

University Protects Vital Data with End-to-End Cisco Data Center Architecture

Long Island University's storage area network increases data availability, enables new applications, and provides centralized backup and recovery.

EXECUTIVE SUMMARY

Long Island University

- Education
- Brookvale and Brooklyn New York, United States
- 28,000 students, 700 full-time faculty

BUSINESS CHALLENGE

- Provide business continuity and disaster recovery capabilities
- Increase competitiveness with new applications such as online registration

NETWORK SOLUTION

- Installed redundant storage area networks (SANs) based on Cisco MDS 9216i Multilayer Fabric Switches
- Moved mission-critical applications to highly available, reliable SAN
- Cisco-based SAN adds to data protection provided by Cisco data networks that provide load-balancing capabilities and advanced security features

BUSINESS RESULTS

- Improved application performance and simplified data storage management
- Provided the infrastructure for a robust business continuity and disaster recovery strategy
- Created a platform to support new applications and capacity to add storage as needed to support growth
- Increased data availability for students, faculty, and staff with centralized management for backup and recovery

BUSINESS CHALLENGE

With 28,000 students enrolled in more than 600 undergraduate, graduate, and doctoral programs on six campuses, Long Island University (LIU) is one of the largest and most comprehensive institutions of higher education in the country. Like any large organization, LIU has extensive data storage requirements.

In 2005, the university needed to upgrade the data storage systems for its Brooklyn and Brookville campuses, which are both located on New York's Long Island. The older mainframe-based systems were difficult to scale, support, and upgrade. Disaster recovery solutions for the disparate solutions were also difficult to manage because separate backup and recovery applications were required for each system.

"As a university, we exist to serve our students. We need the data connection to be alive at all times so the students have the best possible learning environment and our business systems are always available," says Dr. Kamel Lecheheb, deputy CIO and dean of information technology for Long Island University.

Above all, the new storage systems needed to provide high availability for the university's new Enterprise Resource Planning (ERP) system, which includes business applications such as payroll, human resources (HR), and online registration. "Our goal was to have online registration plus the business operations that we now have scattered over many systems at one location, running through a single, highly available system that is very easy to use," says Carlos Siverio, director of network services for Long Island University.

To accomplish these goals, the university needed scalable, highly available, and centrally-manageable storage networking technology to provide continuous availability for its critical applications. They also wanted to implement a robust backup and recovery strategy to support continuous data access and to provide disaster recovery capabilities.

Network Solution

The Brooklyn and Brookville campuses were already linked with an end-to-end Cisco® infrastructure consisting of Cisco IP telephony and Unified Communications products, and more than 300 Cisco switches and routers. This network provides unified wired and wireless voice, video, and data communication, along with extensive security features. Cisco storage networking technology builds on Cisco's expertise in helping its customers to deploy, scale, and secure very large data networks while providing cost-effective management tools.

Based on Cisco's enterprise networking expertise, LIU decided to deploy a Cisco-based storage area network (SAN) using Cisco MDS 9216i Multilayer Fabric Switches. "We have been a Cisco customer for many years, and we have confidence in Cisco," says Siverio. "We also did some research and talked to other educational institutions that have SANs, and they all recommended Cisco."

The LIU ERP system is deployed on two identical Oracle server clusters at the Brookville and Brooklyn campuses. Data is stored on arrays from EMC Corporation located at the two sites, linked with a Cisco-based SAN consisting of four Cisco MDS 9216i Multilayer Fabric Switches deployed with two switches in each fabric in a dual fabric design for redundancy and high reliability. The server clusters at both sites are redundant down to the port level.

The university selected the Cisco 9216i switches specifically because they offer Fibre Channel over IP (FCIP) capability. FCIP transparently interconnects Fibre Channel (FC) SANs over IP networks to provide high-speed connectivity over long distances. This feature was important to LIU because the university's long-term strategy is to eventually mirror data between its Brooklyn and Brookville locations. FCIP capability will allow the university to cost-effectively transfer data between the SANs.

LIU has also increased application control, security, and performance with the addition of Cisco data center solutions. Each Oracle cluster is supported by two Cisco Catalyst® 6500 Series Switches. Each Cisco 6500 Series Switch contains a firewall module for protection, while Cisco Content Switching Modules (CSM) help to maximize performance through real-time load balancing. LIU is also using a Cisco GSS 4491 Global Site Selector, which works with Cisco CSMs to provide load balancing across distributed data centers for better traffic management and centralized command and control. "The load-balancing technology is particularly useful, and we are depending more and more on our Content Switching Modules," says Siverio.

With the SAN in place, LIU is transferring ERP modules one at a time to the SAN, with rigorous testing to help ensure performance and reliability. Once the ERP system is fully deployed, the Cisco SAN will mirror data between the sites so users can access data and applications from either site. Having duplicate data at both sites will provide business continuity even if one site becomes unavailable.

"Over the years we had built many individuals systems, scattered all over the university. Now we have one, scalable system that can last us for many years to come."

— Carlos Siverio, Director of Network Services, Long Island University

BUSINESS RESULTS

The new ERP system and storage area network will help LIU stay competitive by offering the infrastructure support and applications that students expect of a high-caliber university. For the students, the most visible immediate benefit will be online registration, which will eliminate the need to stand in line to register for classes. "Offering online registration was very important to us," says Siverio. "Most universities either have it already or are moving towards it. We needed online registration to stay competitive, and this platform lets us do that."

Once all the ERP modules are in place, students will also be able to access their records to see what classes they have taken in the past and what requirements they need to graduate. The university also expects that the storage area network will continue to support a steady stream of new applications as they are needed.

Students will also benefit from behind-the-scenes administrative advantages of added security, availability, and scalability. The Cisco-based SAN will help to safeguard data and applications for business continuity and provide the scalability needed to meet the increasing storage requirements of students, faculty, and administration. "Over the years we had built many individual systems, scattered all over the university. Now we have one, scalable system that can last us for many years to come," says Siverio.

NEXT STEPS

In the future, LIU plans to use the Cisco storage switches and FCIP to mirror data between sites for data backup and recovery. This capability is part of the university's long-term strategy to help ensure that students, faculty, and staff have continuous data access. "We really rely on our Cisco network," says Lecheheb. "It connects all of our equipment from end to end, and now that connectivity includes our storage networking system."

FOR MORE INFORMATION

To find out more about Cisco storage networking products and solutions, go to: www.cisco.com/go/storagenetworking

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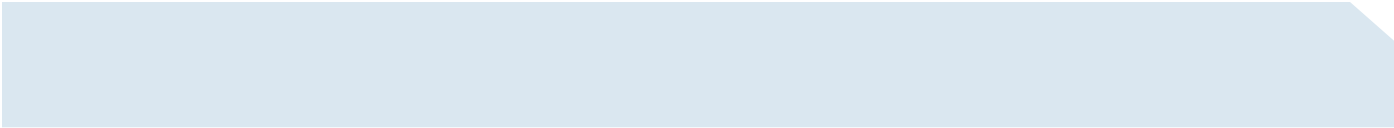
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