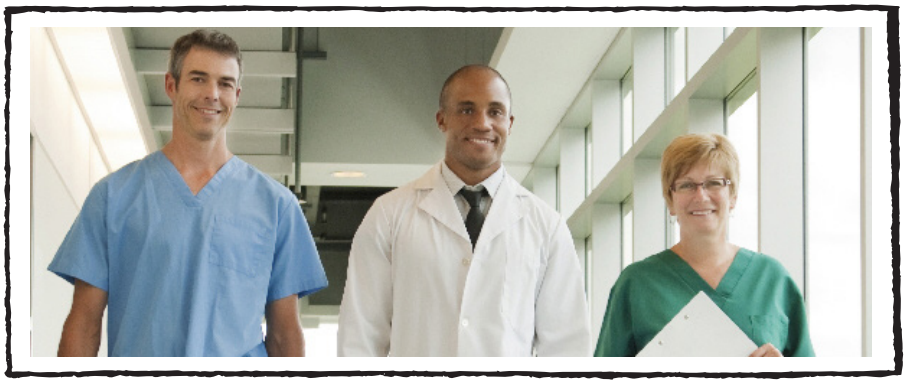
Success Story

UZ Leuven Provides 99.999% Availability While Reducing TCO for IT with NetApp



KEY HIGHLIGHTS

Industry
Healthcare

The Challenge
Accommodate 50% annual data growth and support partnership with other local healthcare providers to enhance patient care and reduce costs.

The Solution
Using a phased approach, migrate hospital applications and data to new NetApp® storage systems running the NetApp clustered Data ONTAP® operating system.

Benefits
- Provide 99.999% availability for critical hospital systems and images
- Enable enhanced quality of healthcare services and research
- Service and optimize infrastructure without impacting patient care
- Reduce TCO for IT services
- Scale to support exponential data growth

Customer Profile

University Hospitals of Leuven (UZ Leuven) is an academic hospital in the city of Leuven, Belgium, with 5 campuses, 8,900 employees, and more than 2,000 beds. One of the most respected healthcare providers and medical research facilities in Europe, UZ Leuven also acts as an IT service provider for nexuz health, sharing electronic medical records with other hospitals in the surrounding area.

The Challenge

Managing a data explosion

In healthcare, systems and data must be available 24/7. However, with more than 3PB of data to manage—growing by more than 50% each year—UZ Leuven frequently had to move data between storage systems to load-balance for capacity or performance.

"We're in the midst of a data explosion," says Reinoud Reynders, IT manager, infrastructure operations, UZ Leuven. "It started with radiology and other images, and now it's genomic research and pathology data that are driving up storage requirements. There is a lot of information waiting to be digitized, and new projects keep coming."

Although the hospital avoided downtime for critical systems, keeping data moving behind the scenes became difficult and time consuming for IT staff. "Managing storage silos was no longer a scalable approach for us," says Reynders. "We didn't want to increase headcount and operating expenses just to manage growing datastores. We'd rather direct those funds toward healthcare and research."

The Solution

Unified, clustered storage for nondisruptive operations

UZ Leuven deployed NetApp FAS6220 storage systems running the clustered Data ONTAP operating system, a unified, scale-out storage solution. The four-node cluster stores data and images for Windows®-based servers virtualized with VMware® vSphere®, as well as the hospital's Agfa picture archive and communication system (PACS) radiology image archive.

With clustered Data ONTAP, storage administrators can move data from one logical or physical storage device to another without disrupting operations. UZ Leuven can keep its shared storage infrastructure running while adding capacity, refreshing infrastructure, and balancing performance.

"NetApp clustered Data ONTAP is the next logical step in virtualized storage," says Reynders. "Because data is truly abstracted from the controllers, we have the flexibility to move data whenever we want, without impacting operations or patient care."

UZ Leuven also deployed a two-node cluster of NetApp FAS8040 storage systems to store data for other applications as they are migrated from legacy storage using NetApp SnapMirror® software to replicate data between the clusters. A separate two-node cluster of NetApp FAS8020 storage systems hosts database log files. "We chose NetApp FAS8000 series storage systems specifically to provide fast I/O," says Reynders. "This allows us to provide robust performance for our electronic patient record (EPR) system and other critical applications."

NetApp FAS6210 and FAS3170 systems support the application tier for the EPR system; Microsoft® Exchange Server; and Microsoft SQL Server®, Sybase, and Oracle® databases. "Our plan is to move everything over to NetApp clustered Data ONTAP eventually," says Reynders.

To upgrade NetApp storage controllers without the need to perform data migrations, UZ Leuven is using the NetApp Aggregate Relocate (ARL) feature of clustered Data ONTAP to move ownership of aggregates between cluster nodes. "The NetApp ARL feature works very well," says Reynders. "We upgraded our controllers without any hassles or downtime, which is important for us going forward."

To provide optimal performance for virtual machines, UZ Leuven uses NetApp Flash Cache™ controller-attached PCIe intelligent caching. On the storage aggregate that supports a VMware Horizon View™ virtual desktop infrastructure pilot—where both read and write performance is critical—UZ Leuven uses NetApp Flash Pool™ intelligent caching to automate storage tiering between solid-state drives and hard disk drives. "The performance boost we're getting from NetApp flash technologies is more than sufficient for our applications," says Reynders.

UZ Leuven standardized on NetApp storage due to its ease of use, with management tools such as NetApp Unified Manager and NetApp Virtual Storage Console for VMware vSphere. The hospital also appreciates the fact that NetApp works with a variety of protocols, allowing it to use NFS for VMware vSphere workloads and PACS images, CIFS for other images and file shares, iSCSI for block workloads, and Fibre Channel for the Sybase database that supports its EPR system.

Business Benefits

Providing 99.999% uptime for critical applications

With NetApp clustered Data ONTAP, UZ Leuven is able to keep critical data, images, and applications available 24/7 while retaining flexibility in data management. "NetApp clustered Data ONTAP lets us manage our data without downtime, enabling us to provide five-nines availability for hospital systems," says Reynders.

Maintaining consistent application performance

The quality of service feature of NetApp clustered Data ONTAP helps UZ Leuven maintain consistent application performance by specifying throughput limits and preventing workloads from affecting each other. "Quality of service is an essential feature that NetApp provides," says Reynders. "We can easily throttle rogue workloads to prevent them from saturating the cluster."

Enabling high-quality patient care

As UZ Leuven's data continues to grow, the hospital will be able to scale smoothly and enhance the already high quality of healthcare services and research. Management requirements will decrease as the hospital moves more workloads over to the NetApp clusters, allowing existing IT staff to manage more data.

"NetApp clustered Data ONTAP is the perfect platform for us to consolidate our storage and bring new applications online while actually reducing total cost of ownership for IT," says Reynders. "For us, NetApp is not just a vendor—they are an important partner that helps us run our business more efficiently."

SOLUTION COMPONENTS

NetApp Products

NetApp FAS8020, FAS8040, and FAS6220 storage systems with clustered Data ONTAP 8.2

NetApp FAS6210 and FAS3170 storage systems with Data ONTAP 8

NetApp OnCommand® Unified Manager

NetApp Flash Cache

NetApp Flash Pool

NetApp SnapMirror

NetAppVirtual Storage Console for VMware vSphere

Environment

Applications: Internally developed EPR system, Agfa PACS, Microsoft Exchange Server 2013

Databases: Microsoft SQL Server, Oracle, Sybase

Server platforms: Windows Server® 2012/2008 R2, Solaris

Server virtualization: VMware vSphere 5.5

Desktop virtualization: VMware Horizon View 5.2

Protocols

NFS, CIFS, iSCSI, FC-SAN

NetApp Services

NetApp SupportEdge Premium

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