



DFO implements a Brocade-based SAN to centralize data backups for its Windows NT servers.

SOLUTIONS

Executive Summary

Technology Challenge:
Centralize and automate data backup to improve network performance, reduce administration costs, and simplify storage allocation

Solution:
A Storage Area Network (SAN) based on Brocade® SilkWorm® 2800 fabric switches; an Open Storage Solutions® Infinity FC² Fibre Channel RAID system; a StorageTek L40 tape library; and Windows NT servers

Benefits:
The new SAN:

- Consolidates distributed data backups into a centralized, automated process
- Removes workload from the production network to improve application performance
- Increases storage capacity to support continued data growth
- Frees up IT staff resources for more strategic tasks
- Improves fault tolerance with redundant components and failover software

Navigating a Sea of Data

A department of the federal government, Fisheries and Oceans Canada Maritime Region plays a leading role in managing and safeguarding oceans and inland water resources for eastern Canada. Also known as DFO, the department has a variety of responsibilities, such as protecting marine habitats, establishing fisheries management plans, conducting search and rescue missions, and controlling marine traffic. To support such a wide range of activities, DFO found itself accumulating a rapidly increasing amount of business data.

According to Dan Fitzgibbons, head of DFO LAN services, the department needed a more effective way to manage its almost-exponential data growth. "We found ourselves constantly at the threshold of our existing storage capacity, so we had to do something to meet the increased requirements,"

he states. "Since our storage was distributed across multiple servers, we also wanted a single point of management control. We thought that centralizing the storage would save us time and money."

Another key issue for DFO was reducing its nightly backup windows, which were threatening to extend into prime business hours. The department set a high priority to migrate the backup workload off the corporate network.

A SAN DESIGNED FOR GROWTH

After deciding that a SAN architecture would best address its needs, DFO developed a Request For Proposal (RFP) that outlined the installation's requirements. To implement the new SAN infrastructure, DFO selected Open Storage Solutions (OSS), whose SAN design best met DFO's requirements.

"The reasons that we based our SAN proposal on the Brocade SilkWorm 2800 are twofold. The first is Brocade's very robust, full-fabric Fibre Channel implementation, which allows the flexibility and scalability we needed to meet the truly open nature of a SAN and DFO's business needs. The second reason was the high-quality products and support we have experienced as a Brocade Premier Fabric Partner."

- Dan Marazzato, *solutions architect for Open Storage Solutions, Inc.*

Today, the overall SAN architecture includes two Brocade SilkWorm 2800 fabric switches, a dual-controller Infinity FC² Fibre Channel RAID system from the OSS SANstone product family, and a StorageTek L40 tape library. Five Windows NT servers with redundant QLogic Host Bus Adapters (HBAs) provide failover capabilities to ensure high availability. The SAN currently supports 3 TB of data, although the total capacity can be expanded to approximately 18 TB.

SIGNIFICANTLY IMPROVED BACKUPS

One of the biggest advantages of the SAN implementation has been the ability to improve data backups through centralization and automation. When DFO previously backed up its geographically dispersed Windows NT servers on an individual basis, an administrator might have had to deal with up to 100 backup status notifications per day. With the servers connected to the SAN, there is a central management point for all the servers.

Centralizing the backups through an automated tape library has helped ensure greater data availability while freeing up IT staff to focus on more strategic management activities. If an overnight backup was not successful, an additional backup can be performed during operational hours since the data is not being backed up across the corporate IP network. This ability provides faster recovery and an additional level of protection.

"Our backups are completing much faster than before, yet we're backing up four times the amount of data," Fitzgibbons notes. "And even though the volume of data is substantially larger, we still have lots of room to grow with the SAN. Overall, we are utilizing our capacity much more efficiently."

OPPORTUNITY FOR ONGOING COST SAVINGS

Along with increased performance, another benefit of the SAN has been the redundancy, which increases fault tolerance and enables 24x7 application access. Fitzgibbons says, "When we moved the corporate backup and applications to the SAN it was transparent to the users, except that they noticed a great improvement in the responsiveness of their desktop applications."

Having achieved such impressive results with the corporate phase of the SAN, DFO hopes to expand the SAN to support its more data-intensive scientific processing applications. Current plans include consolidating servers to reduce costs, as well as clustering servers to increase data access and fault tolerance across the enterprise. Fitzgibbons states, "The SAN gives us definite opportunities for future cost savings and better efficiency as far as economies of scale are concerned. It's a strategic path for handling our tremendous data growth."

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