Highlights from a recent webcast on continuous testing

HOW TO DO CONTINUOUS LOAD TESTING WITH CLOUDTEST AND JENKINS

Automating the hard parts of testing DevOps cycles can be made easier by deploying SOASTA CloudTest and open source Jenkins-based CloudBees.

Two key challenges to continuous load testing are provisioning a test system to handle the load and accessing load generators to drive the traffic.

The need to do load testing early in the development cycle and continuously is obvious to anyone who has read the news of high-profile application failures, such as the initial rollout of HealthCare.gov. Too often in the past, crucial testing has not been done. The reason for this lapse in quality assurance is that load testing is difficult. It becomes even more difficult as organizations adopt DevOps practices for Web and mobile apps requiring continuous test cycles.

SOASTA, the leader in mobile and cloud testing, and CloudBees, the home of Jenkins-based solutions for deploying, building, and managing applications in the cloud, provide combined technologies enabling delivery of continuous load testing for Web and mobile applications.

Why Jenkins is important to test automation

Jenkins, an open-source project written in Java, was started in 2004 by Kohsuke Kawaguchi, CTO at CloudBees. Currently there are more than 100,000 active Jenkins installations globally supported by a community that has written more than 1,000 plugins.

Jenkins is a server-based system running in servlet containers such as Apache Tomcat. It supports software configuration management (SCM) tools for tracking and controlling software changes including:

- AccuRev
- CVS
- Subversion
- Git
- Mercurial
- Perforce
- Clearcase
- RTC

Jenkins allows development teams to execute in projects including those based on:

- Apache Ant
- Apache Maven
- Shell scripts
- Windows batch commands

Jenkins open-source continuous delivery software accelerates the software development process including automated testing. With Jenkins, testing tools can be configured to speed load testing where DevOps practices are producing updates to apps weekly or even more frequently. SOASTA and CloudBees are now providing quality assurance professionals with an automated solution that integrates cloud-based load testing tools in a Jenkins implementation.

Building a test environment based on Jenkins

Jenkins includes a task that creates a CloudBees test environment. The test environment can be as small or large as needed, depending on the scale of the application and the stage of the development process. As development progresses, the test environment is easily expanded. With the CloudBees environment in place, test professionals can run the SOASTA cloud tests directly against that environment. The test results move into the Jenkins infrastructure, providing detailed performance metrics from CloudTest. From the Jenkins console, managers can view the performance baseline and see how the entire quality assurance team is doing against a single performance metric to oversee daily management of testing.

SOASTA provides three automated testing tools that send results to the Cloudbees Jenkins console:

- **CloudTest** rapidly builds realistic test scenarios using real user data so tests can be run, analyzed and repairs made quickly.

■ **TouchTest** provides a solution by giving quality assurance professionals an automated tool for continuous mobile app testing.

The combination of the CloudTest tools with Jenkins and Cloudbees provides flexibility to test applications regardless of the development framework.

■ **mPulse** helps quality assurance professionals understand the immediate impact of user performance on transaction volume, revenue, conversions or other key business metrics.

CloudTest's visual environment

CloudTest's visual test environment and real-time analytics test your website, mobile app and API backend to provide a streaming view of all performance data while tests run—from back-end systems to front end performance. It allows quality assurance professionals to make performance testing a part of their continuous integration strategy. CloudTest integrates easily with existing automation tools. With CloudTest it is easy to measure every build and release of a Website and mobile app against baseline results. Low-level performance tests catch performance issues earlier in the development cycle, long before they escape into production where the impact is greater and cost to fix is higher.

TouchTest continuous mobile app testing

Using the TouchTest Clip Creator tool, testers can easily use an iPhone to create a new test script by recording every click and entry as the tester interacts with an app on a mobile device.

Once the test script is completed in Clip Creator, TouchTest operating in the cloud runs the test. Users can modify tests so they are screen-aware of running in one device mode or different orientations or even against different devices like an iPad versus an iPhone.

In addition to functionally testing how the application runs in a user scenario, TouchTest also collects vital data about how the app is impacting the device. This includes memory usage and battery drain, which are important considerations because users do not want apps that negatively impact their phone or tablet.

mPulse monitoring the user experience

mPulse is the only real user monitoring (RUM) solution that provides holistic, detailed insight into the relationship between online performance and real user behavior—as it is happening—so quality assurance professionals can better understand how issues or changes with a mobile app will impact business.

Because up to 90% of online performance issues are caused by frontend processing problems, not the performance of back-end systems, SOASTA built mPulse to be the solution for deeply analyzing user experience with mobile app performance, both in real time and over time. This is critical because users experiencing slow response times often abandon apps and may move to one offered by a competitor.

To gage the total user experience with an app now and over time, un-sampled datasets are collected, processed and retained. The integration and correlation of real, not simulated, business data helps quality assurance professionals prioritize actions and answer important questions such as: What was the peak revenue minute today? What are the most successful user paths? How does one second of latency impact revenue?

CloudTest with Jenkins and Cloudbees: A powerful testing combo

For quality assurance professionals the combination of the CloudTest tools with Jenkins and Cloudbees provides flexibility to test applications regardless of the frameworks development teams are using. Testers can take a build and put it into a continuous integration framework whether developers are using Visual Studio, Eclipse, Salesforce or other frameworks. With load testing becoming critically important as DevOps speed the development and deployment of mobile apps and updates, Jenkins and CloudTest deployed in the cloud on a CloudsBees infrastructure is the solution that meets the demand for load testing.