

Case Study

Board of Education of Nara City, Japan

»The importance of leveraging ICT for educational management continues to grow. Nara City will continue to look forward to Fujitsu's proposed initiatives.«

Naohiro Inui, Educational General Affairs Department, Manager, Board of Education of Nara City



The Customer

Country: Japan
Industry: Public
Founded: 1952
Schools: 69
Students: 26,600
Teachers: 1,800



The Challenge

- The non-redundant previous servers used to fail and suspend the operation continually.
- The ever expanding physical servers heavily impacted their power consumption and the environment.
- Nara City needed a flexible system to correspond to the installation of new services they were planning in the future.

The Solution

The combination of Fujitsu PRIMEQUEST and VMware realized consolidation of 14 servers in a half space of one 19-inch rack. Thorough redundancy of major components raised the reliability ten times as much as general IA servers. The scalability and flexibility allow them to start new services on ICT with lower costs. Fujitsu also contributed quick and smooth installation of new systems.

The Customer

Nara city is the capital of the Nara prefecture in the Kansai region and is a former capital city of Japan. Nara has a strong historical significance that stretches over 1,300 years. In 1998, a collection of landmarks in Nara city, known as the "Historic Monuments of Ancient Nara", together with Kasugayama Primeval Forest, were listed by UNESCO as a world heritage site. As a way to preserve this cultural knowledge, Nara city began to heavily focus on education in the area. This education system would become the foundation for students to inherit the tradition and culture of Nara, thereby passing it on to future generations.

By April, 2011, all forms of education had become a big part of this region and as such the Educational General Affairs Department became committed to use ICT as the tool that would promote and foster education.

The department soon started the process to replace the current education telecommunication network system, "Manabi Kagayaki Net" (Translates to "a system to learn and excel").

The Challenge

■ Improve availability for business continuity

Up until now, "Manabi Kagayaki Net" has supported web browsing and mail exchange in schools of Nara city. However, the system was continually overwhelmed by the use of ICT and power consumption of the physical servers that both grew rapidly since its installation in 2002. As a result, the previously non-redundant system, continually failed and web browsing and mail exchange had to be suspended. The Board of Education of Nara City (Nara City) needed an ICT infrastructure to provide a stable platform for support of business continuity, particularly, for web browsing and mail exchange.

■ Limited space in data center environment

The ever expanding physical servers heavily impacted power consumption and the environment. They needed a solution to reduce the number of servers while still allowing them to expand out.

■ Need to support future initiatives and services

It was necessary that the new system played a role for business improvement initiatives. Nara City had plans to introduce the use of a digital educational tool like Contents Management System (CMS). They expected CMS to strengthen the information network between schools, homes and the regional community by providing information on disasters, power saving methods, and BCP (Business Continuity Plan).

The Benefit

- Increase the reliability and availability of the system
- Reduce environmental footprint to a quarter
- Reduce power consumption to a third
- Improve efficiency and space of the server room
- Halve installation costs for system expansion
- Increase flexibility to assess new business initiatives

The Solution

The new system was built around Fujitsu's PRIMEQUEST 1400S2, a Mission Critical IA server combined with VMware's vSphere vMotion virtualization technology.

■ PRIMEQUEST partitioning

A failure in one partition does not affect the other partition, which maintains business continuity.

■ VMware virtualization technology

Servers can be consolidated on two partitions using virtualization technology, with easy and low cost scalability.

Virtual servers are required to have high reliability as they scale out.

Without partitioning a single failure can affect the entire system.

PRIMEQUEST's strict screening process of its components, assures a failure rate of 1/5 to 1/10 greater than general IA servers. Furthermore redundancy of the components and hardware partitioning assure high availability.

PRIMEQUEST hardware partitioning and VMware enabled Nara City not only to consolidate their 14 servers, but to scale up the system without any reconfiguration, operation tests, back up or complicated administration settings.

Additionally, Fujitsu's approach of working closely with administrators made sure the solution was delivered quickly and did not interfere with the schools peak examination period.

The Benefit

■ Stable platform of high reliability and availability

The redundancy features of Fujitsu's PRIMEQUEST 1400S2 server delivers Nara city's education system a reliable stable platform that was required to maintain availability of web browsing and mail exchange. Nara City could now increase uptime and eliminate application stoppages previously experienced with the old system.

■ Consolidation of the servers

After the consolidation of the servers, Nara City reduced their environmental footprint to 1/4, and power consumption to 1/3 of the former system. Nara City was able to use their server room more efficiently and utilize it for future initiatives.

Products and Services

- Mission-critical IA Server Fujitsu PRIMEQUEST 1400S2
- IA Server Fujitsu PRIMERGY RX200 S6
- Storage system Fujitsu ETERNUS DX80 S2
- Virtualization Software VMware vSphere5
- Operation Management Software Fujitsu Systemwalker
- Education contents distribution software EduMall
- School solution Open School CMS

■ Flexible and cost efficient expansion

After the new system was live, the Nara City was keen to start looking at new services. They knew that with their now virtualized environment, the cost of adding to their system was half that of a physical installation. Now as they considered various business improvement initiatives, the lower cost made sure they had flexibility to respond to more requests from the schools.

An example of one initiative is Nara City's Board of Education's plan to establish a new system that collects and sends disaster information for the community.

Conclusion

The board of education revamped their intelligence system, "Manabi Kagayaki Net", with Fujitsu's PRIMEQUEST server, so the schools of Nara city could leverage ICT better. The system ultimately reduced their TCO and has the reliability and flexibility to adjust to schools' and teachers' requirements. The combination of PRIMEQUEST and VMware virtualized the system providing high density and high scalability that would help facilitate future initiatives including; digital classrooms and disaster communication. The importance of leveraging ICT for educational management continues to grow. Nara City will continue to look forward to Fujitsu's proposed initiatives.

"ICT in schools used to mean courses in PC operation. However, ICT has grown so much it has become essential for the management of education in Nara city."

Naohiro Inui, Board of Education of Nara City.

About Fujitsu

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