Annual Corporate Governance Report

Testing

1. Types of Tests

There are various standard classifications of tests which are appropriate for use when testing a AEM project.

Units Tests

Tests (usually) made by the development team to ensure that the individual elements behave correctly - albeit in isolation.

Integration Tests

Tests modules when combined. These tests are made after Unit Testing, but before System Testing.

Smoke Tests

These are quick-and-dirty tests used to prove that the software is running and high-level functionality is available. The details are not tested.

Functional Tests

These are used to test the functionality of the software. A series of tests will be designed to cover all functional details, with both expected and unexpected
and/or erroneous input.

Black-box tests are functional tests of a complete unit / component / module, performed without knowledge of the internal workings of the element in question.

System Tests

These test the entire system once it has been fully integrated and installed on a
suitable platform.

They test the functionality on a black-box basis.

Performance Tests

Performance tests are crucial when testing AEM.

They are used to illustrate the performance under differing conditions:

Normal

Conditions which the site will experience for say 90% of the time. For example, when only a proportion of the authors are using the system.

Peak

Conditions which will be experienced for a proportionally short time due to special circumstances; for example, when all authors use the system concurrently or when new content is published and a increased number of visitors view your site.

Extreme

Can be used to emulate the performance forecast when new, extremely interesting content is published on your website. Then an extreme peak may be seen - though this may not always be fully predictable.

These circumstances are sometimes seen when tickets for specific events are made available, or a much-awaited website is published for the first time.

The results are then used to tune the application.

Stress Tests

Stress tests are made to confirm how a component or application behaves under extreme conditions. In particular these tests are used to show how behavior deteriorates, when the element will fail - and how.

Regression Tests

Regression tests are used to confirm that functionality already proven in a previous release of the software is still operating correctly.

Regression Tests are good candidates for automation (if possible) to ensure they can be repeated quickly and consistently.

Acceptance Tests

Acceptance Tests are a special category as they are used to indicate the customer's acceptance of the project.

The list of acceptance tests may contain a combination of tests from

the various categories above, and are selected to verify that the project fulfils the customer's requirements

2. Automated Testing Tools / Framework

Unit Tests : Junit, Mockito, Sling OSGi Mocks.

UI tests : Selenium runs tests in a real browser, hence, tests scripts are cross-platform and crossbrowser.

Web performance testing : Apache JMeter is recommended as it is free and satisfy most use cases. No additional server is required to be provisioned to simulate load.

3. Security Testing

Most of the time security testing is done by a 3rd party vendor to provide neutral feedback and running proprietary and sophisticated tools. The tools listed below are some tools which can be used to find vulnerabilities in web applications