Consolidated HP SAN solution boosts performance for broadcasting group

AKN

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Business need:
AKN provides common facilities and services for three public broadcasters in the Netherlands. As a result of the need to archive digital video files, increased e-mail traffic, and expanding business data, the firm's three-year-old storage area network was inadequate. The firm needed to greatly increase data-storage capacity as well as consolidate storage and backup solutions with a single supplier.

Solution overview:
AKN replaced its legacy storage with an HP virtualized storage area network incorporating the HP StorageWorks 5000 Enterprise Virtual Array and the HP StorageWorks Enterprise Systems Library E-Series 712e library. This new HP SAN provides the additional storage capacity AKN needs to meet growing demands, and cuts backup times in half. By consolidating storage onto the HP SAN, AKN resolved the connectivity and compatibility issues that plagued its previous storage systems.

Growing audience for storage
Located in the same building as the three broadcasters it serves, AKN provides production facilities, legal, financial, personnel, and IT services. The 28-person AKN information technology group supports 1,300 desktops for its own personnel and the broadcasters, business applications (including e-mail, Internet and web hosting, and office automation), radio and television production applications, and telecommunications.

A heterogeneous infrastructure underpins these activities and includes file and print, e-mail, web, network management, video and audio production servers, and PABX. AKN facilities rely on 80 HP ProLiant servers (models DL360, DL380, DL560, and DL580) – predominantly running Microsoft® Windows® Server 2003 – and 10 Sun Solaris servers. An Ethernet local area network with Cisco switches connects the desktops, primarily HP systems, plus a small number of Apple Macintosh desktops.

Faced with an aging SAN and growing amounts of data, AKN installed a new HP virtualized SAN solution to support its IT environment in October 2004. The new SAN includes a StorageWorks 5000 Enterprise Virtual Array (EVA5000) for main storage and a StorageWorks Enterprise Systems Library E-Series tape library (ESL 712e) for SAN backup and archiving. The new SAN replaced a Compaq RA8000 array with about 1 TB capacity and an IBM 3584 tape library. Explains AKN's Technical Projects Manager Eric Kuijt, "The SAN was more than three years old and it was time to renew the contract on the RA8000, so we decided it was time for a new solution."

AKN looked to the new HP SAN for increased capacity to support its growing needs. "We are transitioning to total digital video production, which creates an enormous amount of new data. Because we archive a lot of digital video, these archives grow very fast," notes Kuijt. "In addition, e-mail is much more important to us than it was four years ago when HP designed the previous SAN. People archive more e-mail and retain it longer – and we anticipate that evolving government regulations may eventually require even more archiving."

AKN also wanted to consolidate its storage and backup solution. For the previous SAN, AKN chose the IBM library to take advantage of the performance advantages offered by LTO (Linear-Tape Open) technology at that time. However, AKN experienced ongoing connectivity and firmware compatibility problems with the IBM library.

With the opportunity to develop a new SAN, Kuijt and the AKN IT team looked at three familiar vendors – HP, IBM, and Sun – and selected HP. One of the primary factors in AKN's choice was their confidence in HP, based on their positive past experiences. "Our total experience working with HP is very good – from how quickly they react to problems, to the quality of our interactions with HP account management and the HP help desk," emphasizes Kuijt. "HP service is very good and was a big factor in our decision. We also wanted to consolidate our storage and backup solutions with one company, and HP was the clear choice."

Performance and scalability

The high performance and high capacity of the EVA5000 provides a strong input/output rate, reduces costs, and scales to meet the firm's rapidly growing needs. HP virtualization solutions pool and share resources, so supply automatically meets demand. "The virtual RAID on the HP StorageWorks EVA5000 array means we can use many spindles at the same time, delivering a very high I/O rate," explains Kuijt. "Also, EVA lets us use serial ATA drives and Fibre Channel drives in the same cabinet, which saves expenses by reducing cabinet hardware and wiring. Scalability is another big plus – we can grow the EVA up to 35 TB in a single storage device."

The ESL 712e offers very high drive and cartridge density, along with outstanding reliability, interoperability, and advanced functionality. Integrated into HP StorageWorks Extended Tape Library Architecture, the ESL 712e affords management of the entire tape subsystem from a single view. "The HP ESL 712e library uses next generation LTO2 drives, which give us a big performance boost," maintains Kuijt. "Input/output performance is two times as fast as the old library; we take half the time to do backups." Kuijt also values the adaptive tape speed (ATS) feature of the HP LTO2 drives, which allows the speed of the drives to vary dynamically, depending on the speed of the backup stream. This helps achieve peak performance by reducing tape drive repositioning, which results in more efficient backup operations.

For SAN management, AKN relies on HP OpenView Storage Operations Manager. Explains Kuijt, "We find it a major benefit to have one comprehensive environment to manage the whole SAN infrastructure, rather than a collection of standalone tools."

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Continuous air time with critical backup

AKN uses the HP ESL library for daily incremental backups as well as weekly, monthly, and yearly full backups – with full backups about 5 TB and growing. "Backup and recovery are important for business continuity; they keep us running 24x7," says Kuijt. "Users do make errors handling data, and we need to be able to recover data quickly, often from our backup tapes. For example, we can recover Microsoft Exchange e-mail at the single-message level, which is much faster than recovering a whole user mailbox."

As AKN and its broadcasting partners transition to an all-digital world, creating and maintaining a digital production platform for all the programming they produce is a top priority. The staff keeps video archive tapes on the ESL library for fast nearline access and sends backup copies off site in case a tape is destroyed. The digital video archive, separate from backup, is now 1 to 2 TB, and growing fast.

AKN worked closely with HP Services to design the new SAN, and with their local HP reseller, Nobel van Dijk & Partners, to implement the system. The team built the new SAN next to the old SAN, then copied the data and transferred it to the EVA array. "HP and Nobel made the transition to the new SAN very easy," recalls Kuijt. "The broadcast companies didn't see any downtime. They're not really aware of storage, and that's the way we like it."

About AKN

Located in Hilversum, The Netherlands, AKN (www.akn.nl) provides facilities and services for three public radio and television broadcasters. AKN and its broadcast partners share facilities for radio and television production and broadcasting, and AKN provides services, including IT, personnel, financial, and legal services. AKN has 150 employees and supports 1,100 employees in the three broadcasters.

Challenges

- Meet fast-growing storage needs

- Provide capacity for expanded digital video archive

- Solve connectivity and compatibility problems

- Consolidate a mix of HP and IBM storage systems into an all-HP system

Solution

Hardware

- HP StorageWorks 5000 Enterprise Virtual Array (EVA5000) for primary storage

- HP StorageWorks Enterprise Systems Library E-Series 712e (ESL 712e) library for backup and archiving

- HP OpenView Storage Management Appliance

- 80 ProLiant DL servers, models DL360, DL380, DL560, and DL580

- HP Compaq Evo desktops

- Cisco networking switches

- Apple Macintosh desktops

- Sun servers

Software

- HP OpenView Storage Management Appliance software

- HP OpenView Storage Operations Manager

- HP StorageWorks Command View

- Microsoft Windows Server 2003

- Sun Solaris

- Microsoft Exchange Server 2003

- CommVault Galaxy storage management software

HP Services

- HP Proactive 24 Service for storage area network (SAN), 24x7

- System design consultation

- System implementation by HP and reseller Nobel van Dijk & Partners

Results

- Enterprise Virtual Array provides capacity, performance, and business continuity

- Solution scales to 35 TB in a single storage device and saves expenses by reducing cabinet hardware and wiring

- Consolidated SAN solved connectivity and compatibility problems

- Performance of ESL library cut backup time in half and doubled I/O performance

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