Case Study - Client/Product Information:

Client's product offers a personal learning experience that combines all digital assets – readings, multimedia, activities, and assessments— into a singular learning path to improve student outcomes.

Challenges/Requirements on the product:

Performance Team was introduced early in the Agile Development Cycle, where system components were loosely coupled and development/design was in the initial stages. Managing an Agile Performance Test Cycle essentially involved:

- Carrying out performance unit testing by pairing performance engineers with development team
- Assess and configure new hardware by pairing performance engineers with administrators
- Script individual stand alone pieces of functionality to simulate multi user behavior
- Measure response times, collect data for scalability and capacity planning
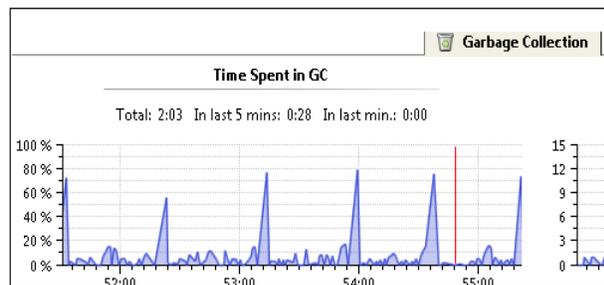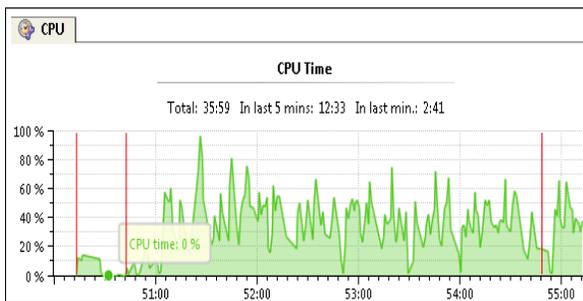
QA InfoTech Solution:

- Simulated standalone functionality components, by breaking scripting into independent set of actions for each component in the application
- Performance Unit Tests designed after thorough analysis of the application under development
- Used JMeter as the scripting tool, with stand alone Java code also written for modules to be tested
- Load generation done using UNIX, Windows server2003 as well as through Cloud machines to check for inward/outward network latencies

Value Add:

- Successfully resolved numerous performance glitches in the code working in close association with development teams
- Optimally decide various components of hardware servers including implementation of cache servers in the deployment model
- Load test run through the various stages of the agile development cycle, with performance numbers reported for every deployment. With continuous improvements and meeting milestones, summer and spring releases were launched on time without any glitches
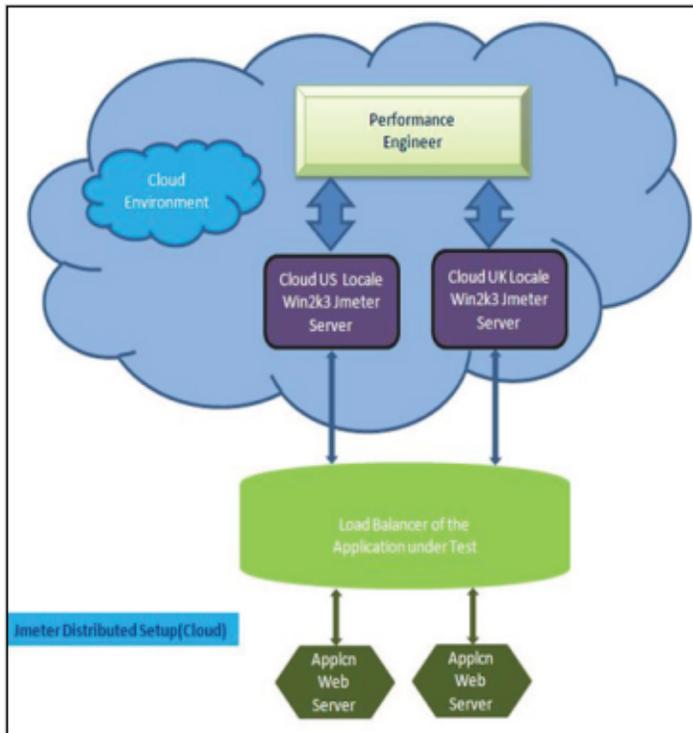
Fig I: Diagrammatic view of how application load is created from different geographies utilizing Test labs in the Cloud.

Fig II: Monitoring and Analyzing CPU/GC behavior in parallel to Load Test Execution using monitoring tools (YourKit snapshot here), for identifying performance bottlenecks
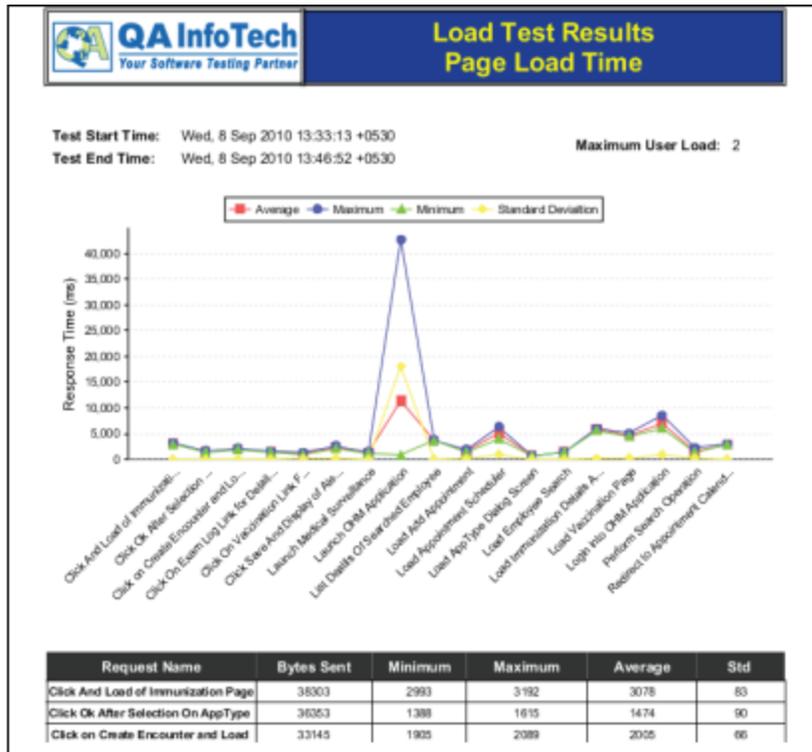
Fig III: Sample report generated using JMeter and QA InfoTech's reporting plug-in.