

Cisco Unified Computing Systems Case Study

# Saitama University

Preparation of a platform for a virtual environment to centralize data management  
 Creating a system with Cisco UCS that has outstanding network and systems compatibility and great reliability

EXECUTIVE SUMMARY
<p><b>Installation Solution</b></p> <p>Cisco Unified Computing System (UCS)            Cisco Catalyst 6500 Series Switch (VSS, wireless LAN module)</p>
<p><b>Issues and cases for review prior to installation</b></p> <ul style="list-style-type: none"> <li>• When performing maintenance of the university data infrastructure, we were looking for a system with excellent controllability and serviceability.</li> <li>• When consolidating servers and clients by virtualization, we focused on compatibility with networks and servers.</li> </ul>
<p><b>Benefits of Installation</b></p> <ul style="list-style-type: none"> <li>• Using Cisco UCS and Cisco Catalyst 6500 (VSS) connected to a 10 Gbps network, we were able to achieve a highly reliable environment that can be used without focusing on virtualization.</li> </ul>

At Saitama University, which has five faculties gathered on a single campus with thriving intercommunication, the implementation of an environment to centralize data management and make system management more efficient is underway. The university has adopted the Cisco server solution Cisco Unified Computing System as that platform, and together with improvements in network bandwidth to 10 Gbps, a highly reliable and efficient system environment has been put into place.

### Details of installation - Installation process

Construction of server and client virtual platforms with Cisco UCSv

Preparation of the system/service environment coordinated with the data center

At Saitama University, consolidation by the virtualization (VDI) of data infrastructure is underway, provided within the university and server and client environments managed by individual faculties and study rooms. We are actively working to make operations and management more efficient and cut costs and electricity consumption. The construction and management of IT platforms within the university is handled entirely by the Data Media Infrastructure Center, which has hitherto implemented advanced initiatives.

Yoshida Norihiko, the Center Director, had this to say.

"The Infrastructure Center has played an important role, particularly by connecting all study rooms/classrooms in a horizontal network using a dedicated fiber optic line in 2007, and creating central management. Prior to this, we made improvements to network bandwidth and provided a cloud environment within the university through virtualization. In this way, our focus was on "never stopping," and we also aimed to create a system that was "safe, secure, and easy to use." Most of all, thanks to the precise and flexible response of Cisco and the architecture vendor, we were able to establish an excellent platform with great potential."

### NORHIKO YOSHIDA

Saitama University Data Media Infrastructure Center  
Center Director and Professor

### NORIAKI YOSHIURA

Saitama University Graduate School Department of Science and Engineering Research  
Assistant Professor

### KOICHI OGAWA

Saitama University Data Media Infrastructure Center  
Specialist Technician

### HIRONOBU SAITO

Saitama University Data Media Infrastructure Center  
Specialist Technician

Koichi Ogawa of the Data Media Infrastructure Center adds the following. "Previously, web and mail servers were set up separately in each study room and we used to perform maintenance when the room was free, but it had become difficult to find time for this, as we also had to deal with security. We therefore considered it necessary to create a hosting service from the Infrastructure Center that allows teachers and students to concentrate on their normal study/research activities."

The new system and network have been in operation since March 2012 and construction itself was carried out in a short time from September 2011. Construction proceeded smoothly thanks to the meticulous planning and support from an infrastructure vendor of great technical strength and considerable achievement, and there have been no problems whatsoever since the start of operations. We have consolidated 20 servers that previously existed in the Infrastructure Center into the Cisco Unified Computing System (Cisco UCS) and used this as the platform for the virtual environment. We have a system in place to consecutively assimilate server environments from research rooms and the like.

Hironobu Saito of the Data Media Infrastructure Center says that they decided on a structure divided between the Cisco UCS in the university and the off-campus data center for the service provided.

"We have designed our system and services in a particular form, with services applied on-campus kept within the university, and email, the Web, DNS, etc. that many people may wish to use at any time kept outside the university. We decided on this division based on the fact that the region was also subject to planned power outages following the Tohoku earthquake in 2011."

## Results of the installation - Future development

### Great improvements in reliability and progress in finding efficiencies from various perspectives Seeking to improve operations and management based on the special characteristics of virtualization

As well as cutting the number of servers and improving space efficiency, use of the Cisco UCS is also expected to be effective at curbing electricity consumption. Overall cost cuts have also apparently been achieved, in spite of the considerable improvements to infrastructure.

Mr. Ogawa says that the change has been well-received, as operations after the migration were very smooth and reliability was also high.

"We had a number of problems with both servers and networks in our old system, but these have been considerably improved. 10 Gbps of full support for the Cisco Catalyst 6500 and the server network has been a major issue this time round, but considering the compatibility of storage associated with this connectivity and server virtualization, I think Cisco UCS has excelled. This product, which considers servers from a network perspective, is typical of Cisco. In addition, I feel that the fact that the product, including the VSS component of Cisco Catalyst 6500, can be used quite normally without noticing the virtualization is a really great merit."

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## SUMMARY

### Saitama University

**Address:**

255 Shimo-Okubo, Sakura-ku, Saitama-shi,  
Saitama-ken

**Established:**

May 1949

**Number of students:**

7,634 (as of May 1, 2011)

**URL**

<http://www.saitama-u.ac.jp>

Noriaki Yoshiura, an assistant professor in the Graduate School Department of Science and Engineering Research, also recognizes the high reliability of the Cisco solution that was installed.

"Cisco Catalyst 6500 has now been installed as the core switch and is used as the VSS component, but a simple and highly stable network has been constructed. I think we have achieved a very good environment with fewer hardware malfunctions. By creating a "system/network that never stops" with the help of the architecture vendor, we should make progress in centralizing and improving the efficiency of data management within the university."

Mr. Ogawa thinks that in the future it will be necessary to establish techniques of operation and management that are fit for a virtual environment. "Virtualization eliminates the barrier of hardware, but I think that the future issue will be maintaining smooth progress while eliminating old frameworks, as when gathering up study rooms and departments that used to manage servers individually or other sections tied up with hardware and maintenance. This will be equally true for other universities coping with the virtualization of infrastructure as well as for us. I would like to be able to produce better results, including Cisco UCS operational performance."



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