Shanghai Stock Exchange streamlines services with new testing platform

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—Zhong Yimin, senior manager, System Operation Department, Shanghai Stock Exchange

Objective
Enable new platforms to meet the business application requirements of the Shanghai Stock Exchange (SSE)

Approach
Sought hardware vendors to provide a suitable foundation for a high-quality monitoring simulation and testing platform

IT improvements
• Simulates an open x86 platform so SSE can evaluate the possibility of migrating its monitoring systems to that platform and ensure they will be foolproof once online
• Improves system security and stability, reduces online system risks and thus ensures the continuous development of SSE

Business benefits
• Allows SSE to cope with significant trading growth, real-time processing and increased data security challenges
• Provides an IT base for SSE to develop internationally
• Supports listed companies and investors through more efficient stock trading management

HP customer case study
HP servers provide reliable platform for vital trading system development

Industry
Financial services

HP servers provide reliable platform for vital trading system development

Founded in 1990, the Shanghai Stock Exchange (SSE) is directly governed by the China Securities Regulatory Commission. Its main function is to create a transparent, open, safe and efficient market environment that protects the interests of investors.

Since its inception, SSE has become the leading market in mainland China. Recent figures showed it had 894 listed companies, 938 listed stocks and a total market capitalisation of 17.900724 trillion Yuan. Globally, it ranks fourth with a total stock financing of 553.214 billion Yuan.

SSE trading volumes have continuously increased in line with 30 years of sustained development in the domestic securities industry. In recent years, there has been a significant increase in the volume of data relating to stock trading, block trading and T-bond trading. SSE has also seen a need for real-time processing and an increased requirement for data security and system stability. Any error would have serious consequences so to meet these challenges and prepare for international development SSE must constantly upgrade its trading systems.
To further improve trading efficiency, data security and quality of work, SSE decided to build a completely new monitoring system simulation and testing environment. It wanted this to be independent from the live monitoring system and to allow the transfer of some applications that previously ran in a UNIX® environment, to an open x86 environment. The new system would also carry out monitoring operation simulation and testing on business processing capabilities in the x86 environment.

**Move to open systems**

Many of SSE’s core trading systems run on a HP Integrity server platform. Considering the worldwide trends to using open platform in stock exchange, SSE Technology Centre decided to use open Linux servers to build the new monitoring system simulation environment. They aimed to achieve better business development by gradually migrating the monitoring system to the Linux environment.

To find a reliable platform for its high-performance, open-source x86 monitoring simulation and testing system, SSE sought the help of HP technical service experts with whom they already had a close and trusted relationship. The HP team looked at current trading conditions and future SSE development needs and conducted in-depth communication, analysis, testing and field trips. They first deployed a monitoring simulation and testing environment solution with the open-source and x86 servers in current use at the SSE. Subsequently they recommended HP Converged Infrastructure technologies including HP Superdome 2 and HP ProLiant DL980 servers to build a completely new simulation and testing environment.

**Efficient test platform**

HP has configured one HP Superdome 2 server as the database server. As many of the previous applications at SSE were developed with HP’s UNIX environment, applications previously run on HP Integrity rx8620 servers have been migrated to the Superdome 2 using HP-UX operating system. At the same time, HP has also provided the SSE with six HP ProLiant DL980 servers to act as front-end processor and application servers to migrate those applications previously used in a UNIX environment to the open x86 Linux environment.

The HP Superdome 2 and HP ProLiant DL980 servers will help SSE to create an environment that enables it to test the overall performance on x86 open system platform. The system will also enable it to assess whether it will be possible to migrate the monitoring system to an open platform to provide listed companies and investors with more efficient stock trading management.

The HP solution includes the most powerful and easy to manage range of existing Linux servers. They ensure that specifications, standards, openness and compatibility levels are fulfilled and HP’s technical experts have provided SSE with a Linux cluster system that delivers increased capacity and capabilities. This has enabled SSE to carry out testing and to develop its own applications on the platform, maximising efficiency and portability with a view to deploying a Linux open-source server in the trading system.
Single management platform

As the core server for the entire monitoring simulation and testing environment, the HP Superdome 2 allows SSE to deploy, automate and manage a complete range of applications in the same enclosure. With a single management platform, these applications can be controlled across servers, storage and networking using the same components, tools and processes. The Superdome 2 has also provided SSE with a common platform to consolidate, automate and manage its most demanding business applications.

SSE has also launched and used advanced, mature technologies from its own applications to conduct testing into whether the production systems can, in the future, be built on the open x86 platform. At the same time as providing a complete monitoring simulation and testing platform for the SSE, the HP mission-critical platform is also forecast to bring a good return on investment. The long-term benefits brought about by this simulation and testing platform will provide efficient computing capabilities for the SSE in the application environment and improve service levels.

Zhong Yimin, a senior manager in the System Operation Department of the Shanghai Stock Exchange says: "These high-performance mission-critical HP server systems use industry-leading technology and are secure and stable. The HP Superdome 2 and HP ProLiant DL980 servers we use in our monitoring simulation and testing system have extremely good performance. In addition to excellent performance, they also meet our requirements in terms of reliability and high availability."

"The Shanghai Stock Exchange has been an established client of HP since 1993 and all the servers used in our trading platforms are from HP. HP’s solutions has long been able to meet our requirements. The deployment of this monitoring simulation and testing system will be a very good reference and model in the future when our monitoring system migrates to Linux and is developed towards open-source. It will also play a definite role in the future when the whole securities industry will implement open-source, Linux applications."

For more information

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