VMware brought Åbo Akademi’s storage solutions to the modern age - easy maintenance and fast information access please both the maintenance and the users

Åbo Akademi, founded in 1918, is Finland’s third oldest university. Previously, the university had several physical servers which made the maintenance challenging. If there were issues with the physical server, data transfer to another server took a long time. The university was already using VMware’s virtualization solution, VSphere 6 and VCenter Enterprise Edition, and VMware VSAN was chosen as a hyper convergent solution to function as the new storage system. This way, the university gained a modular, easily upgradeable and extremely efficient storage environment which is simple to control.

Åbo Akademi is Finland’s third oldest university which operates in Turku, Vaasa and Pietarsaari. In addition, the university has activity for example in Helsinki. The university has 5,500 First Degree students and 820 graduate students. The staff consists of 1,250 employees, of which 660 work in teaching and research. All of the university’s applications, such as office programs and dozens of calculus and other specialist programs used in research work, function in the university’s data network, which is used by students and staff on a daily basis.

The Challenge
Åbo Akademi has two data centres, in Turku and Vaasa. In 2015, the storage infrastructure of the data centres was becoming obsolete and had to be replaced. The storage system had been built according to old standards which meant that physical frame servers, fiber switches and a storage system using NAS and SAN discs were being used.

Other servers had been virtualized using VMware vCenter and vSphere 6 Enterprise Edition but the storage system was functioning separately. This meant that its management and changes was tough and time consuming to conduct because of the manual updates. Expansion of the environment would have been expensive and difficult.

For the new storage solution, a modern system with a longer life span was required. After analysis, the software-based VMware VSAN solution was chosen

The solution
Åbo Akademi wanted to upgrade its outdated storage solution to a modern and easy-to-administer one. After studying different storage solutions, Åbo Akademi had three options, of which VMware VSAN solution was chosen as the best one. VSAN is a hyper convergent environment, in which the server, virtualization and storage solutions are merged and can be controlled from one place.

"In the VSAN environment we were able to get rid of separate disk systems and storage network switches. VSAN is modular, easy to expand and highly efficient. In addition, the controlling of the environment becomes easier when everything can be controlled from the same place," says Åbo Akademi’s head of ICT Björn Pundars.
VMWARE CASE STUDY

“The most important outcome is that after adapting the new storage system the users have been giving feedback about how the services work faster.”

Björn Pundars, ICT-manager Åbo Akademi

VMWARE FOOTPRINT

• VMware® VSphere 6 Enterprise Edition™
• VMware® VCenter Enterprise Edition™
• VMware VSAN™

APPLICATIONS VIRTUALIZED

All the internally maintained applications, such as

• Windows 7 and newer ones, up until version 10
• Microsoft Office, Adobe programs and a countless amount of applications used in research work, such as mathematics and statistics programs
• Databases

Åbo Akademi’s current servers have some operating life left, and reconstructing all of the servers at once would not have been beneficial because of cost reasons. In a hyper convergent environment, the old storage servers can be used up, but when renewing the servers, they can be easily updated to use more modern technology.

Compared to the previously used fibre-based solution VSAN is more affordable and easier to use.

“VSAN saves money on the unit costs, since for storage we can use ordinary x86 rack servers. The previous storage system required specialised architecture and equipment, and the cost was higher.”

Updating the storage system was easy with efforts just from the university’s own IT personnel. Since the update, the maintenance has been easy and quick to handle. Åbo Akademi was already using VMware vCenter server platform, on which the virtualized vSphere environments were run. However, the storage space could not be administered with them.

“Our old storage system consisted of physical servers which were difficult to administer, and which was done separately from the rest of the IT system. If the server got overloaded for some reason, the load alterations had to done manually. With the help of VSAN, our storage system will be connected to the rest of the infrastructure. We were looking for a high quality tool that would help us control the whole system easily. Faulty tools would simply waste our time,” Pundars says.

The transition to the new system went smoothly. VMware was already familiar and widely used at the university’s data centre, especially as the virtualization base for the servers.

“We carried out the changeover of the storage system during the summer, because that is a quiet time at the university. The main outcome was that after transitioning into the new storage system the users have given feedback about how the service has worked faster,” Pundars smiles.

Business Results & Benefits

Changing over to the hyper convergent VSAN environment has brought notable cost savings, for now ordinary x86 equipment can be used in the storage system instead of external disk systems and storage network. The modular system can easily be broadened, according to current need.

VSAN has improved the reliability of Åbo Akademi’s storage system and eased the time management of the IT personnel. The system has not crashed even under heavy load.

“The new storage system has now been in use for six months, and every single day we notice how easy it is to maintain and how liable it is. It takes less of working time to do things compared to the old system.”

Future prospects

Åbo Akademi has two data centres. Turku’s data centre was updated last year and this year it will be the turn for Vaasa’s data centre. The university is gradually giving up spinning hard disks and is adapting faster and more capacious Flash disks that represent SSD technology. In the intermediate stage, the university will be using a hybrid system, which uses both the spinning and the SSD disks.

“Adapting the use of SSD disks will delete the storage bottlenecks. The great speed and storage capacity of the SSD disks will enhance the use of the storage space by using deduplication and compressing, among other things,” says Pundars.