

## THE PROBLEM

Our client is one of the largest ANZ online store selling books, music, movies, games and toys. This case study covers how Kualitatem carried out performance testing for the application to ensure stability and robustness.

It also shares the Kualitatem experience to provide independent software quality assurance services using innovative framework, latest standards and multiple tools. Our team gelled into client's development environment and worked as onsite team to assure that timely updates are defect free when the website goes live.

Client was an ANZ online store and wanted us to carry out Performance Testing for up to 20,000 users. Client's requirement was to find a reliable and cost effective Performance Testing tool to satisfy the performance measures implemented within the system. Kualitatem's QA team followed a step by step process for successfully carrying out Performance Testing and to check the stability of the application as specified in the use cases and business scenarios.

## THE APPROACH

Webload was selected as the tool for performance testing as specified by the client. A comprehensive test plan document and bug reporting template were created by the QA team and reviewed by the client. Finally, the test environment was designed and set up and testing commenced.

All bugs were reported were reported on bi-weekly basis. Besides Performance testing, Kualitatem QA team also tested business scenarios to evaluate application stability. Zephyr was used to prepare test cases based on business scenarios. The test environment was built up of development servers, test servers and live servers. Bugs and issues were reported through 'Redmine', an open source, web-based project management and bug-tracking tool selected by the client.

The steps that were followed during planning of Performance Testing are illustrated in figure 1:

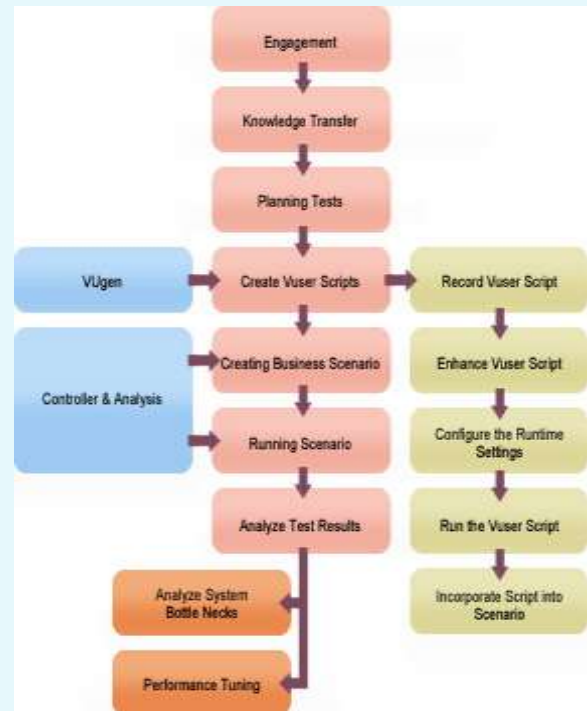


Figure 1

## SUMMARY

All scenarios' scripts were recorded and updated as per requirements. Each scenario had run individually across the tool for 20,000 users in an incremental manner. The load size started from 5,000 and concluded at 20,000.

Initially, the application Response Time, Throughput, Round Time and Hits per Second had been noted and analyzed by generating the load of 10,000 to 20,000 users.

Response time for the scenario of 'Search' on average is constant but at every instant whenever the number of users are randomly increased the response time has been increased by 1.312 sec to 7.953 sec. The average response time was 3.102 sec on the average minimum taken. The poor response time achieved has been 7.953 sec whenever the load on the server has been increased.

The throughput on the whole scenario has been low ranging from 38390.100 to 10597.400 bytes per sec. The numerical part showed better values at the end of the scenarios by the value 6033.258 bytes per sec.

The hits per second for the website across all scenarios' increased as the number of virtual users increased and that affected the overall throughput.

Rigorous business scenario changes were catered comprehensively in test plans and test cases and strict reporting and execution guidelines were followed to minimize any process gaps. The process also ended up in thorough documentation produced by Kualitatem team while client was busy enhancing the application's functionality.