FUJITSU

CASE STUDY
VIRTUALIZATION AT MULDENTALKLINIKEN

»WE COUNT ON HOMOGENEOUS HARDWARE FROM FUJITSU, LOW MAINTENANCE SOFTWARE AND REDUCED EXPENDITURE ON ADMINISTRATION. VIRTUALIZATION SIMPLIFIES ADMINISTRATION AND MAKES US MORE FLEXIBLE.«

Thomas Enderlein, Head of the EDV Department at Muldentalkliniken GmbH

THE CUSTOMER

Muldentalkliniken GmbH is a Saxon group of companies with a focus on intensive medical provisioning and long-term care.
www.kh-grimma.de

THE PROJECT

IT centralization and storage solution virtualization: the outdated Direct Attached Storage system needed to be replaced by a fail-safe Storage Area Network (SAN) without interrupting the ongoing hospital operations.

THE SOLUTION

Muldentalkliniken counted on end-to-end server technology from Fujitsu, virtualization by Citrix plus a storage solution from DataCore.

THE EXPANDING MULDENTALKLINIKEN PROFIT FROM A VIRTUAL COMPUTING CENTRE AND AN EFFICIENT STORAGE SYSTEM

The IT department of an expanding clinical company with five locations, 550 employees and 35,000 patients per year has no time for downtime: comprehensive medical care and innovative OP methods are constantly reliant on ultra-modern technology and the most up-to-date data. In their hospitals, the Muldentalkliniken doctors and carers are not simply focused on providing basic medical care – both locations are distinguished by their own medical focal points, which respectively are supported by a multitude of different appliances. The company also has an outpatients care service and two nursing homes. Due to the increasing digitalization of the patient data in the KIS (Hospital Information System) and PACS (Picture Archiving and Communication Systems), the clinics are constantly in need of cost-effective disc storage. Patients and employees profit from the SAN (Storage Area Network) when X-ray images can be loaded from the archive at each location and in every department – instead of sending staff into the archives on foot to search for an X-ray image so that it can be available the following day – as was done before. However, the challenge for Muldentalkliniken was not simply to establish central data processing for its five locations, but also to manage the changeover of systems without any interruption, so as not to endanger in-patient care. In addition, the expenditure on system maintenance and administration had to remain as low as possible.

HOMOGENEOUS HARDWARE BY FUJITSU

Today, for its entire central data processing, the clinical group relies on server technology from Fujitsu, which forms the basis for the operation of two virtualization solutions: Citrix XenApp and SANmelody from DataCore. Fujitsu SELECT Partner Kiefel Informationssysteme GmbH & Co. KG from Frankenberg managed the whole project development. The PRIMERGY servers and the FibreCAT RAID systems have proved themselves not just as perfectly suited for the set-up and operation of virtual machines – both the data migration and the necessary hardware updates can be conducted during ongoing operations without any difficulty. "We have four staff members overseeing the entire EDV for five locations, and that's 24 hours a day, 365 days a year," says EDV Head Thomas Enderlein. "That's why we count on homogeneous hardware, low maintenance software and minimal administrative effort. At the same time, in the medical field we make the highest possible demands on the availability of the systems."

EFFICIENT STORAGE SOLUTION WITH HUGE COST ADVANTAGES

As a strategy, virtualization does not simply involve significant cost advantages; the changeover from Direct Attached Storage (DAS) to a fail-

ADVANTAGES FOR THE CUSTOMER

- High level of system stability and high availability
- Cost savings thanks to minimal hardware investment with high degree of appliance utilization
- Updates during ongoing business operations
- Low cost for maintenance and administration

HARDWARE, SOFTWARE, SERVICES

- Server: 6x PRIMERGY RX200 (2 CPUs) and RX100 (1 CPU)
- Storage: FibreCAT S80, SX30, SX60
- Storage virtualization: SANmelody by DataCore
- Citrix XenServer 5.5 with the management platform Citrix Essentials for XenServer
- Citrix XenApp

safe SAN is easier for the clinic, with its numerous essential IT applications, to realize than the corresponding hardware alternatives. Thus, with a relatively low investment in infrastructure, it was possible for the Muldentalkliniken to keep pace with the constantly growing demands on its central IT system: the DataCore software runs on PRIMERGY servers with FibreCAT S80 disc shelves, which are initially connected via 8 Gbit switches with 32 ports. Today, six physical PRIMERGY rack servers, each with one or two CPUs, are divided between the computing centres. The storage capacity comprises more than ten Terabytes, respectively accommodated in two FibreCAT S80, SX30 and SX60 systems from Fujitsu. In part, up to three Citrix XenApp servers are now running on server hardware with two Quad-Core processors. In total, around 50 virtual servers were created – which results in a cost advantage of up to 100,000 euros within three years for the clinical group.

TROUBLE-FREE DATA MIGRATION AND HIGH AVAILABILITY

Among the most important arguments for centrally based IT with virtualization in a hospital is the uninterrupted availability of all systems. The original data migration from the old disc shelves to the SAN was already achieved during ongoing business operations. After two days of preparation, the new disc subsystems were simply switched over into running operations. "This took place within a few minutes through shutting down the old systems and booting up the new SAN systems. Probably none of the users even noticed," says IT Head Thomas Enderlein happily. Since then, the solution has proved itself as a highly available, flexible SAN that, in a redundant configuration, offers the highest level of security against breakdowns. Enderlein was already convinced of this during an earlier test: "In the middle of copying a two Gigabyte file, I pulled the plug out of the wall and I can confirm: even when a Windows system crashes, the SAN keeps on running."

MORE STORAGE FOR MEDICAL SYSTEMS

All hardware updates took place without interruptions, since the new hardware was already integrated into the respective domains before Enderlein's team switched off the old hardware. In the virtual SAN, the heterogeneous hardware is used with FibreChannel, Ultra-SCSI and SATA disc subsystems, depending on the performance requirements. Today, this allows the four EDV staff members to set up new virtual machines within minutes and to equip them with highly available virtual memory, which itself can be expanded during ongoing operations. New systems with desktops, servers and storage can be flexibly created from the respective resource pools during significant hardware utilization. Thomas Enderlein reports: "It takes us just a few minutes to input updates for hundreds of identical desktops or, for example, to set up a special server for the endoscopy department." His assessment of the virtualized Fujitsu infrastructure is correspondingly positive:

"VIRTUALIZATION BASED ON FUJITSU SERVERS AND STORAGE SYSTEMS REDUCES HARDWARE AND SOFTWARE COSTS, SIMPLIFIES ADMINISTRATION AND PROVIDES US WITH THE FLEXIBILITY TO BE ABLE TO REACT QUICKLY AND EFFICIENTLY TO DEMANDS."

PROJECTPARTNER

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