

# The New Performance Testing Paradigm

*QA InfoTech delivers powerful, yet cost effective testing techniques by clubbing cloud based infrastructure with enhanced open source tools*

Excellent internet bandwidth coupled with advances in application servers and hosting options have helped businesses prepare better for the performance aspects of their applications. But the nuances of how accurately we measure an application’s response, network latency to simulate peak loads from real -world geographically dispersed locations, complexity in the product architecture, capacity management, aggressive product release cycles and optimum investment in performance testing tools and infrastructure, continue to challenge product companies. Using enhanced Open Source tools and the Cloud is an answer to all these challenges.

The mere license costs and expenses associated with commercial performance tools encumber small, medium and sometimes even large applications which are tied on budget. The open source community in the recent past has seen advances with tools like JMeter, OpenSTA and Web Load, all of which greatly alleviate the existing challenges. These tools have been updated over the years and when leveraged specific to the needs of the system under test, give the commercial, off the shelf products a run for their money. Talking of trade-offs, the open source tools have a few technical limitations when compared to their commercial counterparts, which when addressed, prove to be very

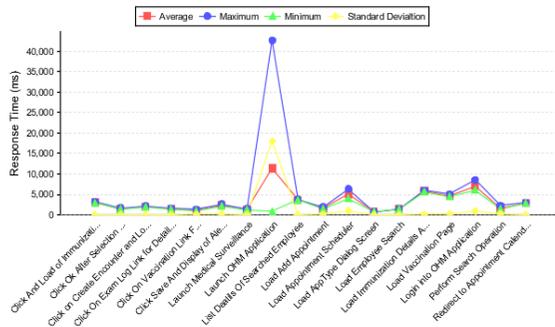


valuable in the performance testing efforts.

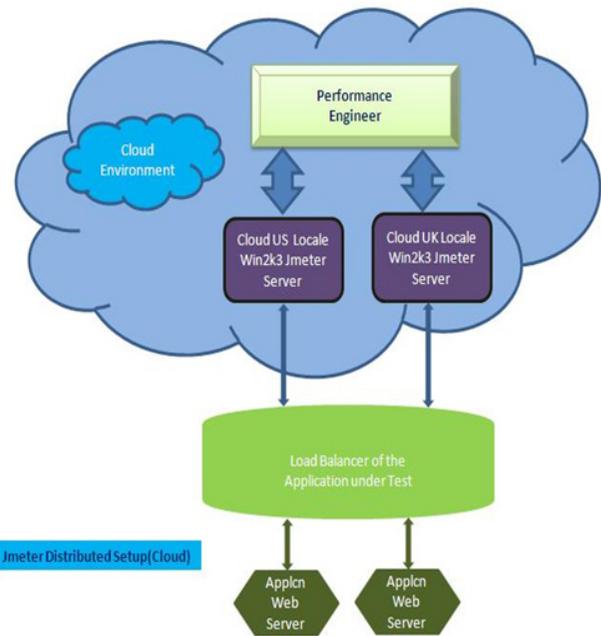
Besides the open source tools, another technology to leverage in reducing the overall performance test effort time and costs, is the Cloud. The reliability, availability and scalability of the test infrastructure on the cloud are worth to bank on. Cloud offers services to the end users on a pay

**QA InfoTech** Your Software Testing Partner **Load Test Results Page Load Time**

Test Start Time: Wed, 8 Sep 2010 13:33:13 +0530 Maximum User Load: 2  
 Test End Time: Wed, 8 Sep 2010 13:46:52 +0530



Request Name	Bytes Sent	Minimum	Maximum	Average	Std
Click And Load of Immunization Page	38903	2993	3192	3078	83
Click Ok After Selection On AppType	36353	1388	1615	1474	90
Click on Create Encounter and Load	33145	1905	2089	2005	66



Performance Test using Cloud

per use or lease model. Depending on what the service is, a cloud could offer ‘Software as a Service (SaaS)’, ‘Platform as a Service (PaaS)’ or ‘Infrastructure as a Service (IaaS)’. Of specific interest for Test architecture is “Infrastructure as a Service”, where one connects to machines on the cloud and uses them for load generation. Once booted, these

preconfigured images with the required set of software simulate thousands of users on the application under test, instantaneously. Security concerns around systems being exposed through the cloud are done away with extending one's own infrastructure through a Virtual Private Cloud.

At QA InfoTech, JMeter has been engineered for better reporting and monitoring with the expertise of the in-house R&D team. The extended JMeter incorporates capabilities of Jasper and Crystal Reporting APIs' for efficient and detailed reporting of the load test results and addition of SNMP monitoring plug-in. This when clubbed with the capability of cloud computing for load generation has proved to be an effective performance testing solution for products and customers from all over the globe. Measurable ROI from such a solution include: Doing away with expensive licenses, commercial hardware load generators and 24X7 hardware maintenance and support.

This engineering technique at QA InfoTech has helped our customers' performance tune some of their most complex systems such as conferencing products with heavy audio and video streaming over secured protocols. Other notable achievements include: real world traffic simulation from different geographies, performance engineering on products developed in an agile life cycle, optimized performance testing efforts on prioritized combination of operating systems and browsers, all of which have been done at significantly lower costs compared to use of commercial tools.

QA InfoTech is an Independent software testing firm headquartered in India with offices in the US.

For more details, case studies and other performance engineering methodologies, we can be reached at [info@qainfotech.com](mailto:info@qainfotech.com)

## Sample Report generated

### Load Test 1 : 1000 VUsers : Pre-Prod Environment

#### In Conclusion

- Load test was declared failed as response times for login and launch were greater than 30 seconds for 90% of requests.
- However, User actions and document conversion was below 3 seconds.
- We have also verified the response time for login, manually, which was in the ballpark of 20 to 30 seconds.

Test Result	Fail
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Groups	Response Time Criteria(Sec)
Launch	30.365
Login	32.345
User Actions	2.455
Document Conversion	1.233
Logout	0.233

Pre-Prod 1000 VUsers Load Test Run1  
Date: August 27, 2010

#### Load Runs Information:

- **Ramp UP Information:** 1 VUser per 1 Second(s)
- **Total Number of VUsers:** 1000
- **Duration:** 1 hour(s)
- **Start Time:** 15:00 hrs IST
- **Total Duration:** 30 minutes (excluding ramp up/ ramp down)

**Scenario Covered:** Please find below the VUser distribution of moderator and participant executing each scenario

Functionality	No. of Moderators (Conference)	No. of Participants	Total Strength
DocumentShare	14	326	340
Invite	114	NA	114
AppShare	5	125	130
Chat	8	200	208
Annotation	8	225	208

Legend	Optimum time values for different user experiences while executing various Functionalities in the Application
Load Test Pass/ Perfect User Experience	90% of the samples get a response time of <=5 seconds
Load Test Pass with Few Exceptions/ Ok User Experience	90% of the samples get a response time of > 5 and <=12 seconds OR 30% of the samples get a response time of > 9 seconds
Load Test Fail/ Poor User Experience	90% of the samples get a response time of > 12 seconds OR 50% of the samples get a response time of > 9 seconds

Figure: Legend which demarcates Test Results