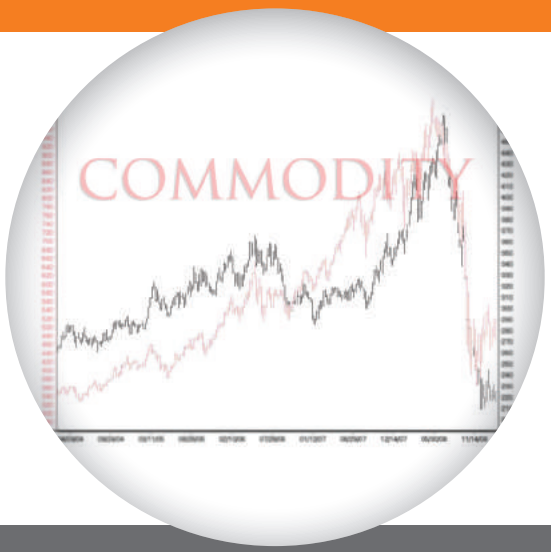
CASE STUDY

Third-Party LSPS Evaluation Ensures Successful Product Deployment



STAG's evaluation of a eCommodity finance application for load, performance, and scalability among concurrent users for an IT services company ensures successful deployment of the product at a leading commercial bank in India.

Domain - Banking and Finance

Technology - Web, Java
Tools - JMeter

CUSTOMER AND PRODUCT BACKGROUND

The customer is an IT services company focused on designing, developing, and maintaining customized business solutions in the domains of finance, travel, and compliance management.

The product in question is an integrated Web-based solution for banks in the commodity finance segment covering the lifecycle of commercial operations – account sourcing, operations, monitoring and control, recovery management, audit, and closure through repayment.

PROBLEM STATEMENT

The customer was looking for an independent expert to evaluate the product's performance before deploying it at their client's end.

The performance of the product was suspect, with a large number of users accessing it. Hence, there was a demand from their client for a third party evaluation of the product for concurrency among 600 users, a check of the system's load handling capacity – by replicating 'third' year usage – and also of its endurance and stress capability.

SOLUTION

STAG team devised an automation solution to include the following:

Data records created: 40000 loan booking records and 50000 loan liquidation records

New set of test cases automated by the client QA team: 120

Deriving the Operational Profile

The team captured the key operations for the test, the arrival rates for each of these operations, the number of concurrent users for each operation, and the number of 'think times' for each operation to ensure that the test simulation was realistic.

Script Development

The team then developed scripts for 40 operations that were identified. The objective was to use the same scripts for both data population and test execution. The team adopted a data driven approach to drive the operations with a unique and relevant set of data. Workarounds were developed for tool limitations like uploading and viewing images from the Java applet that gets loaded into the Web application.

Test Data Population

After interactions with the customer, the team identified the test data sets to be populated. One of the key objectives of this exercise was to avoid creation of incorrect data sets that would lead to incorrect results. Hence, it was important to understand the impact of creating the required data sets for the actual test. Issues related to the database were fixed, thereby resolving the problem of performance deadlock.

Test Execution

Load and performance tests were conducted for three different combinations of operations, with the mix of the number of operations being different for each combination. This was done to simulate the peak load for specific operations in each combination. An eight-hour endurance test was conducted to simulate the one-month usage of the system, with the intention of finding any potential memory leaks. The team also conducted a stress test by increasing the user think times and the number of concurrent users.

Analysis

The STAG team modified the existing framework to bring in flexibility to scale and support new features or to maintain the existing libraries to support the changes in the application. As a result, the client QA team was able to successfully automate a new set of 120 test cases with a 50% reduction in effort.

Besides, the team also addressed issues related to configuration on web server, fine-tuned database queries and open connections, and tweaked search filter options for report generation, that helped improve the end-user experience.

OUTCOME AND VALUE ADDITIONS

The automation solution provided by the STAG team helped uncover many performance issues in the existing system and fix them.

The product was certified to handle 600 concurrent users for the 'third year' usage and all performance issues were resolved as well. Along with this, recommendations were also made that largely enhanced the customer's release confidence to successfully deploy the product at their client end.

Visit: www.stagsoftware.com | E-mail: marketing@stagsoftware.com
Bangalore: +91 80 28495574 / 75