FUJITSU

CASE STUDY
BONN UNIVERSITY LIBRARY

»WITH FUJITSU'S BLADEFRAME TECHNOLOGY, OUR DATA CENTER BARELY TAKES UP AS MUCH SPACE AS THREE 19-INCH RACKS. AND LESS MEANS MORE IN THIS CASE SINCE OUR ADMINISTRATIVE EXPENSE IS DRASTICALLY LOWER ALTHOUGH WE ARE BENEFITING FROM SIGNIFICANT IMPROVEMENT IN TERMS OF EFFICIENCY.«

Frank Kretschmer, EDP Manager, Bonn University Library

THE CUSTOMER

The Bonn University Library, which the university's central lending and research library, serves approximately 28,000 students and 2,500 scholars and scientists. **www.ulb.uni-bonn.de**

universität**bonn**

THE PROJECT

Modernization to create a dynamic data center using virtualization and high-availability technologies.

THE SOLUTION

The project involved expansion and implementation in two phases. In an initial phase, a PRIMERGY BladeFrame BF200 System went into productive operation in the year 2008. Most recently, the infrastructure was expanded on the basis of a second virtualized PRIMERGY BladeFrame BF200 Server Pool to make it possible to consolidate all servers on the two BF200 systems. In addition, the project also involved installation of PRIMERGY RX200 Rack Servers, PRIMECENTER Racks and a NetApp FAS2050 Cluster.

GEARING UP FOR THE FUTURE – WITH A DYNAMIC DATA CENTER

The Bonn University Library's EDP department, which operates and maintains the library's IT infrastructure, is the driving force behind the organization's commitment to ongoing improvement in the area of EDP. This department's role is essentially to make resources and reference databases available to users and support complex user systems. These activities entail a level of sophistication that makes high performance and high availability virtually indispensable, especially since expectations and needs are rapidly increasing. Given this situation, the heterogeneous server landscape previously in place was actually counterproductive. And that's when the IT team headed by Frank Kretschmer decided that modernization would be the best way to align IT operations with future needs. The customer was able to count on support from two sources, Fujitsu's Account Manager Christian Böhme and Jan Oettgen, who headed the modernization project team from CANCOM IT Solutions GmbH.

FASTER RESPONSE AND BETTER USE OF RESOURCES

The project decision-makers decided to deploy a PRIMERGY BladeFrame virtualization solution from Fujitsu to implement the client's modernization plans and gear up for the future. In an initial phase, a PRIMERGY BladeFrame BF200 was installed and a server farm and numerous stand-alone servers immediately migrated to the new BF200. That gave the client a virtualized server pool that represented a promising first step in the direction of total consolidation. The result was a reduction in complexity, which meant faster data center response. In addition, availability of IT services was exceptionally reliable, and management became simpler. That meant the project had gotten off to a good start. Driven by this positive experience, the library's EDP team then proceeded to expand the IT infrastructure. The ultimate goal was to anticipate future needs and migrate the entire server landscape to the virtualized server pools from Fujitsu – for the ultimate in dynamic performance! The acquisition of a second PRIMERGY BladeFrame BF200 server solution then completed the virtual system environment. A NetApp FAS2050 Cluster was also installed for central storage. The entire system is housed in three extremely compact, space-saving PRIMECENTER racks, and the overall solution also features integrated PRIMERGY RX200 servers that are used to run special applications. All in all, the IT environment of the Bonn University Library has taken on a new dimension in quality. In addition to virtualization, the data center also boasts a high level of automation. Protection against outages is based on the n+1 redundancy of the BladeFrame systems and an uninterruptible power supply (UPS).

BENEFITS FOR THE CUSTOMER

- Introduction of virtualization and high-availability technologies
- High level of automation
- Complete migration of the "old" server farm to the new platform
- Increased protection against outages
- Drastic reduction in the complexity of the data center
- Simplified system management for greater efficiency
- Optimized cooling design for the servers

HARDWARE, SOFTWARE, SERVICES

Phase I:
- 1x PRIMERGY BladeFrame BF200 with 2x PRIMERGY RX200 Rack Servers, 1x 10 kVA Masterguard UPS

Phase II:
- 1x PRIMERGY BladeFrame BF200 with 2x PRIMERGY Racks, 1x NetApp FAS2050, 2x PRIMERGY RX200 S6 Rack Servers, 1x 10 kVA Masterguard UPS
- Integration services from Fujitsu

GROWING CHALLENGES FOR IT

The services offered by the Bonn University Library are much in demand by the approximately 28,000 students and 2,500 scholars and researchers who use the library's holdings for educational and research purposes. Since content and knowledge come in many more formats and media in our digital age than was the case only a decade ago, IT is becoming increasingly important. Today, reference databases and electronic full text functionality have changed the nature of access to and the use of knowledge, which presents major challenges for IT infrastructures. The specialists of the Bonn University Library's EDP department were of course aware of this. The steady increase in demand for storage capacity, power-hungry applications and expansion of user accounts combined to put an excessive load on the library's existing server infrastructure. The data center, which had a very heterogeneous server landscape, could no longer deliver the required performance. A modernization project was the logical next step. As a result, the library's goals were:

- to consolidate its server farms
- to increase the availability of IT systems
- to achieve a significant reduction in maintenance and administrative expense
- to permit stable, high-performance Internet connectivity
- to align the overall landscape with future needs

VIRTUALIZED SERVER POOL FOR DYNAMIC INFRASTRUCTURES

When it came time to implement the project, the IT decision-makers of the Bonn University Library relied on the support of two strong partners – Fujitsu and CANCOM IT Solutions GmbH, a systems integrator. This partnership resulted in a new IT infrastructure that was put in place in two successive modernization phases. Both subprojects were based on the choice of PRIMERGY BladeFrame BF200s as the core components for the new dynamic server solution. After the client introduced virtualization in an initial phase with a PRIMERGY BladeFrame BF200 and started to consolidate the existing server landscape, integration of a second BladeFrame BF200 system followed in a subsequent phase. A NetApp FAS2050 Cluster was chosen as the central storage instance

for the two units. PRIMERGY RX200 Servers are used for special applications such as, for example, load balancing. All components are distributed over three PRIMECENTER Racks supplied by Fujitsu, as were the two 10-kVA Masterguard UPSs. This uninterruptible power supply combines with n+1 redundancy to guarantee a high level of security.

A NEW DATA CENTER WITH A NEW APPROACH – LESS MEANS MORE

EDP department head and project manager Frank Kretschmer expressed his satisfaction with the deployment of the project and singled out the driver for credit:

"ANY PROJECT IS BOUND TO INVOLVE PROBLEMS, BUT COMPETENT PARTNERS CAN SOLVE THEM AS THEY ARISE. BY PROVIDING THE TECHNOLOGY AND INTEGRATION SERVICES, FUJITSU MADE A VERY POSITIVE CONTRIBUTION TO THE OVERALL SUCCESSFUL OUTCOME OF THE PROJECT."

What makes the technology that went into the data center of the Bonn University Library really impressive is how compact everything is. It's hard to imagine that such a small package can delivers so much performance. The two PRIMERGY BladeFrame BF200 units that make up the dynamic server solution combine with the central NetApp storage to permit optimal high-availability management of IT resources. The data center is now extremely flexible and configured to grow to accommodate new requirements and new applications without any increase in physical size.