



University Clinic Leipzig speeds SAP application response with Fusion ioMemory™ PCIe solutions

Solution Focus

- Healthcare
- SAP ERP system

Summary of Benefits

- No expensive storage capacity upgrades
- Individual applications can be accelerated as needed

Products

- FUJITSU Server PRIMERGY RX600
- FUJITSU Server PRIMERGY RX4770
- Fusion ioMemory™ PX600 PCIe application accelerator

“Our existing storage system was under a huge amount of strain when we virtualized our SAP environment, and response times were high. But we managed to reduce latency to just a few milliseconds by using SSD storage media in the servers.”

Daniel Pfuhl,
Head of IT, Universitätsklinik
(University Clinic) Leipzig data center

Summary

During the Universitätsklinikum (University Clinic) Leipzig's conversion to a virtualized data center infrastructure, it became clear that the existing storage system was not powerful enough to provide the fast response times needed for its SAP applications. Using Fusion ioMemory™ PCIe solutions further reduced read and write latency for CPU-intensive applications following virtualization.

Background

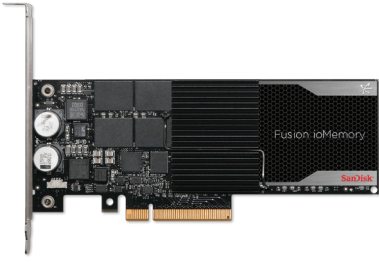
The Universitätsklinikum Leipzig (UKL) is a full-service hospital which covers the entire spectrum of medical care, with the exception of cardiac surgery and pediatric cardiology. Over 6,000 people are employed across the hospital and its research and teaching departments at Leipzig University's faculty of medicine. The UKL is one of two full-service hospitals in the German state of Saxony, and is therefore an important center for inpatient and outpatient treatment in the region. Two data centers on the hospital campus form the core of its IT systems.

The Challenge

The UKL's data centers had been gradually converted to virtual servers and the existing server had been replaced with the FUJITSU Server PRIMERGY RX600 and FUJITSU Server PRIMERGY RX4770. However, the hospital's storage resources were no longer sufficient. “At the time we were working on the virtualization project, both of our storage systems were under so much strain that we had no reserve capacity at all,” said the Head of IT, Daniel Pfuhl. This meant that response times had become very poor and individual jobs were taking far longer than users expected. The SAP system had up to 2,000 users accessing it at any one time and the database had reached 600GB. “We started looking for server-side caching solutions. These cache the majority of the load from the virtual machines and therefore relieve the strain on the storage system,” explained Pfuhl.

The Solution

The hospital chose a solution from PernixData which the department manager felt would work well with the solution from SanDisk® and FUJITSU. It now uses a 5.2TB Fusion ioMemory™ PX600 PCIe application accelerator from SanDisk in each of its four FUJITSU Servers and four 400GB SSD drives in each of its four FUJITSU hosts. Of the peak load of 5,000 IOPS for the hospital's applications, approximately 4,800 IOPS—90 percent—now run on the flash media, and 200 IOPS run on the storage system.



Fusion ioMemory™ PX600 PCIe application accelerator

"It is exactly what we hoped for. The overall costs proved to be significantly lower than investing in a new storage system would have been. So we can put off making the larger investment for a while yet."

Daniel Pfuhl,
Head of IT, Universitätsklinik
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At SanDisk, we're expanding the possibilities of data storage. For more than 25 years, SanDisk's ideas have helped transform the industry, delivering next generation storage solutions for consumers and businesses around the globe.

The main challenge was that the hospital needed very high capacity storage media. "We determined that the 400GB storage cards we had previously purchased would not have provided enough capacity to accelerate the SAP system," says Pfuhl. The reason was that the majority of the data in the 600GB database is accessed on a daily basis and changes constantly. "This meant that we needed the largest capacity flash drives possible to run the SAP system and other virtual machines." However, no flash storage of this kind had been approved at the time the hospital was installing the FUJITSU Server PRIMERGY RX4770.

The Results

Fujitsu worked with SanDisk to test the PCIe flash cards the hospital wanted to use, and issued a special approval as a result. This was then certified so that support could be provided. Once the caching solution was installed, users' response times improved immediately and are now down to less than a millisecond. The solution has been running reliably with no issues for more than a year.

The hospital will continue using flash drives when the time comes to invest in additional storage. "We have seen that our SAN architecture—with its central SAN running over Fibre Channel switches and various intermediate points—creates a chain of latency points that really add up," Pfuhl explained.

"Having flash media in the server gives us the option to accelerate certain latency-sensitive applications on individual virtual machines," said Pfuhl. "We can even activate read and write acceleration separately. You can't get down to this granular of a level with a central storage system." The alternative would have been to, "invest lots of money in an additional storage system to improve the performance of the central storage system. But that would have been significantly more expensive".

The original plan was to use the SSDs to accelerate the SAP applications and thereby improve response times after the virtualization process, without having to invest a lot of money into the storage infrastructure. But the team members were so impressed with the results that further CPU-intensive applications such as SQL Server for SharePoint and other databases are now being supported by the new solution too. The system is certified and has been running reliably for over a year.

"It is exactly what we hoped for. The overall costs proved to be significantly lower than investing in a new storage system would have been. So we can put off making the larger investment for a while yet," Pfuhl told us.

Information based on the translation from the original German case study.

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