CUSTOMER CASE STUDY

> “Thanks to the solution from Fujitsu and Microstaxx, we have an open, flexibly scalable and high-performance storage platform that enables us to reliably adhere to our nightly backup time windows.”
>
> **Gerd Schnapka**
> **Head of GNZ**

In close collaboration with Fujitsu, SELECT Partner Microstaxx designed and implemented a high-performance, highly available Fujitsu ETERNUS storage system for the GNZ.

At a glance

Country: Germany
Industry: IT for science and research
Founded: 2002
Website: www.gnz.mpg.de

Challenge

The GNZ manages enormous volumes of scientific data. To do this, the service provider needs a high-performance data storage system as well as a reliable backup solution that can back up the data overnight.

Solution

Microstaxx designed and implemented a high-performance and highly available overall storage system in close collaboration with Fujitsu. It consists of a Quantum StorNext system and a flexibly scalable SAN storage array with four Fujitsu ETERNUS DX200 hybrid storage systems.

Benefit

- Reliable administration, backup and archiving of enormous data volumes
- Open, flexibly scalable and powerful storage platform
- Reliable adherence to nightly backup time windows
- Extremely high data throughput rates of 5 GB/second
- Seamless connection with low latency periods via the DLC protocol
- Eliminates licensing costs

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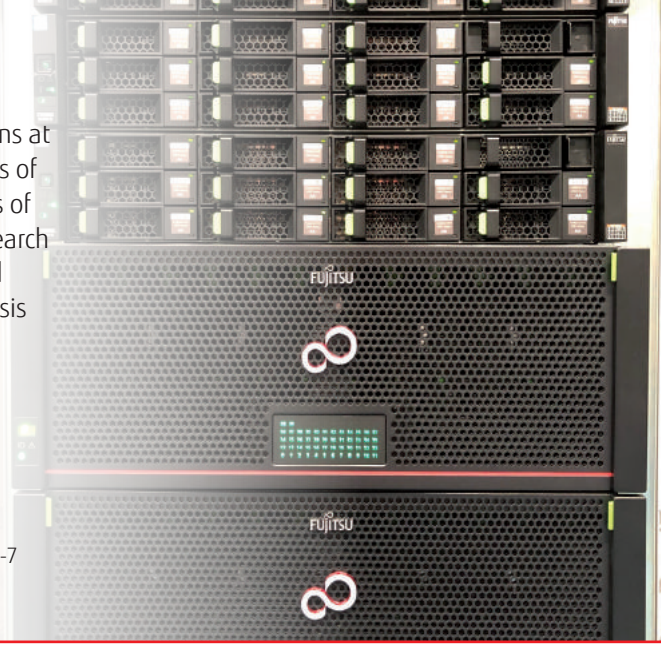
Customer

The Joint Network Center (GNZ) of the Berlin-Brandenburg Max Planck institutions at the Fritz Haber Institute (FHI) of MPG e.V. provides services relating to all aspects of network infrastructure, IT security and data storage for all institutes and facilities of the Max Planck Society (MPG) in Berlin and Brandenburg. The FHI is a basic research institute that grew out of the Kaiser Wilhelm Institute for Physical Chemistry and Electrochemistry in Berlin-Dahlem. Its research focuses on understanding catalysis processes at the molecular level and in molecular physics.



Products and services

- F4 x FUJITSU ETERNUS DX200 SAN storage systems with approximately 1.15 PB of usable capacity
- Quantum StorNext Xcellis Workflow Director as the central StorNext instance
- Quantum StorNext gateway for the high-performance connection of the institutes in Berlin and Potsdam via the DLC protocol
- Quantum Scalar i6 tape library with 6 x LTO-7 tape drives for secure archiving

Backing up 120 terabytes of critical data overnight

The GNZ administers large volumes of scientific data for the institutes and facilities of the Max Planck Society in its Berlin and Golm locations. The service provider operates a VMware-virtualized server farm for this purpose, which hosts the applications and data for scientific calculations. "The ability to reliably store enormous volumes of data and have ready access to it are extremely important to us," explains Gerd Schnapka, who heads the GNZ. "We have to back up around 120 terabytes of critical research data night after night." The GNZ uses the Veeam data management solution for this purpose. In a second step, the data is then written to tape and archived for long periods of time. The facility in the Brandenburg town of Golm, located 50 kilometers away, also needed to be connected. To quickly back up the data from there, a high-performance data link with high throughput rates was needed.

The GNZ requires an extremely reliable backup architecture and a powerful storage solution as the hardware base in order to meet these requirements. Due to the huge growth in data volume, the existing infrastructure was no longer powerful enough to adhere to the desired nightly backup time windows. While searching for a suitable solution, the GNZ's IT managers met with the IT system provider and SELECT partner Microstaxx for an intensive consultation. In the end, they chose to go with a comprehensive overall concept that combines Quantum and Fujitsu technology. Microstaxx had already successfully implemented this solution architecture for a number of prominent customers, particularly in the fields of science and research.

Overall solution consisting of Quantum StorNext and Fujitsu ETERNUS

Together with Microstaxx experts, the GNZ first carried out an in-depth proof of concept process, in which they successfully tested all components involved. The IT service provider then delivered and installed the StorNext Demo Rack, which Quantum Professional Services configured for all application scenarios. Following the successful completion of the test run, the solution was fully implemented.

Henning Dorsch, an account manager with Microstaxx, explains how the solution is structured: "At its heart is a Quantum StorNext Xcellis Workflow Director, which serves as the central StorNext instance. A Quantum StorNext gateway supplies the powerful connection for the institutes in Berlin and Golm. A Quantum Scalar i6 tape library with six LTO-7 tape drives and one EDLM media drive ensures the data integrity of the entire archive. A storage cluster made up of four FUJITSU ETERNUS DX200 storage systems with around 1.15 petabytes of usable capacity forms a solid hardware base."

The data of the entire virtual infrastructure, which has a daily volume of 120 terabytes, is now written from the Quantum StorNext file system to the primary ETERNUS disk memory via Veeam. The backups on the hard disk are then transferred to a Quantum Scalar i6 LTO-7 tape library for archiving. In addition, the facility in Golm is connected via the StorNext DLC protocol. "Certain latency periods usually occur when transmitting data over a distance of 50 kilometers," says Harry Wengner, account manager and project manager with Microstaxx. "The DLC protocol, however, ensures an extremely high-performance data throughput at 900 MB/s and is absolutely latency-tolerant."

Reliably backing up and archiving enormous data volumes

Ever since the new infrastructure went live, the GNZ has benefited in different ways. Enormous quantities of scientific data can now be reliably administered, backed up and archived. "Thanks to the solution from Fujitsu and Microstaxx, we now have a high-performance storage platform that enables us to reliably adhere to our nightly backup time windows," Gerd Schnapka confirms. The system implements extremely high data throughput rates of 5 GB/second, which has been verified through performance tests. This means that all locations are seamlessly connected to the storage systems. Another advantage is that, while conventional NAS systems are subject to expensive licensing, the combination of Fujitsu storage hardware and the Quantum StorNext file system does not require a capacity license, which saves the customer a great deal of money. Not least, the GNZ was able to grow from a pure infrastructure provider to a real IT service provider for the Max Planck institutes in Berlin/Brandenburg, thanks to the new solution. "Demand is growing," says a pleased Gerd Schnapka. "And because of the system's easy administration and scalability, we can operate and expand it without problems."

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