From videotapes to digital storage

Customer:
NOB Cross Media Facilities

Market segment:
Media

Solution:
Because NOB Cross Media Facilities wanted to archive all television programs digitally, it needed a new storage environment to make this possible.

Technology:
Cisco MDS9509 Multilayer Director

NOB implements new storage environment

From now on, NOB Cross Media Facilities will be archiving television programs digitally rather than on video tape. The service provider has set up a new storage environment for this purpose, based on a backbone with Cisco core switches. The objective: improved efficiency, reduced costs and increased user friendliness.

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The principal

NOB Cross Media Facilities provides a variety of services to public and commercial broadcasting companies in the Netherlands. Its primary tasks are to facilitate the processes of television production and broadcasting and to develop new multimedia services. Together with the public broadcasting companies and the Netherlands Institute for Image and Sound, the NOB participates in the Digital Platform, with the objective of achieving a completely integrated working process. The Digital Provision project, a first step in this direction,

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primarily concentrates on digitizing the production and broadcasting processes and relevant archiving processes.

The challenge

In order to improve efficiency, reduce costs and increase its provision of services, NOB decided to switch from video tapes to digital files. Working with video tapes is time consuming and relatively expensive, and results in a loss of quality. Using digital files remedies these disadvantages while offering new working methods.
To facilitate the switch to this digital working method, NOB needed to implement a Storage Area Network (SAN) solution. This, however, should not detrimentally affect the normal work activities.

The solution

The (hardware) heart of the storage solution implemented by the NOB consists of four HP StorageWorks Enterprise Virtual Array (EVA) 5000-disk storage systems and one Sony PetaSite Consolidated Storage Management (CSM) tape library. The capacity of the EVA systems totals 70 Tb. The tape library provides space for nearly three thousand tapes with a capacity of 500 Gb each. The backbone of the configuration is a heavy Fibre Channel (FC) network built around two Cisco multi-protocol MDS9509 core switches, each with eighty ports.

The result

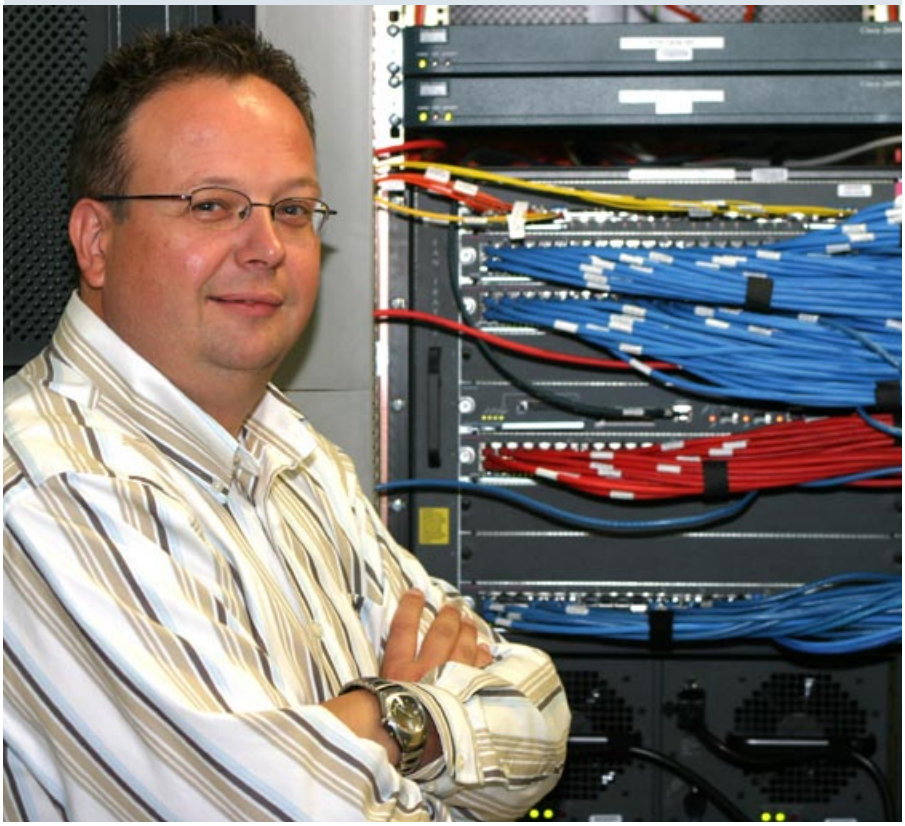
NOB now has a storage and content management environment that is virtually completely digitized. The change from video tapes to digital files means that a large number of activities can be performed automatically. This saves time, increases flexibility and reduces costs. Loss of quality due to repeated use is now a thing of the past. Moreover, user friendliness has increased significantly. Users can find and view files on-line, at any time, from any location. The Cisco switches guarantee optimum availability of the storage environment.

Technical specifications

- Cisco MDS9509 Multilayer Director (2 x)

Benefits

- Robust architecture
- Optimum availability
- Supports a maximum of 256 FC ports per chassis and 768 per rack
- Low Total Cost of Ownership (TCO)
- Multi-protocol/multi-transport integration
- Intelligent network services
- Virtual SAN (VSAN) technology
- Open platform for storage applications
- Extensive security features
- Advanced diagnostic facilities
- Central storage management
- Supports high-performance Inter Switch Links (ISLs)
- Flexibility and investment protection



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Excess storage capacity

NOB Cross Media Facilities works with an enormous number of video tapes. That requires a gigantic amount of storage capacity. The new storage environment provides that capacity. It is also an environment that is prepared for growth. NOB therefore faces the future with confidence.

Storing video content and making it accessible is both costly and time consuming, certainly for the mega-volumes that are involved at NOB. Until recently, NOB primarily used video tapes for the production, storage and distribution of television programs. However, the market has forced the facilities service provider to improve its efficiency and reduce costs. "In order to satisfy these market demands, we decided to reduce the use of traditional video tapes and create an advanced, file-based storage environment that is (nearly) one hundred percent digital,

"Our need for storage capacity is extremely large"

within the framework of the Digital Provision. This allowed us to reduce costs, deal with the explosive growth of our archives, introduce a more user-friendly working method, and facilitate new multimedia options for our clients," says Marcel Opsteegh, Senior Consultant with the NOB's AV Expertise Center.

"Not only did it have to be easy to expand the new storage environment, but up-scaling with significant volumes also had to be possible," according to the program of requirements. "Our need for storage capacity is extremely large. And it will only continue to grow, in particular because of our archiving function. It also had to be easy to manage the storage solution. We have experience with storage, but not with storage of this scope. Thus we had a lot to do. The capacity of the network was

"A one-hour video easily requires 30 Gb storage space"

another extremely important aspect. A one-hour video easily requires 30 Gb storage space. Transporting so much information requires a significant bandwidth. Our minimum requirement for transmitting a video file was therefore 300 Mbps. A lower speed negates the improvement."

Robust

NOB trusted a consortium led by Sony to build the new storage environment consisting of a combination of disk and tape storage. HP provided the necessary process-critical SAN infrastructure with four StorageWorks

"We will never be really finished"

EVA 5000 systems for file storage and forty ProLiant servers for managing the content. Sony supplied a PetaSite CSM tape library based on intelligent SAIT technology. The selected backbone is an FC network centering around two MDS9509 core switches by Cisco. The DIVArchive system by Front Porch Digital and ADIC's StorNext SAN

"The core keeps it all together"

file system are the primary storage programs.

"We opted for Cisco core switches based on our excellent experience with this supplier's IP network," Opsteegh explains. "The switches' robust architecture is also appealing. It is in perfect keeping with the Cisco Catalyst switches that we have been using to our satisfaction for quite some time. The management tools are also similar. So we were already relatively familiar with them. What is more, the support of various types of blades and issues such as FC over IP and iSCSI were important aspects. Not that we will be using them right away, but we do have that option. And that is what counts. The same holds true for the possibility of growth in functionality by means of automatic software upgrades."

Successful

The implementation of the storage environment took place in phases. "The equipment was rolled out slowly but steadily. We started with an SAN fabric with two Cisco MDS switches combined with one HP EVA system and one Sony PetaSite tape library. Then we gradually expanded that configuration. The basic infrastructure is ready now, but of course we will never be really finished. After all, every day we broadcast television programs, our archives will grow. That means that we will need to expand regularly. We will be limiting this to one large-scale expansion every quarter or half-year, or else we will always be changing. For the record, the expansions are relatively simple. This is another appealing aspect of the architecture," says Optsteegh.

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He emphasizes, however, that although management is relatively simple, it is still a complex environment. "The challenges presented by the enormous volumes are different from the challenges faced by the average customer. We still run into capacity and performance problems, for example, but increasingly less often. Those are the start-up problems that you have with any system." Opsteegh is convinced that the new configuration will meet NOB's needs for many years to come. "The switches, however, are already nearing their limit. At the time, we opted for core architecture rather than core-edge architecture because of the high port density. We thought it would suffice for many years. However, we were wrong. Which is why we will soon be changing to a different fabric architecture: probably an architecture with less-expensive core edges. We made a mistake in that respect."

"Making copies and hiring couriers was both time consuming and expensive"

Cornerstone

Opsteegh is pleased with the many advantages the new storage environment offers both NOB and its clients. "Because we work with files, we no longer need to move around tapes all the time: making copies and hiring couriers. That was both time consuming and expensive. Now you can browse through the archives from your desk. The files are available on-line, which significantly speeds up content searches while offering new possibilities, via the Internet, for example. Because the archive system is divided into layers, from low to high resolution, with increasing access times and storage capacity, accessibility is optimized." Thanks to the Cisco equipment, there are no complaints about availability. "The SAN fabric works perfectly. We have never had serious problems with it. Which is as it should be: it is the core, the cornerstone that keeps it all together. If it goes down, everything falls apart. But fortunately it is extremely reliable."

"We no longer need to move around tapes all the time."

Marcel Opsteegh,
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