securities

HDFC SECURITIES LIMITED

Pioneering online brokerage supports massive growth trend with TCS

By **Bharat Shah**, Principal Consultant, TCS Financial Solutions

HDFC Securities Ltd (HSL) was founded in April 2000 as a subsidiary of HDFC Bank, India's second-largest private sector bank. In 2004, HSL deployed a high-performance online trading solution for retail investors, built using the complementary securities trading and securities processing modules of TCS BaNCS.

Since then, HSL has built a successful business on the foundation of TCS BaNCS, benefitting from successive deployments of new features, new products, and frequent requisite adaptations to major regulatory changes.

As HSL expanded its customer base and trading volumes, TCS has enabled the organization to take advantage of vastly improved architectural approaches to enterprise computing. By doing so, HSL has lowered its data center maintenance costs, improved coordination between vendors, and bolstered operational resilience.

The original hardware stack consisted of enterprise technology that was state-of-the-art in 2004: six servers running on the RISC platform, Sun ONE 6.1 on 20 web servers, and an Oracle 11g database.

Operational resiliency was supported by "active/passive" duplicate infrastructure, with active servers operating the day-to-day business and an identical set of passive servers on standby in case of an incident. The switch from active to passive servers, had it been necessary, would have called for a complex recovery operation including manual intervention by database experts. A switchover would have taken at least 30 minutes, an unacceptably long time in the fast-moving capital markets. Accordingly, HSL maintained a keen interest in technology architectures having more robust approaches to disaster recovery and business continuity.

By 2011, the impetus for investing in new infrastructure became a high priority. HSL was having exceptional marketplace success in the booming Indian economy, accompanied by increased daily trading volumes. Trading operations must be prepared to handle a multiple of average trading volume, and the legacy hardware was fast approaching its limits. "We were worried that if the volumes continued to increase, we'd not be able to sustain the performance of the system," said Vivek Joshi, Chief Technology Officer at HSL.

The anticipated growth trends and the benefits of improved resiliency made 2011 the appropriate time to redeploy TCS BaNCS onto a new technology stack, one capable of meeting the future needs of HSL with reduced costs, higher availability and higher scalability.

ENSURING A STABLE FUTURE WITH TCS

Based on the strong, trusted relationships established since the outset of the TCS BaNCS deployment, HSL also turned to TCS to manage the hardware transition. TCS demonstrated its industry-leading reliability by providing eight years of unbroken uptime with TCS BaNCS across three major application upgrades. "TCS BaNCS is quite stable," said Joshi. "Whenever we have any challenges, TCS is prompt to address them and to meet our expectations – and the expectations of our customers."

TCS was able to prove the highest levels of scalability for TCS BaNCS through its high-volume, high-profile deployments in India and around the world.

A key factor in coordinating an extensive IT architecture transition is the management of key relationships from both business and technology perspectives. In India, TCS has longstanding relationships with its major trading venues (NSE and BSE) and with its primary depository (NSDL),

FAST FACTS

- HDFC Securities Limited (HSL) is India's top brokerage house in terms of customer registrations.
- Customer service for HSL is available at the 2,000-plus branches of HDFC Bank. Clients can trade via online, mobile, telephone, or at any HDFC Bank branch.
- HSL and TCS BaNCS won the Best Technology Implementation of the Year Award for 2014 from The Asian Banker, and for the past three years has been recognized as one of the Best eBrokerages by Outlook Money, a leading personal finance magazine in India.

AT A GLANCE

Company: HDFC Securities Limited, a subsidiary of HDFC Bank (NYSE: HDB), India's second-largest private sector bank.

Headquarters: Mumbai, India

Business Challenge: To improve the resiliency, availability and scalability of the securities trading and securities processing capabilities of India's leading online brokerage.

Solution: Rapid, zero-downtime migration to a high-availability, massively-scalable IT architecture using Oracle Real Application Clusters (RAC) technology.

Vivek Joshi, Chief Technology Officer at HSL

clearing organization (CCIL) and market regulator (SEBI).

In addition, TCS maintains strong ties to IBM and Oracle through its dedicated Centers of Excellence, which consolidate best practices, technical standards, and solution accelerators for the respective technologies.

HSL also benefits from the ease of working with TCS resources throughout the organization. "Also, the support team on the ground is always prompt and agile," says Joshi. "It's a very healthy, two-way relationship."

HITTING THE TARGET

The target architecture consisted of Oracle Solaris 11 for the operating system, Glassfish 3 for the application server, and an Oracle 11 database using Oracle Real Application Clusters (RAC) for business continuity.

The transition commenced in December 2012, and proceeded according to schedule, with no downtime during the migration or go-live – a highly noteworthy accomplishment for any financial institution given the scope and complexity of the underlying operations.

In February 2013, the internet trading platform went live on the Solaris 11 operating system and Glassfish 3 application server. By March, the back office operations were using the new solution, and by April, the front-office dealing and call center operations were also live.

The final milestone was achieved in June 2013 with the activation of Oracle RAC. "TCS managed to get Oracle RAC working on our platform, which was a big achievement for all of us," says Joshi. Oracle RAC provides instant mirroring of data, such that if one production server fails, another can step in without missing a beat. This alternative is more cost effective, provides higher availability and is easier to maintain compared to the "active-passive" model of backup infrastructure.

SCALABLE BENEFITS

Since the deployment, HSL has achieved significant benefits in terms of performance, risk management and availability.

The high scalability of the new architecture allows HSL to promise consistent system performance, even during peak times. "We can tell our customers with confidence that our system is now available 100 percent of the time, come what may," says Joshi. "Whatever the load or market conditions, our system will keep delivering at the same high level of performance."

The business also benefits through improved risk management. Previously, risk reports could only be generated during the trading day with a latency of 20 to 30 minutes, which created risk exposures from the possibility of customers exceeding their trading limits. Now, risk reports are generated every five to 10 minutes based on the latest data, allowing middle-office risk managers to make immediate assessments whether to allow or disallow specific positions that fall outside of ordinary trading limits.

In the back office, the technology staff can perform end-of-day processing on a significantly faster schedule. Whereas the old system had to run through the night, often until early morning hours, the new system completes end-of-day processing by midnight after close of trading. "We have a good six to seven hours to address issues, if there are any," says Joshi. "Our staff can go home early."

Overall, the new hardware has the scalability to meet the expected medium-term needs of HSL and its customers.

In the longer term, trading volumes are expected to rise even higher – and at that point, HSL will once again deploy the latest enterprise technology to address customer demands. "We are now in discussions with TCS to scale to the next level," says Joshi. ■