

# UNIVERSITY OF TOKYO

## IP NETWORKS

## The University of Tokyo Leverages the Brocade BigIron 8000

### Objective

- University of Tokyo needed to provide a computing network environment with 24x7 services 365 days a week for 30,000 registered users

### Solution

- Brocade products ranked the highest, especially in the area of reliability

### Results

- With Brocade solutions in the network, University of Tokyo gained reliability delivering 24x7 service, 365 days a year, for 30,000 users

The University of Tokyo Information Technology Center, which was established in 1999 in a library affiliated with the University's Large-Scale Computing Center and the Educational Computing Center, supports the information processing needs of the University's research activities.

In March 2004, the University launched the Educational Campus-wide Computing System 2004 (ECCS2004). Its goal: provide a computing and network environment dedicated specifically to research and education. Already in operation, ECCS2004 is an enormous system, providing 24x7 services 365 days a week for 30,000 registered users. ECCS2004 has attracted industry attention, not only for its size, but also for its many unique features.

For example, the System supports 1,149 iMac terminals for students and researchers. Windows and Linux machines form the multi-OS environment for Virtual Image

Distributor (VID) terminals. In addition, the System centralizes data control with a single network boot and leverages efficient Network Attached Storage (NAS) as its foundation.

### OBJECTIVE

As its core, ECCS2004 uses four Layer 3 (L3) switches. Despite its large scale, the System does not have a redundant configuration. Significantly, ECCS2004 uses the Brocade® BigIron® 8000 and BigIron 4000 for its L3 switches.

"The network, the authentication system, and file services are the pillars of our system," says Mr. Koji Ando, Senior Research Associate of Information Technology Center, the University of Tokyo. In particular, how the network is constructed is critical. "The network boot and network storage simplify the entire network and facilitate terminal maintenance. But the network has to be reliable for us to reap such benefits."

# BROCADE

"Most people assume a network should function without any problems. However, the truth is, it's not that simple," points out Mr. Ando. "Product quality is critical for reliability, but it's impossible to judge the reliability of network equipment with a spec sheet."

ECCS2004 was further simplified with a highly reliable switch instead of redundant configuration. "While redundancy may increase reliability, it also increases cost," says Mr. Ando. But there is no need for redundancy if the network equipment is reliable. So, in the end, choosing the right product is critical.

### SOLUTION

While NEC, which implemented the system, evaluated numerous products, in-house system engineers rated Brocade products the highest, especially in the area of reliability.

"We felt the likelihood of BigIron going down was small, and its performance was steady even when network traffic increased. Problems can easily occur, especially in

an environment like ours where there is a high volume of small packets. Even under such conditions, though, BigIron ran quite smoothly without any trouble."

"The feedback from on-site system engineers is the most reliable information we can get," says Mr. Ando. "The people who know the true capabilities of products are system engineers. After all, they are the ones actually using the products."

### RESULTS

While ECCS2004 has now been in operation for a year, it has been completely trouble free. Even though hundreds of terminals have to boot up when classes begin, performance has been stable. In terms of the time required for booting up iMacs, thanks to the performance of the file server and network, "it's almost faster than booting up locally," says Mr. Ando.

Indeed, while ECCS2004 initially was used mostly for computer education, it now supports data processing, and increasingly is being used for language and physical education.

For instance, for language classes content is now delivered via MP3 through the web. ECCS2004 is also being used to exchange large amounts of CAD data.

"A reliable network system makes life a lot easier for network operators," says Mr. Ando. "This leaves us more time to think about new stuff."

Now, network operators at the University of Tokyo are planning to improve the delivery of multimedia content as well as promote e-Learning.

For more information, visit [www.brocade.com](http://www.brocade.com).

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