

SMART GAMING FOR A SMARTER FUTURE



Superlative Gaming is creating an ecosystem that will assist current and future gamers in shattering the myth that playing video games is merely another pastime. Our approach to skill-based gaming allows holistic growth, both as a player and as an individual, for everyone from professional poker players to the upcoming chess grandmaster.

Project Summary

Name: **Superlative Gaming**

Domain: **Digital Gaming Technology**

Product Name: **PokerNxt**

Users: **Online Gamers**

The KiwiQA approach

KiwiQA specializes in load and performance testing to ensure the usability of client's software or app. Our Performance projects utilize K-SPARC, a proprietary, five-stage framework. K-SPARC has been tested and proven in many projects, with a focus on throughput and application load. The framework covers all aspects of performance testing, from identifying requirements to producing a test execution summary report.

From single users to **full-scale performance tests.**

Before conducting the full-scale performance tests, the APIs were tested with a single user (probing test) to identify any issues with respect to data and high response time. These issues were addressed before proceeding with the performance tests. Two rounds of tests were conducted, with the first round comprising two cycles of testing with a load of 500 virtual users. In the first cycle of round 1, tests were conducted with the default settings on the application and database servers. The results showed high response times for all APIs, ranging from 5 to 20 seconds, and high CPU and memory utilization on both the application and database servers.

TAKING A STEP-BY-STEP APPROACH TO ADDRESSING ISSUES

Problem brief to be resolved

The following issues were sought after by the client from the test-partner to be solved:

- SG wants to ensure that the APIs developed for PokerNxt perform well when accessed by a large number of users through mobile applications.



- SG is concerned about the response time of the APIs and wants to ensure that they can withstand a load of 500 concurrent users.

- SG has commissioned KiwiQA to perform performance tests on the APIs.



ACCOMPLISHING THE INTENDED RESULTS

- The first round testing the application on the existing environment and the second round testing the application after identified issues were fixed and other changes were implemented.
- The tests were performed on a production replica environment using the K-SPARC performance testing framework.

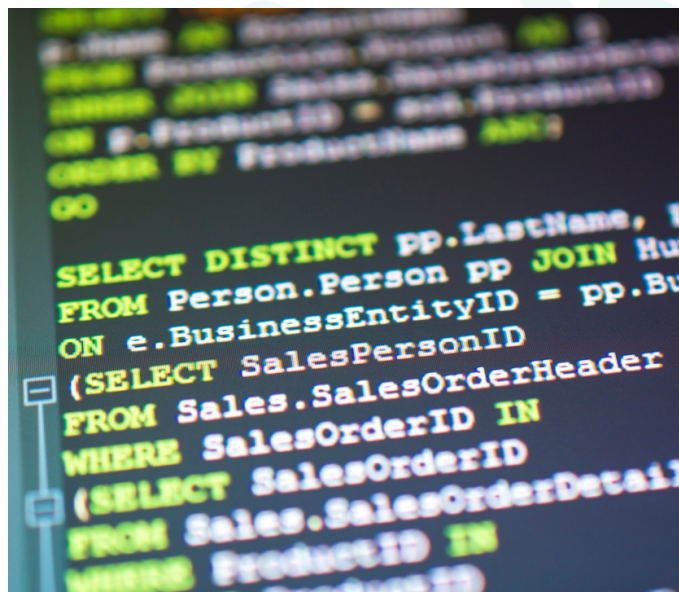


- Performance test assets were created using JMeter 5.3 for 51 APIs (9 for the GameArea & 42 for the PlayerArea) of PokerNxt.
- Baseline tests were conducted for API modules at different load levels using Redline 13, with infrastructure monitoring using NewRelic APM.
- Analyzed results for performance issues and benchmarked for a load of 500 virtual users.

WHAT WE ACHIEVED

Round 1 Cycle 2

With settings changed on both Application and Database server, Round-Robin load balancing for Application Server and cloud instance on the Database Server Changed, though the number of errors reduced the response time of all the APIs along with server metrics were same as observed in Cycle 1



Round 2

APIs interaction with 3rd parties were rectified, SQL Queries were fine tuned, issues with deployments fixed along with architectural changes by segregating GameEngine APIs and PlayerArea APIs with proper percentage mix between GameEngine APIs and PlayerArea incorporated. Tests were executed, Response time less than a second for all APIs were observed with 3% and 35% CPU utilization observed on Application and Database Servers.