

# The Seoul National University of Technology deploys DX 3600 to ensure peak availability

## Industry: Education

### Company:

Seoul National University of Technology deploys DX 3600 to ensure peak availability

### Challenge:

To ensure the availability and performance of its online services during peak periods such as the announcement of admissions application results.

### Selection Criteria:

Cost effectiveness and previous deployment experience.

### Network Solution:

Juniper Networks DX 3600 Data Center Load Balancer and Application Acceleration Platform.

### Results:

Excellent performance and improved response time even during peak periods.



The Seoul National University of Technology (SNUT), which marked its centennial anniversary in 2006, is planning to join the ranks of world-class universities by 2010. In line with its vision “SNUT Action 2010”, the university has set out “100 tasks” that include greater collaboration between industries and the academic community. SNUT is also committed to providing quality education and leading the research and development efforts to drive industry growth.

Like most universities today, SNUT is equipped with a state-of-the-art IT infrastructure. With an advanced gigabit campus network deployed in 2001, the university relies heavily on the Internet for administrative functions such as the submission of application forms, class registration, and the announcement of successful candidates.

## Challenge

During peak periods such as entrance examinations and class registration, the university network was often overwhelmed by a sharp increase in traffic. The congestion worsened as deadlines drew near, threatening to bring down the university’s three Web application servers.

SNUT also introduced a new admission policy that required candidates to submit all applications through the Internet. During the application period, the load balancing feature of the network’s Layer 4 switch could barely handle the increase in traffic brought on by the new requirement.

SNUT had to find a way to address the problem before the announcement of application results, which was expected to bring an even greater surge in traffic. During the announcement period, the university’s systems needed to handle up to 25,000 sessions within a two-hour window.

In trying to address the problem, SNUT realized that measures such as server expansion and increasing network bandwidth were not cost effective since they led to a significant increase in the total cost of ownership, said Changin Lee, leader of the computation team at SNUT. The other option was to use the load balancing feature of

*“With the deployment of Juniper’s DX 3600, however, we have been able to address the issue of traffic surge more effectively, preventing server overload while ensuring excellent performance and improved response time even during peak periods.”*

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the L4 switch, which was also an ineffective solution to the traffic surge during admission and registration periods.

The university then looked to a dedicated data center load balancer and application acceleration solution to ensure efficient handling of traffic during peak periods. This solution would be critical for ensuring business continuity and avoiding service availability issues that could damage the university's reputation.

### Selection Criteria

SNUT required a solution that addressed the issue of traffic congestion and enhanced its infrastructure while keeping within its budget. It decided to deploy the Juniper Networks DX 3600 Data Center Load Balancer and Application Acceleration Platform.

"In the past, we had a serious problem of server downtime during the class registration period," Lee said. "We were able to solve this and enjoy significant improvements in performance when we deployed an acceleration solution to help alleviate traffic loads. So we decided to further explore this area and implement the Juniper DX series to be better prepared for the anticipated traffic upsurge during the announcement of application results."

### Solution

Fidus Information Technology installed a demonstration unit of the DX 3600 at SNUT. The university conducted various tests including a server stress test, and tuned the platform before going "live" with the new application acceleration platform.

The DX 3600 delivers a complete data center load balancer and acceleration solution for Web-enabled and IP-based business applications, enhancing the end-user experience by delivering content more quickly.

The DX 3600 optimizes and compresses all outgoing Web data in real time without adding latency, allowing users to experience faster page loads regardless of their location or network connection. It also offloads core networking and I/O responsibilities from Web and application servers to improve the performance of Web-based applications. This enables more efficient use of server and network resources and frees the server CPU for other tasks.

At the same time, the DX 3600 delivers the security enterprises needed for the critical transaction zone where Web-enabled applications reside. It authenticates users, secures data and connections, and protects servers from DOS and SYN Flood attacks and provides Layer 7 application security, all without adding latency.

### Results

Because of the deployment, SNUT can now handle the traffic surge and provide effective support to users during the announcement of the application results. This has led to a greater sense of confidence in tackling subsequent peak periods in Internet usage.

"In the past, despite the huge amount of investment in building our admission systems, we had no solution to the congestion problem other than to add servers in order to process the increased workload," Lee said. "With the deployment of Juniper's DX 3600, however, we have been able to address the issue of traffic surge more effectively, preventing server overload while ensuring excellent performance and improved response time even during peak periods."

### Next Steps and Lessons Learned

Moving forward, the university will continue to invest in its IT infrastructure and is planning to replace old appliances such as workgroup switches. It is also looking for ways to optimize its use of the DX 3600 platform.

### For More Information

To find out more about Juniper Networks products and solutions, visit <http://www.juniper.net>.

### About Juniper Networks

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