

QLogic Routes Connectivity Choices into Cost Savings



Challenge

A major international air freight corporation wanted to pilot-test storage consolidation through an inexpensive iSCSI network accessing a Fibre Channel storage area network (SAN).

Solution

One 2 Gbps QLogic® SANbox® 6140 Intelligent Storage Router allows remote servers to access 10 TB of SAN storage using iSCSI over the existing LAN, while other servers access the SAN directly using Fibre Channel connections. The servers connected via iSCSI support e-mail and software development tools and include seven Hewlett-Packard servers running Linux® and Microsoft® Windows®, along with one Sun server running Solaris™.

Results

Tests of the QLogic multiprotocol router proved the feasibility of connecting multiple servers to the Fibre Channel SAN via iSCSI, significantly lowering connectivity costs. Also, migration from direct-attached storage to a SAN environment becomes virtually effortless because LAN connections are used.

“The QLogic SANbox router allows us to use our existing LAN infrastructure to consolidate storage for servers with moderate I/O demands. It is very simple to connect these servers into our existing Fibre Channel SAN.”

**– Elvira Everett-Bechtold
Founder, Colorado Front Range Storage Network Users’ Group**

Elvira Everett-Bechtold knows a lot about storage. By day Everett-Bechtold works for a large international air freight corporation, where her duties as an IT administrator are critical to making sure applications are available to developers working on in-house tracking software. Outside of her day job, she helps run the Colorado Front Range Storage Network Users’ Group (COFR-SNUG) in Englewood, Colorado, an organization that helps small and medium-sized businesses with storage issues. Both positions give her a unique understanding of the kinds of storage configurations that work best for particular environments.

Not All Applications Need Expensive, High-performance Connectivity to Storage

Storage consolidation is a proven way of lowering equipment costs as well as administrative costs. Centralized storage is also much easier to scale, which enables IT to be more responsive to business needs. But traditional Fibre Channel SANs require expensive host bus adapters (HBAs) in the servers as well as expensive fibre cabling that has distance limitations. According to Everett-Bechtold, the HBAs alone can cost as much as the servers they connect to the SAN. “It often takes an inordinate amount of time to provision the HBA so the server can connect to the SAN fabric,” she said.

Everett-Bechtold felt that for some applications, the high-performance of expensive Fibre Channel connections between servers and SANs might be unnecessary. If iSCSI connections over standard Ethernet LANs could connect servers to existing Fibre Channel SANs and provide adequate performance, significant cost savings could result.

Said Everett-Bechtold, “Applications with moderate I/O requirements, such as e-mail and project management software, really do not need to fly first-class on expensive Fibre Channel SAN connections. In our environment, we suspected that an iSCSI network would provide enough bandwidth for many applications, but we wanted to test that premise. We needed to find a way to link iSCSI-connected servers to our Fibre Channel storage.”

Now iSCSI-Connected Servers Can Use Fibre Channel SANs

A chance conversation with a QLogic engineer revealed how Everett-Bechtold might evaluate her premise. The QLogic SANbox 6140 Intelligent Storage Router, the engineer explained, would allow Everett-Bechtold to use iSCSI to link servers to her Fibre Channel SAN. The SANbox router connects directly to the department’s Fibre Channel SAN switch, giving her the flexibility to use either Fibre Channel or iSCSI to connect servers to the SAN.

Over the course of a few weeks, Everett-Bechtold tested the router on eight servers used for e-mail and software development management. She felt these servers had modest I/O requirements, making them ideal candidates for iSCSI. “I wanted to see if the performance of less-expensive iSCSI connections could support the needs of our users,” she recalled.

Quick Installation Time Enables Almost Immediate Server Access to iSCSI

Installation was fast and easy. In a matter of hours, Everett-Bechtold had installed the iSCSI initiators (which are provided free of charge) on the servers and interconnected

the eight servers to the SAN through the QLogic router. The existing LAN network interface cards were used for the iSCSI connections. "QLogic configuration wizards made installation a snap. It was far less time-consuming than provisioning HBAs," noted Everett-Bechtold.

Using iSCSI Shows Little Effect on the Performance of Applications with Modest I/O Activity

Confirming her initial hunch about iSCSI, Everett-Bechtold reports that users of the e-mail and development servers experienced no perceptible change in application response times after the move to iSCSI.



QLogic SANbox 6140 Intelligent Storage Router Bridges FC and Ethernet

The 2 Gbps QLogic SANbox 6140 Intelligent Storage Router bridges Fibre Channel and iSCSI environments to provide IT administrators with a choice of server connectivity technologies. High-performance Fibre Channel connections are available for data-intensive applications, while servers with less data-intensive applications can use low-cost Ethernet connections.

Key Features:

- Flexible connection choices turn Fibre Channel storage into multiprotocol storage for cost savings
- QLogic SmartWrite™ feature allows complete data replication over low-bandwidth connections
- Installation wizards with intuitive user interfaces speed installation and configuration
- Interoperability with all major server and storage products helps preserve hardware investments
- Support for all major operating systems means router works with existing software investment

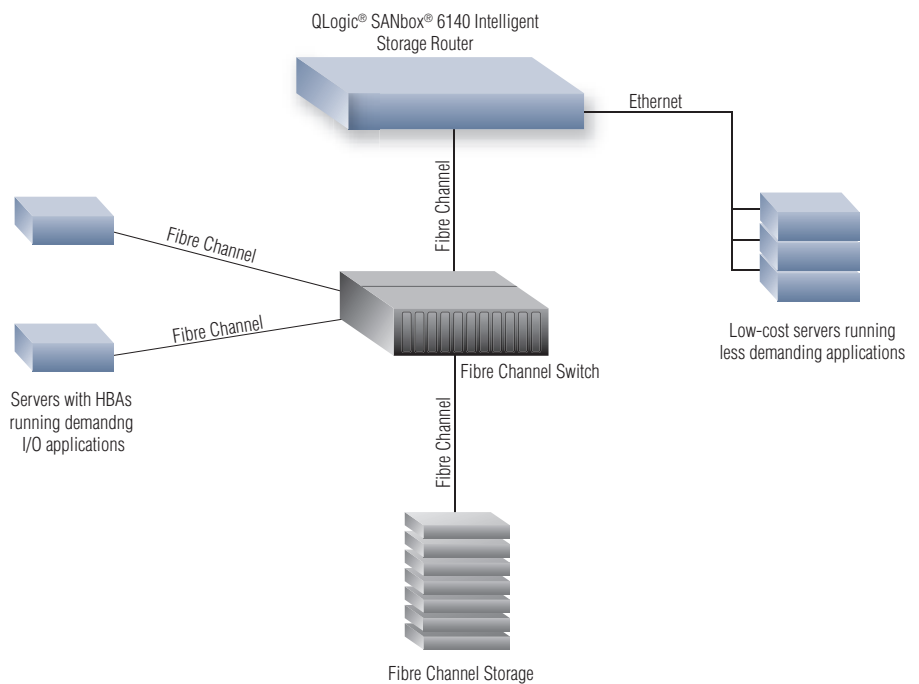
"Most of our users have no idea how we are storing their work, which is the way it should be," Everett-Bechtold said. "That way, we in IT can focus on optimizing the underlying infrastructure, and users can focus on getting their work done."

IT Can Now Match SAN Connectivity Costs with Application Needs

In addition to the reliability and performance of the SANbox multiport router, Everett-Bechtold was also impressed with the price of the device. The router, which can connect up to 150 servers through iSCSI links, provides a significant price advantage over connecting servers solely by Fibre Channel. "I can connect 150 servers via iSCSI for under \$70 each," Everett-Bechtold said.

Based on the test results, Everett-Bechtold plans to move more applications to iSCSI connectivity. "We plan to use iSCSI for everything other than our database and messaging applications," she said. "By connecting all remote servers on our campus, we can offer our users very low-cost consolidated storage."

Everett-Bechtold's experience shows that iSCSI access to Fibre Channel SANs—enabled by the SANbox router—has wide applicability. "With the SANbox router, QLogic has made cost-effective storage configurations available to companies of all sizes," she said. "I know that my user group is looking forward to welcoming speakers from QLogic to talk about connecting iSCSI devices to Fibre Channel storage."



QLogic iSCSI Interface for Native Fibre Channel Storage

As seen in this illustration, the SANbox 6140 Intelligent Storage Router allows IT administrators to choose Fibre Channel or Ethernet connections for servers connected to a SAN. Servers with demanding applications can be connected using Fibre Channel links. Applications with less I/O throughput can be connected through inexpensive iSCSI links enabled by the SANbox Intelligent Router. Two 1 Gbps Fibre Channel ports connect the router to the SAN switch.



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