spend on functional unit testing the application (add the mix of multi browsers to that).
- ✓ Improves the code quality significantly lowering the overall cost for fixing the defect. Anomalies get notified to the developer early in development life cycle while code is fresh in his/her mind
- ✓ Test framework developed can also be leveraged for Unit, Integration, Regression testing and User Acceptance Testing.
- ✓ The Solution is capable of testing Web UI, Android platform for Mobile Web UI and Mobile Apps, Web Services, Database Testing and Testing on Unix File System.

To learn more about how you can benefit from our IT expertise and professional services, please visit our website www.microexcel.com or send us an email to sales@microexcel.com



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