



CASE STUDY

DKFZ



Business Transformation

Employees working at other clinics and at the German Consortium for Tumor Diseases can work remotely and quickly access sensitive data within a secure environment.

Geo

EMEA / Germany

Industry

Pharmaceuticals / Life Sciences

Company

*DKFZ (Deutsches Krebsforschungszentrum— German Cancer Research Center)
www.dkfz.de*

Use Case

- VSI—VMware® vSphere®
- VDI—VMware® Horizon
- Microsoft® SQL Server

DKFZ (the German Cancer Research Center) improved its storage environment with an all-flash solution from Pure Storage. The new storage infrastructure, consisting of five FlashArray™ arrays, delivers outstanding performance and cost savings in terms of deduplication, encryption, and compression. The special design of the server virtualization requires a fast system with synchronous mirroring to distribute the VMware farm to two locations, which now can be accomplished with Pure Storage. Sensitive data is now available more quickly and easily to external employees.

Challenges

- Upgrade legacy storage platform with a questionable future roadmap.
- Achieve better storage

performance and efficient access to data to accelerate research activities.

- Reduce support requirements and operating costs, including by eliminating disk replacement.

IT Transformation

- With the five FlashArray arrays distributed over two data centers, the storage management effort at the DKFZ has been significantly reduced.
- The DKFZ was able to achieve higher stability and faster access times.
- The DKFZ was also able to reduce space requirements in the data centers by 50 to 70 percent.

All-Flash Storage Supports Cancer Research

More than 450,000 people are diagnosed with cancer each year





in Germany. Cancer is a unique disease that is challenging to research and varies from patient to patient. This is a huge task to undertake for the German Cancer Research Center (Deutsches Krebsforschungszentrum, DKFZ). The DKFZ is the largest biomedical research institute in Germany and a member of the Helmholtz Association of German Research Centers. Across more than 90 departments and research groups, 1,200 scientists research the mechanisms of cancer, identify risk factors, and try to find strategies to prevent people from getting cancer. They develop cutting edge approaches to make treatment of cancer patients more successful.

The DKFZ is a world-renowned and globally recognized research institution. In 2008, the Nobel Prize for Medicine was awarded to Professor Harald zur Hausen,

“The decisive factors for us in switching to all-flash memory were the options for deduplication and compression as well as the virtualization of servers, which is excellently supported by Pure Storage.”

Tobias Reber

Core Facility IT, Central Server Division

who discovered that human papilloma viruses (HPV) cause cervical cancer. In 2014, a DKFZ researcher received the highest scientific award for the second time: Professor Stefan W. Hell was awarded with the 2014 Nobel Prize in Chemistry for his groundbreaking work in the field of ultra-high-resolution fluorescence microscopy.

To support these groundbreaking discoveries, the DKFZ's data center infrastructure is critical for research operations. Geo-redundancy, synchronous mirroring, and ease of administration are three important success factors.

The DKFZ manages its own data architecture, which was previously based on HPE Lefthand storage. The research institution had good experiences with this system but questioned the future viability of this solution. For this reason, the IT department evaluated possible alternatives to replace the existing storage infrastructure. Key requirements included the support of VMware and GPFS metadata (General Parallel File System), a

cluster file system from IBM.

Tobias Reber, from DKFZ's core facility IT in the central server division, explained the specific storage challenges that Pure Storage had to solve: “Our server virtualization design required a fast system with synchronous mirroring to distribute our VMware farm to two locations one kilometer apart.”

Pure Storage Offers Excellent Support and a Convincing Proof of Concept

All-flash technology was chosen for its high performance, while the decisive factors in selecting Pure Storage were its ease of use, high deduplication and compression rates, the quality of pre-sales support, and a convincing proof of concept trial.

The DKFZ decided to purchase five FlashArrays to be used in conjunction with HPE's existing server and network systems. The implementation went smoothly and took a minimal of time for installation. Along with VMware, Microsoft SQL Server is one of the most important workloads





running on the FlashArrays. The administrators manage the storage directly via the Pure1® interface.

“Pure Storage hardware was very quick to install, even though we have multiple systems, and this was an intervention in an existing infrastructure. The installation had no impact on the running system and could be done during normal working hours. As the three most important technical advantages of Pure, we see the excellent performance in terms of deduplication, encryption and compression. The key difference in system availability is that no

“It’s been a very long time since anyone has seen an infrastructure component that has had the large impact on application performance that flash memory has.”

Scott McIsaac,
Chief Information Officer

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disk replacement is required. Hard drives fail more often, which previously affected availability and reliability and caused extra work,” said Reber.

Storage Management Effort Significantly Reduced

With the five FlashArray arrays spread across two data centers where server virtualization takes place, the storage management effort at DKFZ has been significantly reduced. At the same time, higher stability and fast access times were achieved. The DKFZ was also able to reduce space requirements in the data centers by 50 to 70 percent.

One of the FlashArray arrays is intended for their VDI infrastructure that has 500 users, which resulted in considerable advantages. “We are a large research institution in the basic research area. The connection of workstations in

hospitals with the IT of the DKFZ and their own employees in external hospitals requires direct access to data and applications of the DKFZ,” explained Reber.

Thanks to the VDI environment based on VMware Horizon, DKFZ employees working at other clinics and at the German Consortium for Tumor Diseases can work remotely and quickly access sensitive data within a secure environment.

Sensitive data is now available more quickly and easily. Decisive for us in the conversion to all-flash memory were the possibilities of deduplication and compression as well as the virtualization of servers, which is excellently supported by Pure. In addition, we were able to implement redundancy of the storage system as planned,” summarized Reber.

Due to the positive experience with Pure Storage, the IT department at DKFZ is already considering completely replacing their remaining disk systems with all-flash from Pure Storage.

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