Regensburg University of Applied Sciences, Germany

INDUSTRY
Education

SOLUTION
File and Content, Virtualization

Hardware — BlueArc® Mercury 50
Services — Provided by Hitachi TrueNorth™ Partner
Brandl Systemhaus GmbH

“The BlueArc Mercury solution … not only improves virtualization, but also increases performance.”

Tom Förster
System Administrator
Regensburg University
German University Improves Performance and Virtualization in VMware Environment with BlueArc® Technology

At Regensburg University of Applied Sciences in Germany, virtualization is a top priority. In 2010, the decision was made at the university’s computer center to port services that had previously operated on dedicated servers into a virtual environment. After in-depth analysis, for excellent efficiency and specific functionality, such as replication and snapshots, the IT team chose to implement a BlueArc® Mercury 50 high-performance network storage solution. (BlueArc is now a part of Hitachi Data Systems.) To complete the solution, the team also purchased a complete server landscape for the development of a VMware environment.

About Regensburg University of Applied Sciences

With more than 8,100 students and over 40 degree programs, Regensburg University of Applied Sciences (RUAS) is one of the largest universities of applied sciences in Bavaria. RUAS (www.hs-regensburg.de) is one of the few universities that offers a degree program in microsystems engineering and was one of the first universities to offer courses in European business studies and mechatronics. The university also offers a Masters program in electrical and microsystems engineering, plus a number of further education courses at the “Zentrum für Weiterbildung und Wissensmanagement” (Center for Further Education and Knowledge Management — ZWW). What’s more, the “Institut für Angewandte Forschung und Wirtschaftskooperation” (Institute of Applied Research and Economic Cooperation — IAFW) works with industrial partners, businesses and social and administrative organizations, and bridges the gap between applied sciences and industrial practice.

The Challenges

The number of services required at the Regensburg University of Applied Sciences has continued to increase over the past few years. As these services were generally provided on dedicated services, the costs for acquisition, operation and server administration were rising considerably. At the same time, expensive capacity was not being put to full use due to the varying requirements of these services in terms of computer and other resources. Even when it came to power consumption and required cooling capacity, the required performance was also increasing all the time. Another consideration was the fact that HisinOne software, which requires a virtual environment, was to be installed in the RUAS administrative area.

The Solution

The first step in meeting these challenges was to start installing VMware on new servers featuring direct attached storage (DAS). It quickly became clear that using a VMware-based server landscape was the right approach, but this also meant the acquisition of a robust, high-performance storage solution was essential. To this end, the working group responsible for the project evaluated solutions from 5 different manufacturers over the course of several months. In the end, the working group decided to go with the Mercury 50 solution from BlueArc, based on the fact that it had the best price-to-performance ratio.

Regensburg University of Applied Sciences made the switch from a conventional server landscape to an almost exclusively virtual infrastructure within a year. Over 100 virtual machines are now operated on 8 physical servers. During the switch, requirements could be easily adjusted by simply expanding the available storage space using additional disk shelves.

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as primary storage. This process involves combining SAS and nearline SAS disks. A key advantage of using the BlueArc solution is the ability to reflect or replicate between SAS and nearline SAS disks so that disaster recovery capabilities are significantly enhanced.

During the evaluation phase, the working group at the computer center investigated a number of specific applications, as System Administrator Tom Förster explains: “We wanted to be able to support NFS and use CIFS at the same time,” he says. “During the evaluation of the final 2 providers, the simple administration concept for the storage solution was our priority, especially with regard to administration costs. The fact that BlueArc solutions allow for snapshots as well as replications was also a deciding factor. This feature means that users can retrieve a deleted Excel file independently, with just 1 click of the mouse rather than an administrator having to search through the tapes for hours.”

The BlueArc solution also fulfilled the complex requirements relating to speed and performance of the highly virtualized environment without any problems. “Right from the start, it was clear to us that performance would be a key success factor for our project,” Förster recalls. “BlueArc is able to handle several tasks in FPGAs. With other providers, these tasks are only made possible by using software that considerably increases the performance requirements for the entire storage space.”

The Results
By using the BlueArc solution, the Regensburg University of Applied Sciences was able to satisfy the most important requirement of its virtualization project: namely to offer IT as a service to the university community. The virtualization process has been a huge success, meaning the university can now offer its users a service-oriented infrastructure, which is characterized by enhanced scalability, availability and flexibility.

The installation of the BlueArc solution went smoothly. On one hand this was because the RUAS had prepared everything thoroughly. On the other hand it was because Brandl Systemhaus GmbH from Straubing carried out the integration in a professional manner. During the installation process, it became clear how important it is to have a license for replication with BlueArc as well as for Storage VMotion. RUAS was thus able to avoid any storage space problems during migration of the user files.

The Outlook
This initial virtualization project by Regensburg University of Applied Sciences was just the beginning: “We already have the capacity to increase the number of virtual machines in future using the existing hardware,” explains Förster. In addition to the required functions for replication and snapshots, the university benefits from the countless other functions of BlueArc storage solutions. “We look forward to adding new tools, such as intelligent tiering and the data migrator for storing seldom-used large files, as well as deduplication. We are keen to make use of these opportunities in the future.” In addition, almost all the old servers with DAS systems are being migrated to the BlueArc Mercury solution, which, according to Förster, “not only improves virtualization, but also increases performance.”