

Case Study Wonkwang University

»Implement server virtualization for academic administration system with Fujitsu Blade Server PRIMERGY«

Joung Young Im, Section Chief of the Operation Management Team, Information & Computing Center



The customer

Wonkwang University is located in Iksan, Korea, and was established in 1946. In accordance with its founding principle "Great opening of matter, let there be a great opening of spirit", Wonkwang University has served as a pioneering private school in the advancement of Korea's modern education system combining knowledge and morality. In particular, it is firmly committed to developing talented people with strong character and specialized knowledge across diverse fields including Asian and Western medicine and areas of IT. Since its introduction, Wonkwang University has become a leading private school for medicine, dentistry, oriental medicine, pharmacy and law.

The challenge

Wonkwang University has used Fujitsu GRANPOWER servers since the mid 1990's for its academic administration system. However around the introduction of server virtualization to Korea, in 2006 Wonkwang University began considering implementation of server virtualization to overcome a number of IT challenges. Server virtualization provided an opportunity to house the data center in the Information & Computing Center, integrate and centrally manage servers distributed all over the campus, and flexibly allocate IT resources as required depending on the time of year, for example during course registration.

The University's course registration system is a vital aspect of the academic process and operated on individual physical servers. While the system needed to handle a significant amount of traffic during peak course registration times, a large amount of these resources remained unused until the following semester. Following in-house verification, Wonkwang University decided to implement a server virtualization solution to increase efficiency of IT resources and reduce system management costs.

The solution

Through its partnership with Fujitsu Korea, Wonkwang University identified the ideal solution based on the high quality redundancy features of Fujitsu Server PRIMERGY x86. In addition, the partnership also ensured an agile resource system could be constructed. Joung Young Im, Section Chief of the Information & Computing Center at Wonkwang University said, "Our server virtualization would not have been possible without the support of Fujitsu Korea. They not only directly participated in system verification, but also contributed to various other tests."

The customer

Country: Korea, Republic of
Industry: Education
Founded: 1946
Website: www.wku.ac.kr



The challenge

Wonkwang University initiated a server virtualization project to resolve IT challenges including; service failure during enrollment period, lack of space in the data center, inefficient system resources and reduction in IT budget. Wonkwang University verified the server virtualization through benchmarking tests and implemented a system integration project based on virtualization in three stages.

The solution

Wonkwang University chose FUJITSU Server PRIMERGY BX900S2 with Intel® Xeon® Processor for its excellent system reliability, redundancy and scalability. The blade server provided an optimal platform for integration of the University's academic administration system, and for implementation of a reliable virtualization environment that could facilitate infrastructure expansion and rapid turnaround after outages.

The benefit

- Reduced number of racks from 18 to 2
- Replaced 125 existing servers with 41 blade servers
- Minimized data center operational costs
- Improved the University's IT service for users via introduction of the self-developed integrated information system

With the help of Fujitsu Korea, Wonkwang University meticulously conducted benchmark testing and began the process to verify the efficiency of the server virtualization solution. The results from the testing proved positive and stakeholders from the business including system administrators and developers were satisfied, a major factor in deciding the direction of the overall system integration project.

Following completion of the server virtualization verification in October 2009, H1N1 virus (also known as Swine Flu) exercised its might worldwide and threatened to interrupt classrooms at Wonkwang University. Due to the highly contagious nature of this virus, Wonkwang University planned to convert one week of classes into online classes and explored options for this initiative with its Information & Computing Center. The Information & Computing Center strongly supported the virtualized systems and agreed to operate online classes for more than 10,000 students by implementing server-virtualization-based systems, in a short period of time, with the help of Fujitsu Korea. More than 50,000 people accessed the system in one day and Wonkwang University provided the Internet based classes without issue or server downtime through flexible management of resources via the server virtualization solution. This initiative attracted the attention of universities nationwide.

The successful implementation of the online class system provided Wonkwang University with complete confidence in the server virtualization solution and therefore they proceeded to integrate the entire system leveraging Fujitsu's PRIMERGY Blade servers as the foundation. Wonkwang University replaced 125 individual servers located in the data center with 41 Fujitsu PRIMERGY BX900 Blade servers to begin integration of the academic administration system.

The benefit

By replacing the old servers with blade servers, Fujitsu Korea combined various network switches and FC switches within the data center into the blades, consolidating 18 racks down to only two. As a result, Wonkwang University was able to decrease their data center's environmental footprint and reduce operational costs.

Products and services

- FUJITSU Server PRIMERGY BX900 S2 with Intel® Xeon® Processor
- FUJITSU Server PRIMERGY BX920 S3 / S4 with Intel® Xeon® Processor
- FUJITSU PRIMECENTER M1 Rack

The PRIMERGY BX900 blade server employs Fujitsu's low-power design technology to deliver a highly-efficient energy supply and combines a ServerView Power Management solution to contribute to minimizing operational costs in the Wonkwang University data center.

Consolidating 125 existing servers into 41 blade servers not only significantly reduced costs, it also boosted efficiency and performance of the University's IT resources. Additionally, the technical know-how and infrastructure performance optimization acquired during the system integration project, enabled Wonkwang University to develop and implement its own comprehensive information systems in the future that can enhance IT services for its users.

Conclusion

With the ultimate goal of improving education and enhancing support, Wonkwang University's Information & Computing Center initiated an IT Innovation Project. With the server-virtualization-based academic administration system complete, the Information & Computing Center can start planning for the next stage, a network virtualization and storage virtualization project.

Acting as an e-learning platform, Wonkwang University plans to operate education and administrative services in the future via the virtualized systems. It also plans to develop and provide customized education services to students through further integration of IT resources. With an efficient virtualization-based data center, Wonkwang University will consolidate different IT functions, grouping them onto a platform that can be easily managed and provisioned as an educational IT service, quickly and dynamically.

In accordance with Wonkwang University's plans for the future, Fujitsu Korea will continue to support the effective use and deployment of resources including further implementation of blade servers, as well as storage and network solutions that reflect the latest IT trends.

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