FUJITSU

Case Study
Fraunhofer IWES

» Our researchers' virtual desktop is becoming precisely what it always should have been: a service. Today, none of our researchers want to be told when to work, where from or what equipment to use. In view of this, performance, security requirements and operating costs are very important for our virtualized data center – which is why we use PRIMERGY servers and ETERNUS DX storage systems from Fujitsu «

Christian Langer, CIO, Fraunhofer IWES

THE CUSTOMER

Country: Germany
Industry sector: Scientific research
Founded: 2009
Website: www.iwes.fraunhofer.de

Fraunhofer IWES

CHALLENGE

To create an IT infrastructure that was able to support access to the Fraunhofer IWES administrative network from any location and any device in order to increase flexibility and improve collaboration.

APPROACH

Server virtualization on the basis of SUSE Linux Enterprise Server HA clustering, Fujitsu PRIMERGY servers and ETERNUS storage systems.

The customer

Fraunhofer is Europe's largest application-oriented research organization. One of its most well-known research successes is undoubtedly its development of the mp3 standard for audio file compression. One of the organization's Germany-based institutes is the Fraunhofer Institute for Wind Energy and Energy System Technology (IWES), whose research activities cover wind energy and the integration of renewable energies into energy supply structures. The two key locations of Fraunhofer IWES are Bremerhaven and Kassel.

The challenge

"Bring your own device" and "collaboration" are the two major focuses of IT activities at Fraunhofer IWES. As some of the institute employees also have to work remotely within Germany and in other countries where the Fraunhofer IWES conducts its research projects, it had become necessary to set up an infrastructure that would support permanent access to the IT systems from any device. The objective was to store all the data securely at the two data centers and improve collaboration, specifically between the employees working on site at the institute and the researchers working remotely.

The solution

Fujitsu SELECT partner Login-IT designed a virtualization solution for the administrative network of the Fraunhofer IWES in Kassel. This solution was based on the open source Hypervisor Xen integrated within the SUSE Linux Enterprise Server. The required hardware included PRIMERGY RX300 S7 servers and ETERNUS DX90 storage systems. The two locations each have three servers and three storage systems. The servers are designed as HA system clusters. Data is replicated between the HA systems to improve redundancy. Fujitsu ETERNUS CS800 systems are currently being tested in respect of swift recovery.

THE BENEFIT	PRODUCTS AND SERVICES
■ Greater flexibility thanks to the free choice of devices ■ Higher redundancy ■ Improved data security as a result of central storage at the data center ■ Reduced administrative effort ■ Lower energy costs due to economical systems	■ Servers: 6 x PRIMERGY RX300 S7 rack servers ■ Storage systems: 6 x ETERNUS DX90 ■ Virtualization solution: SUSE Linux Enterprise Server HA cluster ■ Collaboration software: Novell Open Enterprise Server 11, Novell Groupwise 2012, Novell Vibe, Novell Filr ■ Service: Design and installation by Fujitsu SELECT partner: Login-IT (Kirchheimbolanden, Mainz, Germany)

The benefit

Whether it's marine energy research off the coast of Indonesia or wind energy research at Germany's first offshore test wind farm to the north of Borkum, the researchers at Fraunhofer IWES are working hard all around the world. *"We were looking to generate added value from our IT systems by ensuring that the scientists all around the world are able to access their calendars, documents and e-mails, while aiming to remain flexible with respect to the choice of device. Whether at home or at work, we ask the same of our technology: maximum flexibility and mobility,"* explains Christian Langer, CIO at Fraunhofer IWES. Collaboration was also key. The aim was for every employee, whether they have a smartphone, tablet or laptop, to be able to access the institute's IT systems from any location. "Bring your own device" has therefore become a reality at Fraunhofer IWES. *"A scientific paper can be sent to all conventional devices,"* Langer continues. This is something that is particularly important for a research organization because *"at the end of the day, creating knowledge is what we do."*

The administrative network at Fraunhofer IWES is based on high-performance PRIMERGY RX300 S7 servers connected to ETERNUS DX90 storage systems by fast FibreChannel technology. *"The virtual machines run perfectly on this Fujitsu hardware,"* notes Langer. *"We consolidated our data center resources as part of the virtualization process, meaning that we now have less hardware that offers better performance."* In addition to saving energy, it also makes administration easier. The Fujitsu servers are easy to maintain thanks to the included manageability software ServerView. Also, the use of SUSE Linux Enterprise as the server operating system, including XEN virtualization and the Enterprise HA Extension of SUSE, permits highly efficient utilization of hardware resources. During the preceding evaluation phase, in which a number of systems were compared, the Fujitsu hardware was found to offer the best price/performance ratio. Independent tests have also confirmed this, with Fujitsu servers and storage systems frequently coming out on top.

Conclusion

The new, virtualized, high-performance infrastructure has resulted in greater flexibility and improved collaboration. Fraunhofer IWES is now planning to go even further by moving towards the establishment of a private cloud: *"In the next step, we want to expand the collaboration services by using application virtualization to offer our employees direct access to applications and data while they are out and about,"* Langer explains. The CIO has every confidence in the new hardware:

"Over the past two years, we have been implementing a concerted migration over to Fujitsu servers. The PRIMERGY servers are extremely robust thanks to their 'Made in Germany' quality. We were also impressed by the exceptional performance demonstrated by these systems in benchmark testing. These, in combination with the ETERNUS storage systems, have allowed us to achieve a significant boost in performance. In addition, as a result of the high energy efficiency of the systems, we can expect to see a swift return on our investment."

About Fujitsu

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