



SUCCESS STORY
Healthcare



UZ LEUVEN | PROBLEM SOLVED

Establish a high-performance, highly scalable data management system that enables Belgium's largest hospital to make sure of the highest level of patient care by sharing its technology infrastructure and community software with hospitals across Belgium.

UZ Leuven Revolutionizes Collaborative Healthcare in Belgium

University Hospitals of Leuven (UZ Leuven), an academic hospital in Leuven, Belgium, is one of the most respected healthcare providers and medical research facilities in Europe. With five campuses, 8,900 employees, and more than 2,000 beds, UZ Leuven also acts as an IT service provider for nexuzhealth, sharing electronic medical records with other hospitals in the surrounding area. To scale nexuzhealth to connect every hospital in Belgium through a common electronic patient record system, UZ Leuven leverages its NetApp technology platform.

Storage latency reduced
from

100ms ▶
<0.4ms

Support

1PB

annual data growth rate

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 **NetApp®**

“With NetApp All Flash FAS, we can improve the quality of healthcare in our own hospitals and others throughout the region by offering high-performing electronic patient records and virtual desktops to healthcare providers.”

Reinoud Reynders
IT Manager, Infrastructure and Operations at UZ Leuven

Imagine a healthcare delivery system that maintains a single electronic health record system, where facilities and services aren't duplicated and where all healthcare providers share information about best practices and procedures as if they were a single entity. Belgium's largest healthcare provider, UZ Leuven, is bringing that groundbreaking vision to life with nexuzhealth.

A centralized, shared electronic patient record (EPR) for each patient can foster better communication and care coordination among clinicians across disparate healthcare settings. With a complete view of a patient's health, providers make faster, more informed treatment decisions.

Storing collected patient information has led to a proliferation of data that hospitals are now challenged with managing. In addition, many of Belgium's smaller hospitals operate on aging systems, lacking the infrastructure or the capital to invest in government-mandated EPR. UZ Leuven, in contrast, is well equipped to share

its cutting-edge EPR as a service through nexuzhealth.

Through nexuzhealth, partnering hospitals are better able to manage the increase in patient data and maintain consistency of quality and safety systems, making sure of cross-checking of critical patient health information concerning medications, dosages, and allergies. Hospitals also can save time and money for their patients and for themselves by not repeating tests that were performed at other locations. Similarly, hospitals can specialize in certain types of surgery, reducing capital expenditures in technology infrastructure.

What started as a network supporting 2,000 beds has grown tremendously since 2011, with 16,000 beds expected to be supported at the end of this year. Currently 20 of Belgium's almost 100 hospitals share UZ Leuven's EPR system and have common medical records for their patients. That figure is expected to grow by 50% by the end of 2018. With new incentives by the Belgian government for

hospitals to adopt digital technologies and collaborate, the number will continue to expand.

Every hospital that joins the network increases patient data, adding 6TB to the EPR database every year. [Using NetApp All Flash FAS and its ONTAP® data management software allows UZ Leuven to add more users and absorb the data impact of new facilities—in all, data grows nearly 1PB annually—without compromising EPR performance or patient care.](#) 

SPEEDING ACCESS TO CRITICAL INFORMATION

“Our electronic patient records system is our most important application, and the SAP ASE database that stores the patient records represents the heart of our organization,” says Reinoud Reynders, IT manager, Infrastructure and Operations at UZ Leuven. “Without it, the hospital stops working. Our developers are constantly adding new features, and we might soon need to support as many as 12,000 concurrent users. There can't be any bottlenecks to performance.”

Moving that database to AFF8040 storage systems resolved such performance issues. [“Having a more responsive storage system lets us run more complex queries more quickly, combine different types of patient data, and present information in different ways to make it more useful to our healthcare practitioners,”](#) Reynders says. 

NetApp All Flash FAS enables more automated cross-checking and faster, more detailed analysis of patient and drug information, such as comparing lab results with medications. Data ONTAP® can provide consistent performance profiles for different workloads by using storage quality-of-service policies. As a result, a growing network of nexuzhealth caregivers can continue to make informed and confident decisions about patient care.

As additional hospitals join, physicians can also collaborate to discuss ways to improve quality of care

across the entire network. Shared data contributed by each hospital gives new insight to best practices. “We can easily benchmark reports and see where some hospitals work better than others,” says Reynders. “And we can dive in to find out why this is.”

MAKING SURE OF CONSISTENT ACCESS

Data ONTAP 99.999% availability makes sure that the healthcare staff at all hospitals have immediate access to current, critical patient data, images, and applications. Disk I/O is critical for workloads, including database maintenance and startup, as well as performing online checks.

Another disk I/O-intensive activity is the healthcare system’s growing “patient angels” program (wintermute), which runs automated scripts to monitor patient treatments and medications. Program data is partnered with the

BUSINESS BENEFITS

- Allows caregivers to make faster, more confident decisions based on real-time data
- Enables the hospital to triple the number of virtual desktops deployed, contributing to better patient care and increasing management efficiency
- Improves virtual desktop performance a hundredfold by eliminating I/O storms
- Provides 99.999% availability for critical hospital systems and images
- Enables enhanced quality of healthcare services and research
- Services and optimizes infrastructure without affecting patient care
- Reduces TCO for IT services
- Scales to support exponential data growth

“With the addition of nexuzhealth and the growth that we anticipate, availability is even more important than before, and that’s where Data ONTAP is very important for us.”

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IT Manager, Infrastructure and Operations at UZ Leuven

information gathered from smart devices to make sure appropriate medical advice is given for particular situations. UZ Leuven is working to connect physicians with information from home-based monitors. This gives healthcare providers access to real-time data coming from, for example, a patient's blood pressure monitor. Combining that data with additional information about prescribed medications and lab results on file, the system can send alerts if something goes wrong and provide advice in real time if needed.

BUILDING FOR THE FUTURE OF HEALTHCARE

Using NetApp ONTAP data management capabilities, UZ Leuven is adding predictive analytics to improve its care and operations. Data analytics will also help optimize nurse scheduling. In the future, UZ Leuven plans to offer

further services to nexuzhealth members, currently conducting a pilot in which five hospitals share an application that helps them manage radiology services, an application that could later be extended to the entire network.

“With the addition of nexuzhealth and the growth that we anticipate, availability is even more important than before, and that’s where Data ONTAP is very important for us,” says Reynders.

When necessary, UZ Leuven will add a third server for disaster recovery to make sure of customer service-level agreements and support its virtual desktop offerings for high-risk environments such as intensive care, as a service to nexuzhealth. With the virtual desktops providing access to important patient data and services, peak performance is crucial. NetApp All

Flash FAS reduced average storage latency to less than 0.4ms. The dramatic performance was immediately evident, especially during periods of heavy I/O.

“With our NetApp infrastructure, we can improve the quality of healthcare in our own hospitals and others throughout the region by offering high-performing electronic patient records and virtual desktops to healthcare providers,” says Reynders. “We don’t see NetApp as just a vendor. For us, NetApp is a true partner, and that’s very important for us.”

SOLUTION COMPONENTS

NETAPP PRODUCTS

NetApp All Flash FAS

NetApp Data ONTAP

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