

Cisco Unified Computing Systems Case Study

Tokyo University of Agriculture and Technology

Installing the server virtualization/VDI environment to data systems for education and research

Achieving improvements in the conservation of electricity and space efficiency using Cisco UCS and providing flexible infrastructure that is ready for future changes

EXECUTIVE SUMMARY

Installation Solution

Cisco Unified Computing System (UCS)
Cisco ASA 5500 series
Adaptive Security Appliance
Cisco Secure Access Control System (ACS)
Cisco Catalyst Series Switch
Cisco MDS Series Switch
VMware vSphere
VMware View
EMC Celerra NS-480

Issues and cases for review prior to installation

- We were thinking about further improving the efficiency of operations management, electricity conservation and installation space by virtualizing and consolidating servers for various systems that were supposed to be constructed individually, such as subsystems for education, Internet data, integrated management operations, libraries, and so on.
- We have tried to provide a unified environment by using a virtual desktop (VDI) on PC terminals for student seminars.

Benefits of Installation

- There are no hardware problems and the environment is very stable and highly reliable.
- The promotion of virtualization made it even easier to respond flexibly, particularly when checking the status of terminals.
- Electricity consumption has been cut by about 33% compared to the old system and the number of devices installed has been halved.

The Tokyo University of Agriculture and Technology, which aims at "the realization of a sustainable society," has long been striving to conserve electricity and improve systems efficiency. The data system for education and research currently in operation is used by all students and teaching personnel. It actively incorporates virtual technology and has achieved additional efficiency improvements. The Cisco computing architecture employed for this platform, the Cisco Unified Computing System, has been operating smoothly ever since it was installed and its reliability and efficiency are held in high regard.

Details of installation - Installation process

Aiming to promote improved efficiency by virtualization and the installation of the VDI
Employment of Cisco UCS in accordance with the proposal of the infrastructure vendor

Tokyo University of Agriculture and Technology has been running a new system environment centered on the Cisco Unified Computing system (Cisco UCS) in the data system for education and research, which forms the core of its education, research, and academic information infrastructure. The four-chassis, 31-blade Cisco UCS

unifies and consolidates systems that were initially constructed individually, and forms a platform for supporting the virtual desktop (VDI) on the 530 terminals and libraries used by students. While the email system uses the infrastructure vendor's cloud service for ICT infrastructure within the university, we are promoting increased efficiency through virtualization and have achieved year on year electricity savings of about 33% as well as improvements in space efficiency.

TAKAHIKO TSUJISAWA

Tokyo University of Agriculture and Technology
General Data Media Center, Professor
Doctor of Engineering

HIROKATSU SEGAWA

Tokyo University of Agriculture and Technology
General Data Media Center

Takahiko Tsujisawa of the General Data Media Center had the following to say about the situation at the time of the installation.

"Physical servers used to be decentralized as terminal netboot environments, subsystems, and departmental/study room systems and operations management, electricity consumption, and installation space were all inefficient. For the new system, as there is now a high rate of PC ownership among students, who might not be aware of compatibility issues, we decided to move to VDI using VMware View on seminar terminals. Saving electricity and space were the other major objectives. We have made use of virtualization

technology as a platform for operations five years into the future and are able to respond to a variety of situations.

We first used Cisco UCS was when we received a proposal from the infrastructure vendor. The proposal consisted of a private cloud platform using Cisco UCS for the university's own systems and use of a public cloud for email systems."

For the new system, there were requests from within the university for the use of 3D-CAD applications and to watch a video introducing the Center, which requires high throughput. We confirmed in advance with the infrastructure vendor and Cisco Customer Proof of Concept (CPOC) that the conditions needed to use the VDI were satisfied, and operations started on schedule. Hirokatsu Segawa of the General Data Media Center had the following to say.

"When we had the old system using netboot, we were told that the boot time for the terminals was too long, but with the current VDI environment, there have been no complaints from users and terminals can be used without difficulty."

SUMMARY

Tokyo University of Agriculture and Technology

Address:

3-8-1 Harumicho, Fuchu-shi, Tokyo (main campus)

2-24-16 Nakacho, Koganei-shi, Tokyo

(Technology Center and Technology Department/Koganei Campus)

3-5-8 Saiwai-cho, Fuchu-shi, Tokyo

(Agriculture Center and Agriculture Department/Fuchu Campus)

Established:

1874

Number of students:

5816 (as of May 1, 2012)

URL

<http://www.tuat.ac.jp/>

Results of the installation - Future development

Initial targets for reductions of about 33% in electricity and space efficiency were achieved. Operations using the right person for the right job, including cloud computing services, are an issue for the future.

After more than a year of operations, excluding the email system using the public cloud, we have achieved reductions in energy consumption in the server room of about 33% above the previous system. The total number of racks has not changed, but by roughly halving the mounting devices, free space has opened up on each rack and improvements have been made to the ease of maintenance and cooling efficiency.

Server virtualization and VDI platforms have been trouble free and Mr. Segawa values the high reliability of Cisco UCS.

"I don't feel it's there, it demonstrates its abilities by working quietly in the background. During the installation process, setup, and operation, there were no problems or hardware failures whatsoever. There was no need for fine tuning and a major benefit is its stability. The time spent moving between campuses applying patches has decreased since the time of the netboot environment, but a major advance has been easier control, including the ability to check the status of several hundred terminals remotely using the current virtualization."

After installing Cisco UCS, inquiries from other universities and study visits concerning virtualization and VDI use status increased. Based on what has been learned through daily use and the development of new issues, Mr. Tsujisawa had this to say about future development.

If dealing with virtualization or the change to VDI in the future, I think it is important to get the measure of things dispassionately on the basis of the overall situation, including applications to be used and running costs after installation. There are several issues such as the clarification of license management, but in the future I think we will make a full-scale deployment of terminal environments for seminars using PCs brought in. We are also considering moving office systems and applications to the cloud.



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