

Luxembourg Stock Exchange: Trading up with IBM XIV

Overview

Challenge

Create a storage environment that scales powerfully upon rapid data growth while reducing complexity through virtualization

Solution

Two full IBM® XIV® units at its main and backup data centers, with synchronous mirroring for disaster protection

Benefits

- Perfect fit with a virtualized server environment
 - Consistent high performance and massive parallelism deliver top-notch responsiveness
 - Easy and non-disruptive scaling ideal in handling rapidly growing information storage needs
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Founded in 1927, Bourse de Luxembourg (Luxembourg Stock Exchange) is a major listing center for international securities. Today a far cry from trading room floors of the past, Bourse de Luxembourg was one of the first exchanges to go electronic and serves its entire client base over the Internet. Well over half of its 140 employees hold IT positions.

In 2007, upon shifting its trading activities to the NYSE Euronext NSC platform, Bourse de Luxembourg began strategically focusing on all other aspects of securities trading. “We are a one-stop online shopping system for securities,” explains Bernard Simon, head of IT at Luxembourg Stock Exchange. “We list some 45,000 global securities and are undergoing enormous growth. Last year alone, we added nearly 8,000 new listings, along with associated regulatory documentation, processes, and databases. Our customers must be able to find what they need, and fast, and register for new securities as swiftly as possible.”

“We expected our previous storage solution to last until late 2010, but were running out of space a year earlier,” recalls Marcel Hoffmann, IT advisor at Luxembourg Stock Exchange. The Exchange’s operational handling of Finesti, a mutual funds information clearing house, added to the explosive data growth. “We were delaying key projects, like moving our customer representatives to a thin-client environment,” adds Hoffmann.

“We needed more capacity, with top-notch performance and usability,” explains Simon.



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—Bernard Simon, head of IT, Luxembourg Stock Exchange

Perfect with VMware

Luxembourg Stock Exchange had already embraced server virtualization, with its entire landscape of approximately 500 Microsoft® Windows®, Linux® and Solaris servers running as VMware virtual machines on just 60 physical servers. Creating new virtual machines requires creating new storage. As a logical next step, the innovative financial services provider sought a storage platform with the required flexibility to rapidly create and provision new storage and prevent storage hotspots amid changes in virtual machine load.

“The IBM XIV system offered a virtualized storage infrastructure with extremely consistent high performance, including during peak demand periods,” says Simon. “We found IBM XIV to be a perfect fit with our VMware virtualized server landscape, giving us freedom from hotspots. It is exactly what our business needed.”

Luxembourg Stock Exchange implemented two IBM XIV units at its main and backup data centers, with synchronous mirroring for disaster protection. The XIV solution now serves all their storage needs. Their long-time IT partner, Systemat, played an active role in the decision and implementation: “As an independent infrastructure integrator, our role is to match the ideal solution to our client’s needs,” explains Luc Brulez, general manager of Systemat Luxembourg. “We unequivocally advised the Exchange to go with XIV technology—and it was clearly the right choice for them.”

Hoffmann adds: “The ability to work with IBM on this project was invaluable: The technical team understands our challenges as a financial service company and helps identify our potential requirements.”

Easy, fast, and secure

“Migration was very fast: What we thought would take weeks was done inside five days, within working hours, and with no impact on live applications or users,” says Hoffmann. “We simply mounted XIV on the VMware servers and, using VMware Storage VMotion, moved the live virtual machines VMDK’s to the XIV system.” The Exchange runs a number of enterprise systems on XIV, including: Microsoft Exchange Server 2003, Oracle WebLogic Server, Progress Sonic ESB, Apache and Apache Tomcat.

“IBM XIV ease of management is a huge benefit,” he adds. “The XIV system hides complexity from the administrator—you can learn it in half an hour. Setting up a new file system takes just minutes. Drag-and-drop thin provisioning lets us deliver new storage volumes while still on the phone with the user! It’s also much easier to deploy new applications. And, of course, we no longer spend time managing storage tiers.”

IBM Solution Components

Hardware

- IBM® XIV® Storage System

Software

- IBM System Storage® SAN Volume Controller

Business Partner

- Systemat
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—Bernard Simon, head of IT, Luxembourg Stock Exchange

IT Environment

Operating systems

- Microsoft® Windows Server

Databases

- Sybase
- Microsoft SQL Server 2005

Applications

- Microsoft Exchange Server
- Oracle WebLogic Server
- Progress Sonic ESB
- Apache, Apache Tomcat

Virtualization

- VMware ESX Server
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IBM XIV provides disaster recovery through built-in remote synchronous or asynchronous replication. Luxembourg Stock Exchange has currently implemented synchronous replication and also uses the XIV snapshot function for disaster recovery testing, which it runs several times a year. The organization takes a snapshot of the entire physical environment on the primary XIV system and restarts all volumes as master volumes on the secondary XIV system. This approach enables testing to take place without any configuration changes or performance impact on production systems, making it easier and less risky to ensure disaster readiness.

Growing performance benefits

IBM XIV provides added CPUs and memory with each capacity increase, ensuring high performance as the system scales.

“The XIV system’s modular nature eliminates the performance bottlenecks typical of conventional storage,” says Hoffmann. “With the XIV approach, you can increase to infinity! Availability and overall performance are also excellent. The large number of Fibre Channel ports let us dedicate sufficient I/O to our virtualized desktops—a key enabler for our thin-client project.”

Consistent high performance means better response times to external users in a cut-throat industry. Noted Simon, “Whether our customers are seeking information to evaluate or execute a trade, IBM XIV’s smooth response times gives Luxembourg Stock Exchange a competitive advantage, enhancing our ability to grow our business.”

Efficient and compact

The XIV system consumes less energy per usable TB than traditional architectures. “IBM XIV’s small physical and environmental footprint is another significant benefit—not least of all because it enables us to reduce operating costs by renting less data center floor space,” says Hoffmann.

“When I look at the cost saving for the direct acquisition, I cut my budget in half and am saving a third of the cost in electricity, footprint and people,” says Simon. “My total cost of ownership has been cut by 70 percent.”

“We didn’t expect this huge difference, but we accepted it!” says Hoffman. “We have earned our reputation by applying technology to differentiate our business, and the IBM XIV system is now a key element of this strategy,” summarizes Hoffmann.

“The learning curve with XIV is almost nonexistent: you can learn the system in just 30 minutes. The XIV system automates load balancing and RAID protection, hiding complexity from the administrator. And, of course, we no longer spend time managing tiers.”

—Marcel Hoffmann, IT advisor, Luxembourg Stock Exchange

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For more information about Luxembourg Stock Exchange, visit: www.bourse.lu

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