



# Invest in the future ...but don't break the bank

Robert Cline, director of NonStop Systems and Operations at Brown & Company, is ready for the future with *NonStop* systems.



>> Robert Cline loves a good IT challenge—the tougher, the better. Cline is director of the NonStop Systems and Operations (NSO) group at Brown & Company Securities Corporation, one of the largest deep-discount online brokerage firms in the United States. Brown & Company's core back-office trading application runs on Compaq *NonStop™ Himalaya™* servers. Cline knows there is *nothing* he and his team can't accomplish with *NonStop* technology. And he keeps on proving it.

Last year, NSO undertook a major upgrade from its *NonStop Himalaya* S72000 server to an S74000 platform to cope with exploding transaction volume. At the same time, the team rearchitected the computing infrastructure to add an integrated test system for full life-cycle development.

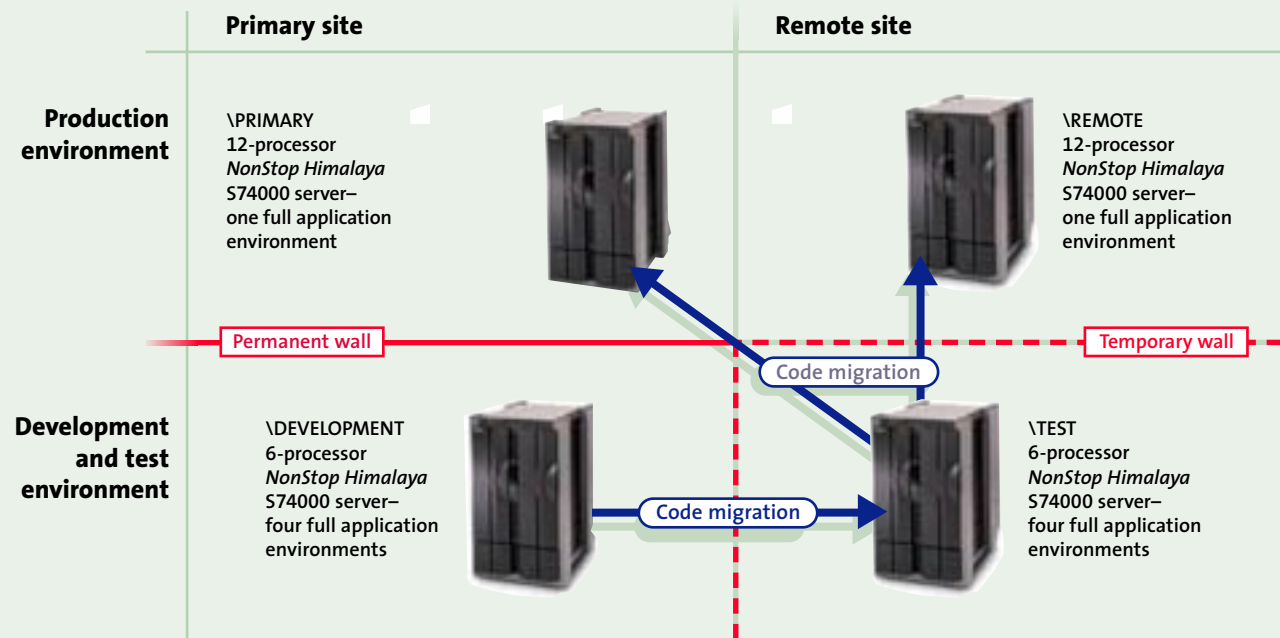
## the bank

Brown & Company takes a cost-effective approach to rearchitecting its core system

And the team did it all in just 89 days—on budget and ahead of schedule—with absolutely no disruption to the firm's trading activities.

Then it was on to the next challenge: an ambitious proof of concept to establish near real-time disaster recovery capability in the *NonStop Himalaya* system environment and “wrap” a key legacy application in open, standards-based technology. It was another huge win for NSO and its technology partners. Every project goal was achieved with 100 percent data integrity, and just 42 days from start to finish.

PHOTOS OF ROBERT CLINE/BROWN & CO. BY JONATHAN KANNAIR



Above: Overview of *NonStop Himalaya* system architecture for Brown & Company. Above right: NonStop Systems and Operations group reviews integrated test system.

**Ready for anything**

The securities industry is hectic these days, and there are big changes on the horizon. Over the next few years, transaction-plus-one-day (T+1) settlement, 24-hour global trading, and straight-through processing will put even greater demands on the computing infrastructure of online broker-dealers.

Cline isn't worried. Brown & Company relies on two *NonStop Himalaya* S74012 servers to host its back-office brokerage application. One production platform is the primary system; the second system is a mirror image of the primary and acts as a hot standby. Additionally, Brown & Company has implemented a full life-cycle development methodology for migrating code from development to integrated test to production; the development and test systems are *NonStop Himalaya* S74006 servers. "Having the *NonStop Himalaya* systems as

the core architecture for Brown & Company's business lets me sleep at night," said Cline. "We are ready for anything the market throws at us."

**Better for the customer, better for business**

Brown & Company customers are a special breed. They're self-directed, savvy, and sophisticated. And they expect their broker-dealers to deliver *really* fast execution to the market. "Our customers demand speed, and that's what we give them," said Cline. "We can confirm trades in a matter of milliseconds, thanks to the robustness and performance of the *NonStop Himalaya* system." By comparison, some brokers take up to 20 minutes to return a confirmation.

Last year's *NonStop Himalaya* server upgrade was all about speed. The batch cycle decreased by 60 percent, online performance increased by 50 percent,

and disk drives that were 30 percent faster were installed. "We have essentially created efficiencies—and significant cost savings—across the entire business with this upgrade," said Cline. "And, of course, every customer that uses our Web-based trading option benefits from this enhanced performance."

But there was more on Cline's mind than speed. In the process of rearchitecting the core application, the team also integrated a new test system into the complex. Brown & Company went from *NonStop Himalaya* K2000 and S7000 development systems to an S74006 development system and an S74006 integrated test system. The life-cycle methodology improves continuity and results in much tighter control over the code, and it virtually eliminates application and configuration management issues in the environment. The result is faster development and more

effective issue resolution. Having an integrated test system ensures that what eventually gets into production will not cause an issue.

In fact, the new system is running virtually trouble-free. NSO went from dealing with 15 to 30 issues a day to fewer than one a quarter, and Cline estimates the cost savings at roughly US\$150,000 per month. "That's the quantitative side of ROI," he said. "There's also the qualitative side: justifying the faith of the business community in Brown & Company by putting this infrastructure together. And, of course, we now have more time to work on projects that add value to the firm's operations. There is a huge cost benefit associated with that."

**A very smart investment**

Cline notes that, in addition to providing industry-leading uptime and performance, the *NonStop Himalaya* platform offers hallmark scalability that increases its investment appeal. "When we're dealing with customers' financial portfolios, we need to be proactive in our response to any market condition or circumstance," he said. "The ability to scale the platform and architecture is paramount. The *NonStop Himalaya* architecture gives us true linear scalability with no degradation. When we add processors, every dollar spent delivers the same result as all previous dollars spent. Ultimately,

this reduces the total cost of ownership, and we never have to worry that our business will outgrow our computing systems."

Cline is also pleased to see the strong emphasis on open standards in the *NonStop Himalaya* environment. Adherence to open standards is key to reducing development time and increasing code reusability. And it enabled NSO to wrap a legacy application in new technology that takes advantage of industry-standard data access methods, including Open Database Connectivity, Java, JavaScript, Common Gateway Interface (CGI), and Simple Object Access Protocol (SOAP) standards. It's also easier to maintain code that's

**Carr Scott magic**

A key partner in the NSO project to wrap legacy code in new, industry-standard technology for enhanced data access was Carr Scott Software ([carrscott.com](http://carrscott.com)). Carr Scott's Escort SQL product converts Enscribe applications and files to a *NonStop* SQL database with no change to existing programs. Escort RANGER

determines optimal file partitioning ranges for Enscribe files and *NonStop* SQL tables. Together, the Carr Scott products greatly enhance *NonStop Himalaya* system performance.

Robert Cline, director of NonStop Systems and Operations at Brown & Company, admits that he was skeptical at first. "Our third-party

application was old, and it was not clear that it could be upgraded without serious reprogramming or complete replacement," he said. "However, the software from Carr Scott for upgrading from Enscribe to SQL not only worked as advertised, but greatly exceeded our expectations."

written to industry standards, and the pool of expertise available in the industry is much larger.

**Laying the foundation for a zero latency enterprise**

Once the upgrade was completed, Cline's quick-strike team swung back into action on the proof of concept. Close collaboration with Compaq's NonStop Division, Carr Scott Software, Integrated Research, and Data Design Systems brought the desired result: NSO was able to replace its legacy Enscribe flat files with relational SQL structures, with no application reprogramming. This made it possible to access the data via industry-standard interfaces and fully leverage the power of Compaq Remote Database Facility (RDF) software for disaster recovery.

"The improvement is amazing," said Cline. "Full recovery takes less than seven minutes. By contrast,

Company will integrate business intelligence, statistical analysis, customer relationship management, and business risk management. Real-time information will help the company profile its customers for more effective one-to-one marketing. It will also make it possible to maintain absolutely current market and margin statistics, which will reduce risk to the business. From a business intelligence perspective, decision makers will have instant access to data for planned and ad hoc reporting. "It's real information in real time, and that's good for both our business and our customers," said Cline.

**Watching the pennies**

Compaq's ZLE architecture fits right into Cline's budget. "What we're proving here at Brown & Company is that a ZLE framework is applicable to smaller companies,

points along the way. The NSO team has already proved the data view portion, with continuously available data and disaster recovery. "Once files have been fully converted to SQL, we'll move into the EAI layer as the next major proof point," noted Cline. "When we prove that layer, we'll have an adaptive quality that gives Brown & Company unprecedented agility and responsiveness in the securities marketplace."

Brown & Company CIO Don Balser is delighted with the way things are going. "I am very impressed with the accomplishments of the NSO team and the outstanding strategic relationship between Compaq and Brown & Company," he said.

The NSO team sets its sights high. "Our goal is to be the first fully integrated ZLE framework in

**ROBERT CLINE, director of NSO group, Brown & Company**

At Brown & Company, a wholly owned subsidiary of J.P. Morgan Chase and Company, Robert Cline is vice president of technology and director of the NonStop Systems and Operations (NSO) group. Mr. Cline is nationally recognized for operational data store and data warehouse architectural development in telecommunications and finance, as well as for foundation work in zero latency computing and disaster recovery solutions integration. He has an extensive background in knowledge discovery, business intelligence, and strategic integration, with more than 15 years of experience in telecommunications, finance, and government computing.



competitors' disaster recovery times have been verified at 12 to 72 hours. This is the first critical step in Brown & Company's integration of Compaq's Zero Latency Enterprise (ZLE) architecture."

Cline can hardly wait to get started on the next piece of the ZLE architecture: enterprise application integration (EAI). Brown &

and the cost benefits associated with it are phenomenal," he said. "A ZLE framework is affordable to a much broader market than the huge retailers, travel services, and telecommunications companies that have spotlighted the technology so far."

The key is to take an incremental approach with proof

the finance industry," concluded Cline. "And once we've incremented ZLE technology into our environment—which we're doing in a very cost-effective manner—Brown & Company will have a unique and sustainable competitive advantage. All thanks to the *NonStop Himalaya* system at the heart of our business." ■