AUDITime

CASE STUDY

A LEADING MANUFACTURER AND SERVICER FOR FUEL DISPENSING EQUIPMENT

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1.0 Snapshot

1.1 Industry Type

Manufacturer and servicer for fuel dispensing equipment.

1.2 Business Challenges

- To identify the bottlenecks, validate hardware architecture and simulate the live environment and predict response times.
- The business challenge was to simulate and capture response time under various user loads i.e. 100, 150, 200, 250, 300 and 350 users.
- Since the activity was not part of budgeted activities, the solution had to be cost effective.

1.3 AUDITime Solution

- The system architecture was studied & documented.
- Critical business processes and business transactions were identified in the application.
- Typical usage patterns were documented.
- The result sets were compared & analyzed to pinpoint bottlenecks.

1.4 Business Benefits

- Performance testing was executed without expensive commercial tools.
- TCO for the customer was reduced drastically by the usage of open source Technologies.
- Performance testing as a process was effectively established.
- Other areas which needed optimization were also identified & documented.
- No further improvement in CPU and Memory of the servers was required thereby saving expenses associated with costly upgrades.
- Huge upfront infrastructure cost was reduced due to right hardware sizing.
- Reduction of people dependency for testing.

2.0 Client's Requirement Overview

The client is one of the world's leading manufacturers and servicers of fuel dispensing equipment. The application goal was to provide a basic online (Sale & Stock) monitoring Website (which could be enhanced in the future). The target audience would initially be existing clients from India who would monitor Quality through Quantity (Sale & Stock) control at an RO. The system was a complete web based application with TCP/IP interface with all DCM and ASM (which might

go to around 10,000) and HTTP interface with all the users.

3.0 Business Challenges

The application performance and scalability were vital aspects that had to be measured. Hence the job of identifying the bottlenecks and their root cause was essential and challenging. That apart, the capacity requirements of the application in terms of hardware and bandwidth for connectivity were essential parts of this phase of the project. The major challenge was to identify bottlenecks, validate hardware architecture and simulate the live environment and predict response times.

4.0 Technology Challenges

The applications used a lot of custom controls which made it very difficult to automate the testing process using standard test automation tools. Applicability of low cost performance testing tools available off the shelf was not conducive as the results were not structured enough to reflect the performance parameters required to certify the product. Due to varied platforms collection of resource utilization, statistics and performance data through a manual process was time consuming. Collation of this data in a structured and reportable format was also a tedious and time consuming task.

5.0 AUDITime's Solution

The team of testers studied the application to gain a complete understanding of the system and documented the same. The system architecture was studied & documented. Critical business processes and business transactions were identified in the application. Typical usage patterns were documented to simulate the live environment as closely as possible. The application usage scenarios were recorded for a single user for the transactions identified. These scenarios were used for injecting load onto the application. The resource profiling at the application server and the database server was done. Scripts created for various activities to be used as part of load injection were identified and this

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enabled data pooling for diverse user behavior. The results gathered were analyzed for breakdown in the application response times and were seen in comparison with resource utilization on the application server and the database server. After initial tests some changes to the application design were suggested. A second round of performance tests was then run on the application. The two result sets were compared & analyzed to pinpoint bottlenecks. Using the tool, the scripts were recorded and engineered to run for multiple users. Data pools were used to provide unique and actual data for each virtual user, thus simulating the live environment for testing. The team tested and engineered each script to run with multiple users. Six different scripts were created to simulate different user behaviors and the load was injected into the application. Special techniques were used for data preparation. Once all the scripts were executed, the team captured the entire data and performed a comparative analysis, wherein user response time, application Throughput, Memory utilization, CPU utilization etc. were analyzed and reported.

6.0 About AUDITime

AUDITime is a quality management specialist with expertise on software quality assurance. Our company includes experts in areas of banking, financial services, insurance, risk and compliance, technology effectiveness, investigations and quality assurance. Our consultants have deep insights on par with the thought leaders of the world. We are more accessible, adept and cost effective than any competitor in delivering value for our clients.

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