Case Study

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Performance Testing

CFIndustries®

Industry: Fertilizer Manufacturing

About the Client

CF Industries is a global leader in fertilizer manufacturing and distribution, the second largest nitrogen fertilizer producer in the world and the third largest phosphate fertilizer producer among public companies. CF Industries owns and operates world-scale nitrogen and phosphate plants and serves agricultural and industrial customers through its best-in-class distribution system.

The company is headquartered in Deerfield, IL, a suburb of Chicago. Through its CF Industries, Inc. subsidiary, it operates seven nitrogen fertilizer manufacturing complexes in the central U.S. region and Canada.

Goal

Conduct performance testing to validate performance for the SAP portal transactions and key ECC business transactions meets the SLA by simulating the peak load volume.

Environment

Client recently completed the implementation of ECC 7.0 and SAP Web portal through PI (Process Interface) interface. SAP web portal is customized for OTC and BI Reports using ABAP Web Dynepro. Web Dynpro for ABAP is SAP's new standard UI technology for developing user interfaces in the ABAP environment. It combines a rendering-independent UI programming model with the well-known features of a ABAP server environment. . ECC 7.0 system has various integration points to external and internal applications through PI interface.

Technology Stack:

SAP ECC 7.0, SQL Server, SAP NetWeaver, and legacy and interface applications with VB 6.0 and Oracle database, BI/BW.

SAP Partner

Microexcel Inc,
400 Plaza Drive, 1st Floor
Secaucus, NJ 07096, USA
Phone : 201 866 6789
Fax : 201 221 7825
sales@microexcel.com
www.microexcel.com

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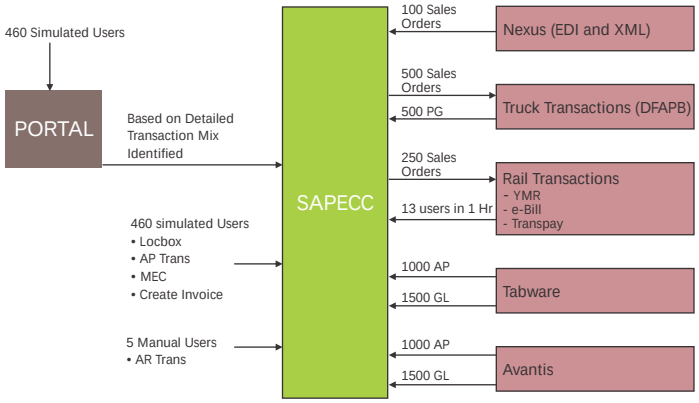
Challenges

- Client did not have any benchmarks on the custom coding for Portal and the hardware capacity needed for the production rollout.
- Client wanted to reassure the hardware slicing they did is accurate and will support after go live.
- Client also wanted to simulate the outgoing load to the vendor/legacy applications via PI interface and incoming load from vendor along with AR/AP transaction for various plant locations from legacy applications. Some of the batch jobs (like batch billing and BI extract) which run during day time which could also impact the performance. Some of the activities which take on the periodic basis, like Month End Close were also identified as potential.
- Custom code was written for the web portal and even though most of the transactions were giving acceptable performance they wanted to identify the behavior under their actual peak load.

Solution

- Key business transactions from SAP portal and ECC are identified describing the scope for performance testing. SLA's were defined for the transactions by taking the input from the business.
- Series of tests/Scenarios were planned with the mix of ECC and Portal transactions in order to achieve the target load, isolate the issues and to identify the bottlenecks.
- Another set of scenarios were prepared in order to baseline each interface. Staggered scenarios were prepared in order to get baseline with combination of interfaces.
- During these test/Scenario runs problematic transactions were identified and separate isolated tests were planned to baseline individual transactions with targeted number of transactions and number of users.
- Code fix, configuration changes were identified and fixed. Isolated tests were rerun after the transport to confirm the improvements by comparing the results with baseline.



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Benefits

Financial benefits are directly proportional to efficiency, reliability and Speed. Performance issues can result into service interruption, loss in sales revenue and low productivity.

- Capacity planning – helped the client in building the correct environment with the right set of hardware saving money on additional hardware costs.
- Conducted network impact analysis by performing series of performance/stress tests which helped client identify the potential network related bandwidth issues.
- Series of performance/stress tests helped client identify the bottlenecks with key business transactions.
- End-to-End performance tests captured the functional and process related issues which were only reproducible when the system is under load.
- Provided the architects and network engineering team the visibility over the system resource utilization under various load scenarios.

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