



BORLAND CASE STUDY

NSE.IT Ltd

FAST FACTS

COMPANY
NSE.IT Ltd

INDUSTRY
Financial services

GEOGRAPHY
India

CHALLENGES

- Develop a system that can scale to handle current and future trading volumes on a real-time basis
- As volumes increase, monitor trading without any compromise of performance or reliability
- Generate alerts and statistics based on near real-time data feeds

SOLUTION

- Borland® Enterprise Server

RESULTS

- Increase in processing efficiency from 2 million trades per 5.5 hours to up to 4.5 million trades per 5 hours
- Reduction in CPU and memory utilization of approximately 30 percent and 20 percent, respectively, as compared with other application servers
- Scalability to handle the growing number of users without adding additional resources

COMPANY

NSE.IT was incorporated in October 1999, as the IT arm and subsidiary of the National Stock Exchange of India. NSE.IT offers expertise in products, services, and solutions in the areas of trading, clearing and settlement, order routing, risk management, e-learning, and Public Key Infrastructure (PKI) solutions. The company also provides consultancy and implementation services in the areas of data warehousing, business continuity planning, infrastructure maintenance, facility management, and turnkey project implementations.

According to statistics from the World Federation of Exchanges, the National Stock Exchange of India Limited (NSE) is the third-largest Stock Exchange in the world in terms of number of equity transactions per year. NSE uses state-of-the-art information technology to provide an efficient and transparent trading and clearing and settlement mechanism. There is intensive use of information technology in all its operations.

CHALLENGES

To enable stringent monitoring of trading members, the National Stock Exchange of India needed a state-of-the-art system capable of providing scalability to support future growth. The main challenge was to transform its existing system into a scalable, real-time monitoring system that could handle growing trading volumes in real time—without compromising performance or reliability. This would involve enhancing the existing Java™ Message Service (JMS) and application server infrastructure, since the messaging performance of the system helps determine the number of trades that can be handled.

In addition, the solution would involve making memory and CPU utilization more efficient to handle a larger number of users with the same resources. In fact, performance had to be enhanced wherever possible so the system could generate alerts and statistics based on near real-time data feed. The relevant alert data could then be stored in databases for further analysis and report generation.

“While the existing application was relatively simple in functionality, the key technical criterion was the reliable performance of the JMS/J2EE™ infrastructure to meet current and future scalability requirements,” explained Ms. Lalitha M., Senior Consultant, NSE.IT Ltd.

SOLUTION

“We chose Borland based on our technical evaluation of its leading J2EE/CORBA®-based deployment platform, performance, scalability, worldwide presence as a vendor, enterprise support for the product, and the excellent team. NSE.IT easily ported the existing application to Borland® Enterprise Server 5.1 in about a week. Borland Enterprise Server quickly gave NSE.IT a reliable infrastructure to meet the current as well as future scalability requirements of NSE,” said Mr. Satish Naralkar, CEO, NSE.IT Ltd.

Borland Case Study: NSE.IT Ltd

“The Borland deployment solution met our key requirements—scalability, performance, and reliability—while not demanding huge resources. This has translated into a cost-effective solution.” — MR. G. M. SHENOY, GENERAL MANAGER AND VICE PRESIDENT, NSE.IT LTD

The system that NSE.IT developed for the stock exchange monitors trades in real time. To achieve higher performance and scalability, most of the application processing is done in-memory, and only alert-based data is persisted to the database. To handle both the current and future trading volumes on a real-time basis, offline analysis is supported, which determines the market trends over a period of time (three months).

RESULTS

The team at NSE.IT found that Borland Enterprise Server was able to meet and exceed their requirements. For example, during the evaluation phase by NSE.IT, Borland Enterprise Server handled 15,000 trades per minute—double the number handled by other offerings.

PROVEN PERFORMANCE

NSE.IT software engineers ran benchmarking tests on two Intel dual-CPU 900MHz servers with 2GB of RAM and a 70GB HDD running Red Hat® Linux® 7.2. Under these test conditions, Borland Enterprise Server 5.1 performed 2.5 times better than the other offerings. This gain in processing speed translates into a processing efficiency increase of 4 to 4.5 million trades per 5 hours compared to the earlier 2 million trades per 5.5 hours. The benchmark tests conducted by NSE.IT software engineers showed Borland Enterprise Server 5.1 achieved a reduction in CPU utilization of about 30 percent and a reduction in memory utilization of about 20 percent, as compared with other application servers.

These performance efficiencies allow the system to handle the growing number of users with the same resources. With its performance differential*, as well as its unique scaling capability,

Borland Enterprise Server enabled NSE.IT to exceed its performance goals during the conversion, while further enhancing utilization of existing IT hardware.

ADDED FUNCTIONALITY

The NSE-IT Real-Time Monitoring System has built-in configurable alerts. The system also enables offline monitoring and initiates proactive measures. It generates various alerts and reports on price/volume movement of securities as well as inconsistencies not in line with past trends or patterns. For this purpose, a historical database is maintained. In addition, rumors in the media are tracked and if they are price sensitive, companies are contacted for verification. Any replies received are forwarded to the members and to the public. With its performance, scalability, and functionality, the NSE-IT Real-Time Monitoring System has become a critical part of the National Stock Exchange of India.

* *Commonwealth Scientific and Industrial Research Organization (CSIRO) 2002, “Evaluating J2EE Application Servers.”*

ABOUT BORLAND

Borland Software Corporation is a global leader in platform-independent solutions for Software Delivery Optimization™. The company provides the software and services that align the people, process, and technology required to maximize the business value of software.



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