Environment Canada

Environment Canada's mandate is to preserve and enhance the quality of the natural environment, including water, air and soil quality; conserve Canada's renewable resources, including migratory birds and other non-domestic flora and fauna; conserve and protect Canada's water resources; carry out meteorology; enforce the rules made by the Canada - United States International Joint Commission relating to boundary waters; and coordinate environmental policies and programs for the federal government.

Environment Canada   **Environnement Canada**

One of Environment Canada's activities is weather and environmental forecasting. They issue approximately 500 000 public forecasts, 200 000 marine and sea state forecasts, 400 000 aviation forecasts, 14 000 warnings of severe weather and respond to 44 million requests for weather and environmental information per year, thereby helping Canadians adapt to their environment by providing scientific information affecting their health, safety and business. There are three locations in Ontario : Toronto, Ottawa and Thunder Bay, in addition the National Centres.

The Environment

The Environment Canada office in Toronto collects and stores weather data. The data is stored on Hewlett Packard systems using HP UX operating system as well as Intel systems using Windows NT and Linux operating systems. Their legacy Hewlett Packard Server's dependence on the now obsolete High Voltage Differential (HVD) and Fast Wide Differential (FWD) disk technology has created challenges in many areas of equipment life-cycle Management including data storage expansion, maintaining and servicing the existing equipment, and planning for the future.

Environment Canada felt that they wanted to remove the interdependence between the server and storage resources.

The Requirements

Environment Canada had specific goals for the project :

- Transition away from the FWD and HVD disk storage on the HP servers
- Remove the interdependence between server technology and storage technology
- Minimize or control negative impacts of changing technology
- Easily utilize and incorporate new emerging technologies
- Ease of operation and management of the new environment
- Technology that is scalable, expandable, flexible and open
- Interoperability within the current environment

Environment Canada wanted a phased approach to allow for a gradual implementation. That is to say, implementation at one location at a time, thereby ensuring manageability both in terms of the manpower resources required to deploy the project and the financing costs for the new equipment and services. Toronto would be the initial location with roll-outs to Ottawa and Thunder Bay. This would be a pilot project that would become a national standard for this branch of the Canadian government.

storage area network
SANstone ™
open storage solutions

Environment Canada
. . . continued

The Solution

The recommendation was for Environment Canada to create a Storage Area Network (SAN) environment — that is, a separate high-speed network dedicated to storage resources.

The full fabric SAN for Environment Canada includes Open Storage Solutions® SANStone™, featuring DataCore SANsymphony Software, Brocade Switch,Open Storage Solutions Omega™ FX² RAID system, and the existing Exabyte 690D tape Library all brought together with Open Storage Solutions IT Design Services.

A SAN addressed the primary goal of moving away from from Fast Wide Differential(FWD) disk drives and the traditional server storage dependence. Once that step was taken, however, many other operational benefits and opportunities were created. These include:

- Consolidated storage management functions
- Increased fault tolerance
- Increased performance, LAN-free backups
- Easy performance and capacity scalability

While there are certainly capital costs associated with a SAN deployment, in the long run, the financial impact are positive as well.

- Capital Savings - A SAN uncouples server growth from storage growth. In effect two different networks are created, allowing storage growth and changes to be distinct and independent of server growth. 100% utilization of each resource can take place under a SAN.

- Backup Savings - A SAN allows for a more efficient and effective backup process while at the same time freeing LAN resources to do what they have been designed to do.

- Data Management - SAN allows for the creation of storage consolidation and storage pools. Storage can be easily directed to where it is required and resources can be shared. This can decrease overall storage purchase costs.

Project Scope

A full fabric SAN was installed in stages starting with a point-to-point Fibre attach tape unit, the existing Exabyte 690D, on to an existing Hewlett Packard server followed by the creation of a storage pool to allow sharing disk resources amongst the HP systems. The final stage of the project was to incorporate NT and Linux into the storage pool.

OPEN storage solutions

SANstone
storage area network
open storage solutions

openstore.com